

Mile High Flood District Douglas County

ALERT Network 2021 End of Year Report



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January 2022

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1. INTRODUCTION

This report summarizes the field maintenance activities conducted in 2021 by Water and Earth Technologies, Inc. (WET) under contract to the Urban Drainage and Flood Control District (District) for the Real-Time Flood Detection System in Douglas County.

A single maintenance database is used to track all fieldwork conducted by WET. The maintenance records generated from the maintenance software are shown as an appendix to this report.

2. MONITORING NETWORK

Entering 2021, the District maintained a network of forty-one stations in Douglas County (County).

- | | |
|--|--|
| 1. Highlands Ranch (ID 2710) | 22. Dakan Road (ID 2980) |
| 2. Salisbury Park (ID 2730) | 23. Tomah Road (ID 10065) |
| 3. Castle Rock (ID 2750) | 24. West Creek Repeater (ID 10037) |
| 4. Antelope Creek (ID 10068) | 25. East Plum Creek at Hwy 105 (ID 3010) |
| 5. West Cherry Creek (ID 2790) | 26. West Creek Weather (ID 3020) |
| 6. Pine Cliff (ID 10057) | 27. Bingham Lake Park (ID 3030) |
| 7. Haskins Gulch (ID 2820) | 28. E. Cherry Creek at Russellville (ID 10056) |
| 8. Sulphur Gulch (ID 10066) | 29. East/West Trailhead (ID 10045) |
| 9. Cherry Creek at Bayou Gulch (ID 2850) | 30. Fire Station #47 (ID 10039) |
| 10. Cherry Creek at Stroh Road (ID 2860) | 31. Newlin Gulch at Jordan Rd (ID 10055) |
| 11. Cherry Creek at Cottonwood (ID 2870) | 32. Tallman Gulch at Tallman Park (ID 10067) |
| 12. Happy Canyon Creek (ID 10059) | 33. Big Dry Creek at Heritage Park (ID 10054) |
| 13. Spruce Mountain Open Space (ID 2890) | 34. Upper Sellers Gulch (ID 10014) |
| 14. Russellville Gulch (ID 2900) | 35. Sellers Gulch @ Haystack Rd (ID 10015) |
| 15. East Cherry Creek (ID 2910) | 36. Plum Creek at Sedalia (ID 10029) |
| 16. West Cherry Head (ID 2920) | 37. Columbine Open Space (ID 10044) |
| 17. Spring Valley Road (ID 2930) | 38. Baldwin Gulch Dam (ID 10077) |
| 18. Willow Creek (ID 2940) | 39. WCC-7 (ID 10080) |
| 19. DC Public Works (ID 2950) | 40. FP-S1 (ID 10081) |
| 20. Indian Creek (ID 2960) | 41. FP-P1 (ID 10082) |
| 21. Rampart Range Road (ID 2970) | |

A map of the monitoring network is shown. Data are received by the West Creek Repeater (ID 6001) for the majority of stations and a small handful of stations are received by the MHFD repeaters. These data are then rebroadcast to the district base station located at Diamond Hill in Denver.

The system was inspected and activated in February/March. The entire monitoring network was operational from April 1 to November 17. The rain and water level stations were shut down and winterized in mid-November. The weather stations and repeater will remain operational throughout the winter.

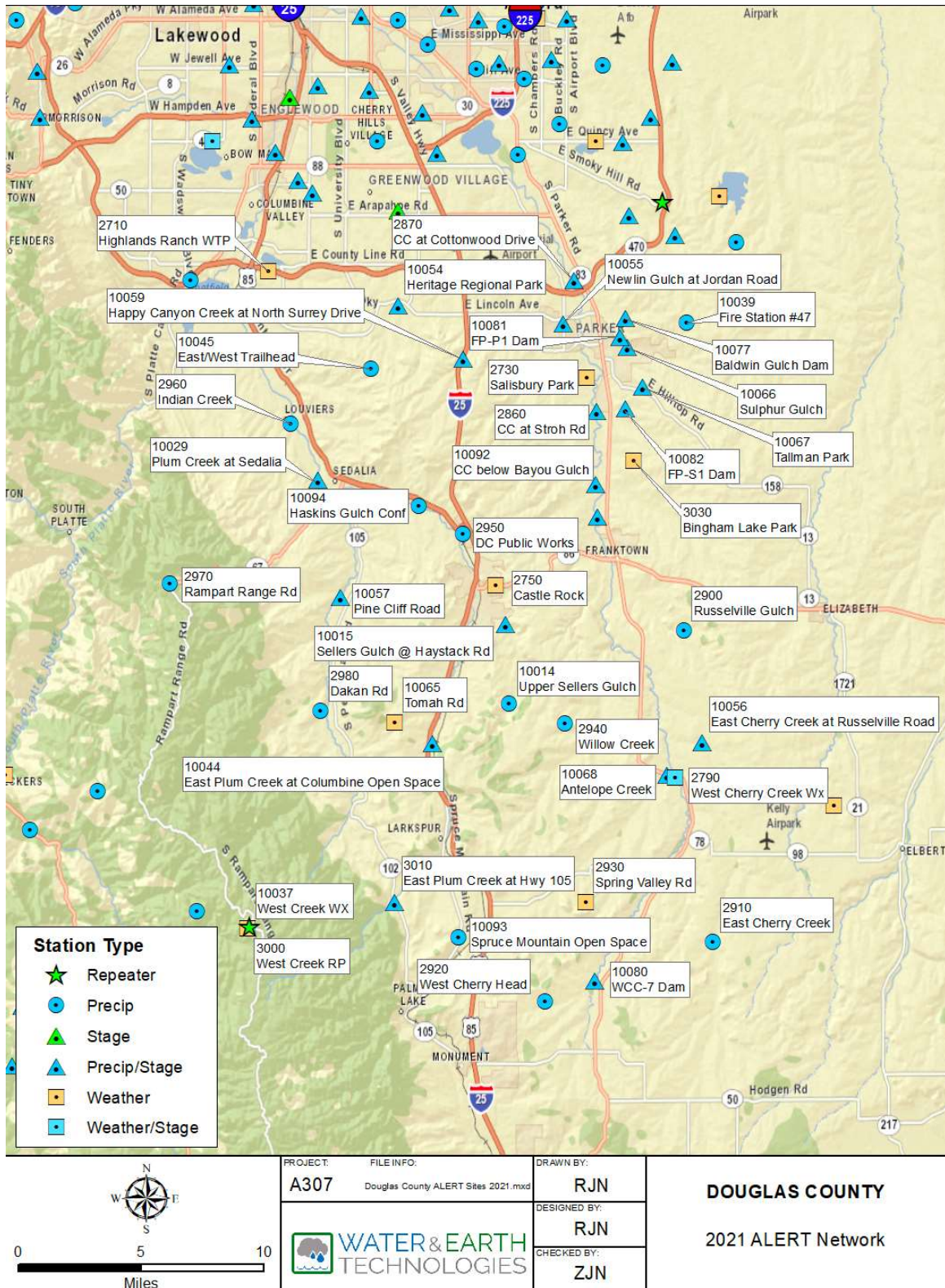


Figure 2-1. Map of Douglas County ALERT Network

3. MAINTENANCE ACTIVITIES

A summary of station types present in Douglas County is shown in **Table 3-1**. Scheduled routine maintenance inspections were conducted to each station throughout the year. **Table 3-2** shows the schedule of maintenance trips. Each station is designated as either a full weather (Wx), weather and stage (WxS), precipitation only (P), stage only (S), precipitation and stage (PS), precipitation and repeater (PR) or repeater (R).

Table 3-1. Douglas County Station Summary List

Label	Station Type	Quantity
Wx	Weather Station	7
WxS	Weather & Stream Gage	2
P	Rain Gage	12
S	Stage Gage	1
PS	Rain & Stage	16
PSF	Rain & Stage & Flasher	1
PR	Rain & Repeater	1
R	Repeater	1
	2020 TOTAL	41

Table 3-2. ALERT System Preventive Maintenance Schedule

Site ID	Station Name	Type	Apr Round 1	Jun Round 2	Jul Round 3	Aug Round 4	Oct Round 5
2710	Highlands Ranch	Wx	F	F		F	F
2730	Salisbury Park	Wx	F	F		F	F
2750	Castle Rock	Wx	F	F		F	F
10068	Antelope Creek	S	F	F		F	F
2790	West Cherry Creek	WxS	F	F		F	F
10057	Pine Cliff	PS	F	F		F	F
2820	Haskins Gulch	P	F		L		F
10066	Sulphur Gulch	PS	F	F		F	F
2850	Cherry Creek at Bayou Gulch	PS	F	F		F	F
2860	Cherry Creek at Stroh Road	PS	F	F		F	F
2870	Cherry Creek at Cottonwood	PS	F	F		F	F
10059	Happy Canyon Creek	PS	F	F		F	F
2890	Spruce Mountain Open Space	P	F		L		F
2900	Russelville Gulch	P	F		L		F
2910	East Cherry Creek	P	F		L		F
2920	West Cherry Head	P	F		L		F
2930	Spring Valley Road	Wx	F	F		F	F
2940	Willow Creek	P	F		L		F
2950	DC Public Works	P	F		L		F
2960	Indian Creek	P	F		L		F
2970	Rampart Range Road	P	F		L		F
2980	Dakan Road	PR	F	F		F	F
10065	Tomah Road	Wx	F	F		F	F
3000	West Creek Repeater	R	F	F		F	F
3010	E. Plum Creek @ Hwy 105	WxS	F	F		F	F
3020	West Creek	Wx	F	F		F	F
3030	Bingham Lake Park	Wx	F	F		F	F
10056	E. Cherry Creek @ Russelville Rd	PS	F	F		F	F
10045	East/West Trailhead	P	F		L		F
10039	Fire Station #47	P	F		L		F
10055	Newlin Gulch @ Jordan Rd	PSF	F	F		F	F
10067	Tallman Gulch @ Tallman Park	PS	F	F		F	F
10054	Big Dry Creek @ Heritage Regional	PS	F	F		F	F
10014	Upper Sellers Gulch	P	F		L		F
10015	Sellers Gulch at Haystack	PS	F	F		F	F
10029	Plum Creek at Seldalia	PS	F	F		F	F
10044	E. Plum Creek @ Columbine Open Space	PS	F	F		F	F
10077	Baldwin Gulch Dam	PS	F	F		F	F
10080	WCC-7 Dam	PS	F	F		F	F
10081	FP-P1 Dam	PS	F	F		F	F
10082	FP-S1 Dam	PS	F	F		F	F

The type of preventive maintenance performed during each visit is designated as either full service (F) or low impact (L). The **full-service** inspection includes removal of the top section of each ALERT rain gage standpipe assembly to clean the screen, funnel, and tipping bucket. Tipping buckets are leveled; standpipes and other appurtenances are painted to protect against corrosion and vandalism; antenna mounts, clamps, cables, and conduits are secured; and each site is inspected to meet the terms of existing license agreements or varying field conditions. The radio and antenna system are tested. The battery is checked. Test transmissions are performed to assure that gage reports are being received by ALERT base stations. Pressure transducer (PT) orifices and protective housings are checked and maintained free of mud and debris. Pressure tests are performed on all accessible PT's. Transmitted data are recorded and compared with calibration tables. All defective equipment is repaired or replaced as needed using available spare parts. Calibration adjustments are made as needed.

The **low impact** inspection is conducted on rain only sites and includes a non-penetrating assessment of the general condition of the site and a tipping bucket performance test using water. If the low impact inspection indicates possible problems, a full-service inspection is conducted.

A summary of maintenance work performed at each location is provided in the following sections. Detailed maintenance records are provided under cover of this report.

3.1 HIGHLANDS RANCH WTP WX (ID 2710)

The weather station at Highlands Ranch Water Treatment Plant was visited for a full-service inspection on April 1st. All equipment was checked, cleaned, and tested and found to be in working order.

The mid-season inspection was conducted on June 9th. All equipment was checked, cleaned, and tested.

A second mid-season inspection was conducted on August 25th. All equipment was checked, cleaned, and tested. Test transmissions were not received but the station began reporting later that day.

On November 16th, a final inspection and maintenance was performed. The tipping bucket was covered, and the weather sensors remain operational throughout the winter.



Photo 3-1. Highlands Ranch WTP (Wx)

Table 3-3. Highlands Ranch Maintenance Summary

Sta. No.	Station Name	Date	Battery Voltage			Solar Regulator		Radio		
			Quiet (V)	Load (V)	Delta (V)	Output Voltage (V)	Output Current (mA)	FWD (W)	REF (W)	SWR
2710	Highlands Ranch WTP	4/1/2021	13.40	13.28	0.12	13.85	67	3.50	0.00	1.00
		6/9/2021	12.65	12.56	0.09	13.85	18	4.00	0.00	1.00
		8/25/2021	12.68	12.58	0.10	13.85	33	4.00	0.00	1.00
		11/16/2021	12.73	12.62	0.11	11.57	10	3.75	0.00	1.00

3.2 SALISBURY PARK WX (ID 2730)

The weather station at Highlands Ranch Water Treatment Plant was visited for a full-service inspection on March 26th. All equipment was checked, cleaned, and tested and found to be in working order.

The mid-season inspection was conducted on June 16th. All equipment was checked, cleaned, and tested.

A second mid-season inspection was conducted on August 27th. All equipment was checked, cleaned, and tested.

On November 17th, a final inspection and full maintenance was performed. The tipping bucket was covered, and the weather sensors remain operational throughout the winter.



Photo 3-2. Salisbury Park (Wx)

Table 3-4. Salisbury Park Maintenance Summary

Sta. No.	Station Name	Date	Battery Voltage			Solar Regulator		Radio		
			Quiet (V)	Load (V)	Delta (V)	Output Voltage (V)	Output Current (mA)	FWD (W)	REF (W)	SWR
2730	Salisbury Park	3/26/2021	13.94	13.80	0.14	21.73	91	4.00	0.00	1.00
		6/16/2021	13.44	13.34	0.10	13.87	94	5.00	0.00	1.00
		8/27/2021	13.22	13.10	0.12	18.69	97	4.00	0.00	1.00
		11/17/2021	13.55	13.41	0.14	14.93	28	4.50	0.10	1.35

3.3 CASTLE ROCK WX (ID 2750)

A full-service inspection was conducted at the Castle Rock weather station on April 2nd. All equipment was checked, cleaned, and tested and found to be in working order.

The mid-season inspection was conducted on June 16th. All equipment was checked, cleaned, and tested.

A second mid-season inspection was conducted on August 26th. All equipment was checked, cleaned, and tested.

On November 16th, a final inspection and full maintenance was performed. The tipping bucket was covered, and the weather sensors remain operational throughout the winter.



Photo 3-3. Castle Rock Weather Station (Wx)

Table 3-5. Castle Rock Maintenance Summary

Sta. No.	Station Name	Date	Battery Voltage			Solar Regulator		Radio		
			Quiet	Load	Delta	Output	Output	FWD	REF	SWR
						Voltage	Current			
			(V)	(V)	(V)	(V)	(mA)	(W)	(W)	
2750	Castle Rock	4/2/2021	13.59	13.49	0.10	13.93	138	4.00	0.00	1.00
		6/16/2021	13.54	13.44	0.10	13.80	69	4.25	0.00	1.00
		8/26/2021	13.63	13.53	0.10	13.89	69	4.50	0.10	1.35
		11/16/2021	13.69	13.61	0.08	13.69	99	4.50	0.00	1.00

3.4 ANTELOPE CREEK S (ID 2780/10068)

The station at Antelope Creek was visited for a full-service inspection on March 31st. All equipment was checked, cleaned, and tested and found to be in working order.

The mid-season inspection was conducted on June 9th. All equipment was checked, cleaned, and tested.

A second mid-season inspection was conducted on August 25th. All equipment was checked, cleaned, and tested.

On November 3rd, winter shut-down activities were performed. The transmitter was removed, and the PT was pulled up into its winter location.



Photo 3-4. Antelope Creek (S)

Table 3-6. Antelope Creek Maintenance Summary

Sta. No.	Station Name	Date	Battery Voltage			Solar Regulator		Radio			Pressure Transducer			
			Quiet	Load	Delta	Output Voltage	Output Current	FWD	REF	SWR	Multiplier	Offset	Date	Time
			(V)	(V)	(V)	(V)	(mA)	(W)	(W)					
10068	Antelope Creek	3/31/2021	12.86	12.76	0.10	13.64	89	4.00	0.00	1.00	25.97	-0.28	3/31/2021	1:00 PM
		6/9/2021	13.18	13.08	0.10	13.62	33	5.00	0.75	2.26	25.96	-0.25	6/9/2021	1:30 PM
		8/25/2021	13.27	13.17	0.10	13.60	20	4.00	0.00	1.00	26.06	-0.04	8/25/2021	3:30 PM

3.5 WEST CHERRY CREEK WXS (ID 2790)

The weather station at West Cherry Creek was visited for a full-service inspection on March 31st. All equipment was checked, cleaned, and tested.

The mid-season inspection was conducted on June 9th. The station was not serviced due to issues with the PT. The PT was causing the battery voltage to read 16.0 volts and the other sensors to read incorrectly. After the PT was unplugged, everything was working properly.

A second mid-season inspection was conducted on August 30th. All equipment was checked, cleaned, and tested. The PT was replaced.

On November 16th, winter shut-down activities were performed with full maintenance. The PT was pulled up into its winter location. The tipping bucket was covered, and the weather sensors remain operational throughout the winter.



Photo 3-5. West Cherry Creek (WxS)

Table 3-7. West Cherry Creek Maintenance Summary

Sta. No.	Station Name	Date	Battery Voltage			Solar Regulator		Radio			Pressure Transducer			
			Quiet	Load	Delta	Output Voltage	Output Current	FWD	REF	SWR	Slope	Offset	Date	Time
			(V)	(V)	(V)	(V)	(mA)	(W)	(W)					
2790	West Cherry Creek	3/31/2021	13.52	13.36	0.16	21.78	752	4.25	0.00	1.00	0.0911	-0.0356	3/31/2021	11:55 AM
		6/9/2021	-	-	-	-	-	-	-	-	-	-	-	-
		8/30/2021	13.18	13.08	0.10	20.09	620	4.50	0.00	1.00	0.1046	0.0573	8/30/2021	11:03 AM
		11/16/2021	13.58	13.48	0.10	20.85	277	5.00	0.10	1.33	-	-	-	-

3.6 PINE CLIFF PS (ID 2810/10057)

The station at Pine Cliff Road was activated for the season on April 1st. All equipment was checked, cleaned, and tested. The radar reading was changed to match the reading on the wire-weight gage.

The mid-season inspection was conducted on June 8th. All equipment was checked, cleaned, and tested.

A second mid-season inspection was conducted on August 6th. All equipment was checked, cleaned, and tested.

On November 15th, winter shut-down activities were performed. The transmitter was removed.



Photo 3-6: Pine Cliff (PS)

Table 3-8: Pine Cliff Maintenance Summary

Sta. No.	Station Name	Date	Battery Voltage			Solar Regulator		Radio		
			Quiet (V)	Load (V)	Delta (V)	Output Voltage	Output Current	FWD (W)	REF (W)	SWR
						(V)	(mA)			
10057	Pine Cliff	4/1/2021	12.65	12.54	0.11	14.21	563	4.25	0.10	1.36
		6/8/2021	13.18	13.10	0.08	20.56	696	5.00	0.00	1.00
		8/6/2021	12.92	12.84	0.08	19.53	563	4.50	0.00	1.00

3.7 HASKINS GULCH P (ID 2820/10094)

The station at Haskins Gulch Confluence was activated for the season on April 1st. All equipment was checked, cleaned, and tested.

The mid-season low impact inspection was performed on September 7th. All tested equipment was in working order. The station was upgraded to ALERT2 and replaced the radio. The station was having transmission issues throughout the year and after the station was upgraded to ALERT2, transmission quality has increased. The new ALERT2 ID is 10094 and offset 114000.

On November 16th, winter shut-down activities were performed. The transmitter was removed for winter storage.

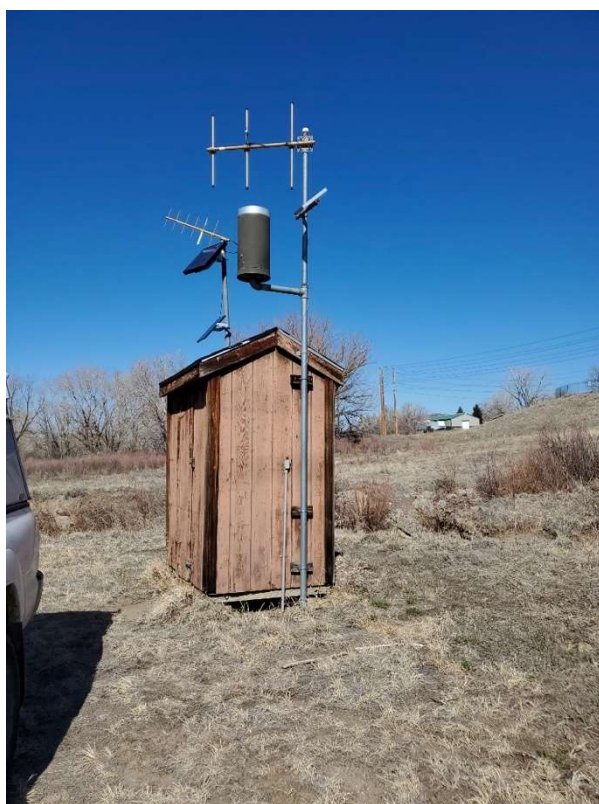


Photo 3-7. Haskins Gulch (P)

Table 3-9. Haskins Gulch Maintenance Summary

Sta. No.	Station Name	Date	Battery Voltage			Solar Regulator		Radio		
			Quiet	Load	Delta	Output Voltage	Output Current	FWD	REF	SWR
			(V)	(V)	(V)	(V)	(mA)	(W)	(W)	
2820	Haskins Gulch	4/1/2021	12.80	12.69	0.11	20.37	196	4.50	0.10	1.35

3.8 SULPHUR GULCH PS (ID 2840/10066)

The station at Sulphur Gulch was activated for the season on April 2nd. All equipment was checked, cleaned, and tested.

The mid-season inspection was conducted on June 17th. All equipment was checked, cleaned, and tested.

A second mid-season inspection was conducted on August 30th. All equipment was checked, cleaned, and tested. A door kit was installed on the station to help with access to the transmitter and to prevent cables from being damaged.

On November 3rd, winter shut-down activities were performed. The transmitter was removed, and the PT was pulled up into its winter position.



Photo 3-8. Sulphur Gulch (PS)

Table 3-10. Sulphur Gulch Maintenance Summary

Sta. No.	Station Name	Date	Battery Voltage			Solar Regulator		Radio			Pressure Transducer			
			Quiet	Load	Delta	Output Voltage	Output Current	FWD	REF	SWR	Multiplier	Offset	Date	Time
			(V)	(V)	(V)	(V)	(mA)	(W)	(W)					
10066	Sulphur Gulch	4/2/2021	12.97	12.87	0.10	20.49	291	4.50	0.10	1.35	23.15	-0.02	4/2/2021	2:30 PM
		6/17/2021	13.56	13.45	0.11	14.41	234	4.75	0.25	1.60	23.15	-0.01	6/17/2021	11:00 AM
		8/30/2021	14.04	13.93	0.11	13.77	154	4.50	0.20	1.53	23.34	-0.03	8/30/2021	3:50 PM

3.9 CHERRY CREEK AT BAYOU GULCH PS (ID 2850/10092)

The station at Bayou Gulch was activated for the season on March 19th. All equipment was checked, cleaned, and tested.

The mid-season inspection was conducted on June 16th. All equipment was checked, cleaned, and tested.

A second mid-season inspection was conducted on September 2nd. All equipment was checked, cleaned, and tested. A door kit was installed at the station for ease of access to the transmitter and to prevent cables from being damaged while removing the transmitter. The station was also upgraded to ALERT2 due to transmissions issues. The station was going days between transmissions, and it was found to be due to a radio frequency issue. Once upgraded to ALERT2 transmission quality improved and far less transmissions were missed. The new ALERT2 ID is 10092 and the offset is 113000.

On November 3rd, winter shut-down activities were performed. The transmitter was removed, and the PT was pulled up into its winter position.



Photo 3-9. Cherry Creek at Bayou Gulch (PS)

Table 3-11. Cherry Creek at Bayou Gulch Maintenance Summary

Sta. No.	Station Name	Date	Battery Voltage			Solar Regulator		Radio			Pressure Transducer			
			Quiet	Load	Delta	Output Voltage	Output Current	FWD	REF	SWR	Slope	Offset	Date	Time
			(V)	(V)	(V)	(V)	(mA)	(W)	(W)					
2850	Cherry Creek at Bayou Gulch	3/19/2021	12.83	12.72	0.11	14.40	182	3.75	0.10	1.39	0.0921	-0.0918	3/19/2021	11:00:00 AM
		6/16/2021	13.58	13.47	0.11	18.99	131	4.25	0.25	1.64	0.0914	-0.1139	6/16/2021	10:30:00 AM
		9/2/2021	13.26	13.14	0.12	14.01	60	4.00	0.20	1.58	23.12	-0.10	9/2/2021	3:30:00 PM

3.10 CHERRY CREEK AT STROH ROAD PS (ID 2860)

The station at Stroh Road was activated for the season on March 19th. All equipment was checked, cleaned, and tested. The signal conditioning box was replaced with a new terminal block.

The mid-season inspection was conducted on June 16th. The tipping bucket military connector was re-soldered because tips were not being recording. All equipment was checked, cleaned, and tested.

A second mid-season inspection was conducted on August 26th. All equipment was checked, cleaned, and tested.

On November 3rd, winter shut-down activities were performed. The transmitter was removed, and the PT was pulled up into its winter position.

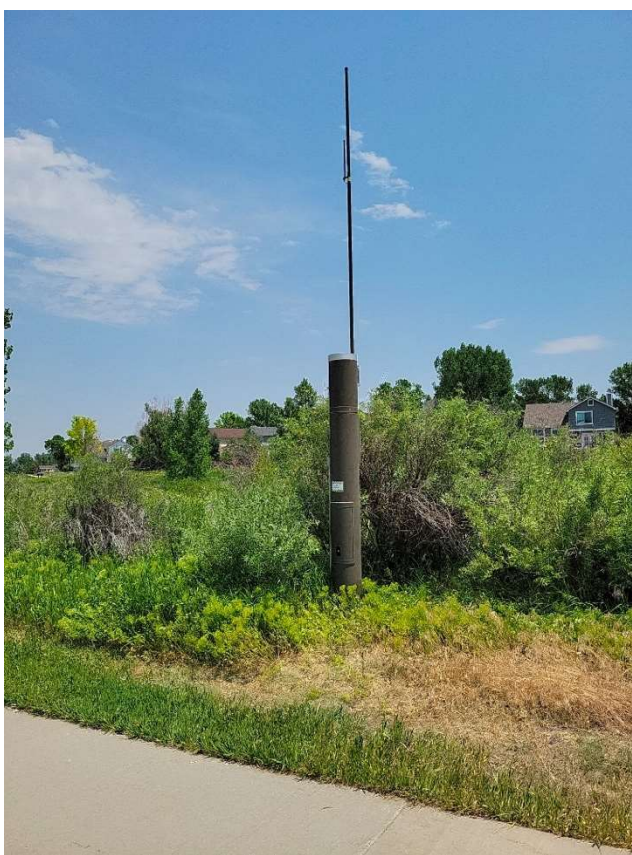


Photo 3-10. Cherry Creek at Stroh Road (PS)

Table 3-12. Cherry Creek at Stroh Road Maintenance Summary

Sta. No.	Station Name	Date	Battery Voltage			Solar Regulator		Radio			Pressure Transducer			
			Quiet	Load	Delta	Output	Output	FWD	REF	SWR				
			(V)	(V)	(V)	(V)	(mA)	(W)	(W)		Slope	Offset	Date	Time
2860	Cherry Creek at Stroh Road	3/19/2021	12.96	12.69	0.27	13.83	96	4.75	0.20	1.52	0.0046	0.0087	4/2/2021	12:17 PM
		6/16/2021	13.32	13.24	0.08	13.84	41	5.00	0.10	1.33	0.0910	0.0085	6/16/2021	12:13 PM
		8/26/2021	13.28	13.16	0.12	13.84	24	4.75	0.00	1.00	0.0926	-0.1168	8/26/2021	3:00 PM

3.11 CHERRY CREEK AT COTTONWOOD PS (ID 2870)

The station at Cherry Creek at Cottonwood was activated for the season on April 5th. All equipment was checked, cleaned, and tested. All equipment was in working order.

The mid-season inspection was conducted on June 15th. All equipment was checked, cleaned, and tested.

A second mid-season inspection was conducted on August 27th. All equipment was checked, cleaned, and tested.

On November 3rd, winter shut-down activities were performed. The transmitter was removed, and the PT was pulled up into its winter position.



Photo 3-11. Cherry Creek at Cottonwood (PS)

Table 3-13. Cherry Creek at Cottonwood Maintenance Summary

Sta. No.	Station Name	Date	Battery Voltage			Solar Regulator		Radio			Pressure Transducer			
			Quiet	Load	Delta	Output	Output	FWD	REF	SWR				
			(V)	(V)	(V)	Voltage	Current	(W)	(W)		Slope	Offset	Date	Time
2870	Cherry Creek at Cottonwood	4/5/2021	13.96	13.85	0.11	13.77	38	5.00	0.75	2.26	0.090	-0.0162	4/5/2021	3:12 PM
		6/15/2021	13.03	12.94	0.09	13.79	10	5.00	0.27	2.26	0.0905	-0.00844	6/15/2021	4:17 PM
		8/27/2021	13.18	13.09	0.09	13.79	76	4.75	0.00	1.00	0.092	0.0474	8/27/2021	11:45 AM

3.12 HAPPY CANYON CREEK PS (ID 2880/10059)

The station at Happy Canyon Creek was activated for the season on March 19th. All equipment was checked, cleaned, and tested.

The mid-season inspection was conducted on June 17th. All equipment was checked, cleaned, and tested.

A second mid-season inspection was conducted on August 26th. All equipment was checked, cleaned, and tested.

On November 3rd, winter shut-down activities were performed, and the PT was pulled up into its winter position.



Photo 3-12. Happy Canyon Creek (PS)

Table 3-14. Happy Canyon Creek Maintenance Summary

Sta. No.	Station Name	Date	Battery Voltage			Solar Regulator		Radio			Pressure Transducer			
			Quiet	Load	Delta	Output Voltage	Output Current	FWD	REF	SWR	Multiplier	Offset	Date	Time
			(V)	(V)	(V)	(V)	(mA)	(W)	(W)					
10059	Happy Canyon @ Surrey	3/19/2021	12.82	12.64	0.18	14.51	99	2.50	0.25	1.93	26.46	-1.05	3/19/2021	9:42:00 AM
		6/17/2021	13.19	13.09	0.10	14.09	18	3.75	0.25	1.70	26.57	-1.02	6/17/2021	8:27:00 AM
		8/26/2021	13.07	12.99	0.08	22.01	169	3.50	0.10	1.41	26.58	-1.00	8/26/2021	8:20 AM

3.13 SPRUCE MOUNTAIN OPEN SPACE P (ID 2890/10093)

The station at Spruce Mountain Open Space was activated for the season on March 31st. All equipment was checked, cleaned, and tested.

A couple weeks after installing the transmitter the station quit reporting. The base station was not receiving transmissions for multiple days at a time and then a transmission would come through. We changed the transmission frequency to 5 minutes to try and determine if there was an issue with the station or the repeater. We could decode data at the truck near the station but not in between the repeater and base station. This led to the belief that there was some sort of interference happening between the station and repeater since all ALERT2 stations were being received at hourly transmissions. Transmissions continued to not be received for a few days and then started to appear.

The mid-season low impact inspection was performed on July 29th. All tested equipment was in working order.

On September 2nd the station was upgraded to ALERT2 with the ID of 10093 and offset of 113500. Transmission quality immediately improved. This shows that there is interference on the Legacy ALERT frequency.

On October 21st, winter shut-down activities were performed. The transmitter was removed for winter storage.



Photo 3-13. Spruce Mountain Open Space (P)

Table 3-15. Spruce Mountain Open Space Maintenance Summary

Sta. No.	Station Name	Date	Battery Voltage			Solar Regulator		Radio		
			Quiet	Load	Delta	Output	Output	FWD	REF	SWR
						Voltage	Current			
			(V)	(V)	(V)	(V)	(mA)	(W)	(W)	
2890	Spruce Mountain Open Space	3/31/2021	12.20	12.00	0.20	22.01	361	3.50	0.00	1.00

3.14 RUSSELLVILLE GULCH P (ID 2900)

The station at Russellville Gulch was activated for the season on March 25th. All equipment was checked, cleaned, and tested. The amplifier was not working correctly and may need to be replaced. Only 4.25 watts were traveling through the antenna system, but transmission were being received. The amplifier was not replaced since data were still able to get to the repeater.

The mid-season low impact inspection was performed on July 29th. All tested equipment was in working order.

On November 16th, winter shut-down activities were performed. The transmitter was removed for winter storage. The amplifier will be tested and replaced if needed over winter.



Photo 3-14. Russellville Gulch (P)

Table 3-16. Russellville Gulch Maintenance Summary

Sta. No.	Station Name	Date	Battery Voltage			Solar Regulator		Radio		
			Quiet	Load	Delta	Output Voltage	Output Current	FWD	REF	SWR
			(V)	(V)	(V)	(V)	(mA)	(W)	(W)	
2900	Russellville Gulch	3/25/2021	12.71	12.47	0.24	20.31	354	4.25	0.00	1.00

3.15 EAST CHERRY CREEK P (ID 2910)

The station at East Cherry Creek was activated for the season on March 25th. All equipment was checked, cleaned, and tested.

The mid-season low impact inspection was performed on July 29th. All tested equipment was in working order.

On November 16th, winter shut-down activities were performed. The transmitter was removed for winter storage.



Photo 3-15. East Cherry Creek (P)

Table 3-17. East Cherry Creek Maintenance Summary

Sta. No.	Station Name	Date	Battery Voltage			Solar Regulator		Radio		
			Quiet	Load	Delta	Output	Output	FWD	REF	SWR
						Voltage	Current			
			(V)	(V)	(V)	(V)	(mA)	(W)	(W)	
2910	East Cherry Creek	3/25/2021	12.80	12.69	0.11	14.31	270	3.25	0.00	1.00

3.16 WEST CHERRY HEAD P (ID 2920)

The station at West Cherry Head was activated for the season on March 31st. All equipment was checked, cleaned, and tested.

The mid-season low impact inspection was performed on July 29th. All tested equipment was in working order.

On November 16th, winter shut-down activities were performed. The transmitter was removed for winter storage.



Photo 3-16. West Cherry Head (P)

Table 3-18. West Cherry Head Maintenance Summary

Sta. No.	Station Name	Date	Battery Voltage			Solar Regulator		Radio		
			Quiet	Load	Delta	Output Voltage	Output Current	FWD	REF	SWR
			(V)	(V)	(V)	(V)	(mA)	(W)	(W)	
2920	West Cherry Head	3/31/2021	12.91	12.78	0.13	No Solar Panel		3.25	0.00	1.00

3.17 SPRING VALLEY ROAD WX (ID 2930)

The weather station at Spring Valley Road was visited for a full-service inspection on March 25th. All equipment was checked, cleaned, and tested.

The mid-season inspection was performed on June 9th. All tested equipment was in working order. The wind sensor was loosened and cleaned to move better.

A second mid-season inspection was conducted on August 25th. All equipment was checked, cleaned, and tested.

On November 16th, a final inspection and full maintenance was performed. The tipping bucket was covered, and the weather sensors remain operational throughout the winter.



Photo 3-17. Spring Valley Road (Wx)

Table 3-19. Spring Valley Road Maintenance Summary

Sta. No.	Station Name	Date	Battery Voltage			Solar Regulator		Radio		
			Quiet	Load	Delta	Output	Output	FWD	REF	SWR
						Voltage	Current			
			(V)	(V)	(V)	(V)	(mA)	(W)	(W)	
2930	Spring Valley Road	3/25/2021	14.47	14.39	0.08	20.21	234	4.75	0.25	1.60
		6/9/2021	13.82	13.71	0.11	16.10	185	5.00	0.25	1.58
		8/25/2021	13.78	13.69	0.09	19.03	202	4.25	0.00	1.00
		11/16/2021	13.77	13.69	0.08	16.57	114	5.00	0.25	1.58

3.18 WILLOW CREEK P (ID 2940)

The station at Willow Creek was activated for the season on March 25th. All equipment was checked, cleaned, and tested.

The mid-season low impact inspection was performed on July 29th. All tested equipment was in working order.

On November 3rd, winter shut-down activities were performed. The transmitter was removed for winter storage.



Photo 3-18. Willow Creek (P)

Table 3-20. Willow Creek Maintenance Summary

Sta. No.	Station Name	Date	Battery Voltage			Solar Regulator		Radio		
			Quiet	Load	Delta	Output Voltage	Output Current	FWD	REF	SWR
			(V)	(V)	(V)	(V)	(mA)	(W)	(W)	
2940	Willow Creek	3/25/2021	12.71	12.57	0.14	21.31	284	4.25	0.25	1.64

3.19 DC PUBLIC WORKS P (ID 2950)

The station at Douglas County Public Works was activated for the season on March 24th. All equipment was checked, cleaned, and tested.

The mid-season low impact inspection was performed on July 29th. All tested equipment was in working order.

On November 15th, winter shut-down activities were performed. The transmitter was removed for winter storage.



Photo 3-19. DC Public Works (P)

Table 3-21. DC Public Works Maintenance Summary

Sta. No.	Station Name	Date	Battery Voltage			Solar Regulator		Radio		
			Quiet	Load	Delta	Output Voltage	Output Current	FWD	REF	SWR
			(V)	(V)	(V)	(V)	(mA)	(W)	(W)	
2950	DC Public Works	3/24/2021	12.85	12.73	0.12	20.61	189	3.75	0.10	1.39

3.20 INDIAN CREEK P (ID 2960)

The station at Indian Creek was activated for the season on March 24th. All equipment was checked, cleaned, and tested.

The mid-season low impact inspection was performed on July 29th. All tested equipment was in working order.

On November 16th, winter shut-down activities were performed. The transmitter was removed for winter storage.



Photo 3-20. Indian Creek (P)

Table 3-22. Indian Creek Maintenance Summary

Sta. No.	Station Name	Date	Battery Voltage			Solar Regulator		Radio		
			Quiet (V)	Load (V)	Delta (V)	Output Voltage (V)	Output Current (mA)	FWD (W)	REF (W)	SWR
2960	Indian Creek	3/24/2021	12.79	12.69	0.10	20.30	101	4.25	0.00	1.00

3.21 RAMPART RANGE ROAD P (ID 2970)

The station at Rampart Range was activated for the season on April 2nd. All equipment was checked, cleaned, and tested.

The mid-season low impact inspection was performed on July 29th. All tested equipment was in working order.

On November 15th, winter shut-down activities were performed. The transmitter was removed for winter storage.



Photo 3-21. Rampart Range Road (P)

Table 3-23. Rampart Range Road Maintenance Summary

Sta. No.	Station Name	Date	Battery Voltage			Solar Regulator		Radio		
			Quiet	Load	Delta	Output Voltage	Output Current	FWD	REF	SWR
			(V)	(V)	(V)	(V)	(mA)	(W)	(W)	
2970	Rampart Range Road	4/2/2021	12.97	N/A	N/A	20.54	69	N/A	N/A	N/A

3.22 DAKAN ROAD PR (ID 2980)

On January 11th, the battery was replaced.

The rain gage and repeater at Dakan Road was visited for a full-service inspection on April 1st. All equipment was checked, cleaned, and tested.

The mid-season maintenance inspection was performed on June 8th. All tested equipment was in working order.

A second mid-season inspection was conducted on August 25th. All equipment was checked, cleaned, and tested.

On November 16th, winter shut-down activities were performed. The transmitter was kept in place to act as a repeater for Hwy 105 and the tipping bucket was covered.



Photo 3-22. Dakan Road (PR)

Table 3-24. Dakan Road Maintenance Summary

Sta. No.	Station Name	Date	Battery Voltage			Solar Regulator		Radio		
						Output	Output			
			Quiet (V)	Load (V)	Delta (V)	Voltage (V)	Current (mA)	FWD (W)	REF (W)	SWR
2980	Dakan Road	4/1/2021	13.15	13.05	0.10	20.79	339	5.00	0.50	1.93
		6/8/2021	13.06	12.94	0.12	20.42	195	5.00	0.50	1.93
		8/25/2021	12.97	12.89	0.08	20.87	307	4.00	0.00	1.00

3.23 TOMAH ROAD WX (ID 2990/10065)

On January 7th the station was visited because it was experiencing latency and GPS issues. It was determined that the cable from the GPS polyphaser to the transmitter was faulty and was replaced. The station was reprogrammed and started working correctly after the cable change.

The weather station at Tomah Road was visited for a full-service inspection on March 31st. All equipment was checked, cleaned, and tested.

The mid-season inspection was conducted on June 9th. All equipment was checked, cleaned, and tested.

A second mid-season inspection was conducted on August 26th. All equipment was checked, cleaned, and tested.

On November 16th, a final inspection and full maintenance was performed. The tipping bucket was covered, and the weather sensors remain operational throughout the winter.



Photo 3-23. Tomah Road (Wx)

Table 3-25. Tomah Road Maintenance Summary

Sta. No.	Station Name	Date	Battery Voltage			Solar Regulator		Radio		
			Quiet (V)	Load (V)	Delta (V)	Output Voltage (V)	Output Current (mA)	FWD (W)	REF (W)	SWR
10065	Tomah Road	3/31/2021	13.36	13.27	0.09	14.36	304	3.75	0.10	1.39
		6/9/2021	13.02	12.93	0.09	13.96	39	4.00	0.10	1.38
		8/26/2021	13.06	12.98	0.08	14.65	28	3.25	0.25	1.77
		11/16/2021	13.40	13.29	0.11	19.82	130	4.50	0.25	1.62

3.24 WEST CREEK REPEATER R (ID 3000/6001)

The early season maintenance visit was conducted on February 25th due to the repeater not reporting. The bad UPC was removed, and a battery was installed with a battery charger to act as a backup for the repeater if the power goes out. All equipment was checked and tested.

The mid-season inspection was conducted on August 24th. The radios and antenna system were tested.



Photo 3-24: West Creek (R)

3.25 HIGHWAY 105 AT EAST PLUM CREEK WXS (ID 3010)

The pre-season inspection was conducted on April 1st. The radio was tested without the amplifier and all equipment was checked and tested.

The mid-season inspection was conducted on June 8th. The radio was tested without the amplifier and all equipment was checked and tested.

A second mid-season inspection was conducted on August 25th. The radio was tested without the amplifier and all equipment was checked and tested.

On November 16th, a final inspection and full-service maintenance was performed. All equipment was checked and tested. The PT was pulled up into its winter position. The tipping bucket was covered, and the weather sensors remain operational throughout the winter.

During the winter months, the site will continue to provide webcam images and temperature data to: <http://www.wunderground.com/weatherstation/WXDailyHistory.asp?ID=KCOLARKS11>.



Photo 3-25. Highway 105 at East Plum Creek (WxS)

Table 3-26. Highway 105 at East Plum Creek Maintenance Summary

Sta. No.	Station Name	Date	Battery Voltage			Solar Regulator		Radio		
			Quiet (V)	Load (V)	Delta (V)	Output Voltage (V)	Output Current (mA)	FWD (W)	REF (W)	SWR
3010	East Plum Creek at Hwy 105	4/1/2021	13.21	13.10	0.11	21.37	2012	4.25	0.25	1.64
		6/8/2021	13.26	13.15	0.11	19.60	1100	4.25	0.10	1.36
		8/25/2021	13.57	13.47	0.10	20.17	4650	4.50	0.10	1.35
		11/16/2021	13.10	12.93	0.17	20.59	1871	4.75	0.00	1.00

3.26 WEST CREEK WX (ID 3020/10037)

The ALERT2 weather station at West Creek was visited for a full-service inspection in June, but maintenance could not be performed due to a rainstorm.

The mid-season inspection was conducted on August 24th. All equipment was checked and tested. Upon arrival, the clock time was 10 years in the past and no lights were lit on the encoder board. The ALERT2 encoder board was replaced due to bad reports, GPS issues, and data being received at the base station experiencing large latency issues. Once the encoder board was replaced, transmissions improved for a short period of time. Weeks later the station started losing GPS occasionally and missing large periods of reports. The station would then begin transmitting again when it received lock but there were still latency issues present. The station was removed on November 15th to be sent back to Hydrolynx to be diagnosed and repaired.

The station was returned to WET on December 13th. It was found that the radio was drawing too much power causing issues with the 5096 and communication between the 5096 and encoder board. The station was attempted to be reinstalled on December 16th, but more issues were encountered. The ALERT2 encoder board was not receiving lock and it was determined that there was a short in the GPS antenna cable somewhere causing the encoder board to constantly restart. Also, the 5096 was having issues turning on analog power to read the temperature and relative humidity sensors, but when the analog power was turned on, the sensors were reading fine. The station was brought back to WET along with the mast of the standpipe for further testing over the winter.



Photo 3-26. West Creek (Wx)

Table 3-27. West Creek Maintenance Summary

Sta. No.	Station Name	Date	Battery Voltage			Solar Regulator		Radio		
			Quiet (V)	Load (V)	Delta (V)	Output Voltage (V)	Output Current (mA)	FWD (W)	REF (W)	SWR
10037	West Creek Weather	6/10/2021	-	-	-	-	-	-	-	-
		8/24/2021	13.14	13.04	0.10	13.87	106	5.00	1.00	1.33

3.27 BINGHAM LAKE PARK WX (ID 3030)

The weather station at Bingham Lake Park was visited for a full-service inspection on March 26th. All equipment was checked, cleaned, and tested.

The mid-season inspection was performed on June 16th. All equipment was checked, cleaned, and tested.

The second mid-season inspection was conducted on August 26th. All equipment was checked and tested.

On November 17th, a final inspection and full-service maintenance was performed. Since this is a weather station, it is operational throughout the winter, so the transmitter was not removed.



Photo 3-27. Bingham Lake Park (Wx)

Table 3-28. Bingham Lake Park Maintenance Summary

Sta. No.	Station Name	Date	Battery Voltage			Solar Regulator		Radio		
			Quiet (V)	Load (V)	Delta (V)	Output Voltage (V)	Output Current (mA)	FWD (W)	REF (W)	SWR
3030	Bingham Lake Park	3/26/2021	14.06	13.94	0.12	20.87	84	4.50	0.00	1.00
		6/16/2021	13.59	13.46	0.13	13.73	183	5.00	0.25	1.58
		8/26/2021	13.45	13.35	0.10	20.29	69	5.00	0.00	1.00
		11/17/2021	12.75	12.65	0.10	14.91	20	4.50	0.00	1.00

3.28 EAST CHERRY CREEK AT RUSSELLVILLE ROAD PS (ID 3040/10056)

The station at East Cherry Creek at Russellville was visited for a full-service inspection on March 31st. All equipment was checked, cleaned, and tested.

The mid-season inspection was performed on June 9th. All equipment was checked, cleaned, and tested.

The second mid-season inspection was conducted on August 25th. All equipment was checked and tested. All equipment was in working order.

The end of season inspection was conducted on November 3rd. The transmitter was removed, and the PT was pulled up into its winter position.



Photo 3-28. East Cherry Creek at Russellville (PS)

Table 3-29. East Cherry Creek at Russellville Maintenance Summary

Sta. No.	Station Name	Date	Battery Voltage			Solar Regulator		Radio			Pressure Transducer			
			Quiet	Load	Delta	Output	Output	FWD	REF	SWR	Multiplier	Offset	Date	Time
			(V)	(V)	(V)	Voltage	Current	(W)	(W)					
10056	Cherry Creek @ Russellville	3/31/2021	12.63	12.53	0.10	21.81	491	3.00	0.00	1.00	25.62	-0.03	3/31/2021	2:12 PM
		6/9/2021	13.75	13.65	0.10	14.00	340	4.25	0.25	1.64	25.73	-0.09	6/9/2021	2:34 PM
		8/25/2021	13.71	13.60	0.11	13.94	295	3.00	0.00	1.00	25.82	0.01	8/25/2021	3:05 PM

3.29 EAST/WEST TRAILHEAD P (ID 3050/10045)

The station at East/West Trailhead was activated for the season on March 23rd. All equipment was checked, cleaned, and tested.

The mid-season low impact inspection was performed on July 29th. All tested equipment was in working order.

On October 16th, winter shut-down activities were performed. The transmitter was removed for winter storage.



Photo 3-29. East/West Trailhead (P)

Table 3-30. East/West Trailhead Maintenance Summary

Sta. No.	Station Name	Date	Battery Voltage			Solar Regulator		Radio		
			Quiet	Load	Delta	Output Voltage	Output Current	FWD	REF	SWR
			(V)	(V)	(V)	(V)	(mA)	(W)	(W)	
10045	East/West Trailhead	3/23/2021	12.60	12.42	0.18	21.89	85	3.25	0.25	1.77

3.30 FIRE STATION #47 P (ID 3060/10039)

The ALERT2 station at Fire Station #47 was activated for the season on March 23rd. All equipment was checked, cleaned, and tested.

The mid-season low impact inspection was performed on July 29th. All tested equipment was in working order.

On November 17th, winter shut-down activities were performed. The transmitter was removed for winter storage.



Photo 3-30. Fire Station #47 (P)

Table 3-31. Fire Station #47 Maintenance Summary

Sta. No.	Station Name	Date	Battery Voltage			Solar Regulator		Radio		
			Quiet	Load	Delta	Output Voltage	Output Current	FWD	REF	SWR
			(V)	(V)	(V)	(V)	(mA)	(W)	(W)	
10039	Fire Station #47	3/23/2021	12.74	12.66	0.08	14.63	89	4.50	0.50	2.00

3.31 NEWLIN GULCH AT JORDAN ROAD PS (ID 3070/10055)

The ALERT2 station at Newlin Gulch at Jordan Road was activated for the season on April 2nd. All equipment was checked, cleaned, and tested.

A mid-season inspection was performed on June 17th. All equipment was tested and was in working order.

A second mid-season inspection was performed on August 27th. All equipment was tested and was in working order.

On November 17th, winter shut-down activities were performed, and the PT was put into the winter position.



Photo 3-31. Newlin Gulch at Jordan Road Standpipe (PS)



Photo 3-32. Newlin Gulch at Jordan Road Flasher (PS)

Table 3-32. Newlin Gulch at Jordan Road Maintenance Summary

Sta. No.	Station Name	Date	Battery Voltage			Solar Regulator		Radio		
			Quiet	Load	Delta	Output	Output	FWD	REF	SWR
						Voltage	Current			
			(V)	(V)	(V)	(V)	(mA)	(W)	(W)	
10055	Newlin Gulch at Jordan Road	4/2/2021	12.79	12.71	0.08	13.69	653	4.00	0.25	1.67
		6/17/2021	13.35	13.28	0.07	13.69	561	5.00	0.50	1.93
		8/27/2021	13.35	13.28	0.07	13.70	377	4.50	0.00	1.00

3.32 TALLMAN GULCH AT TALLMAN PARK PS (ID 3080/10067)

The ALERT2 station at Tallman Gulch was activated for the season on March 19th. All equipment was checked, cleaned, and tested. On April 28th the station was visited due to the tipping bucket not reporting. The military connector was loose and just needed to be tightened.

The mid-season inspection was conducted on June 17th. All equipment was checked, cleaned, and tested. Calibration above 8 feet is not linear.

A second mid-season inspection was conducted on August 27th. All equipment was checked, cleaned, and tested.

On November 3rd, winter shut-down activities were performed. The transmitter was removed, and the PT was pulled up into its winter position.



Photo 3-33. Tallman Gulch at Tallman Park (PS)

Table 3-33. Tallman Gulch at Tallman Park Maintenance Summary

Sta. No.	Station Name	Date	Battery Voltage			Solar Regulator		Radio			Pressure Transducer			
			Quiet	Load	Delta	Output	Output	FWD	REF	SWR	Multiplier	Offset	Date	Time
			(V)	(V)	(V)	Voltage	Current							
10067	Tallman Park	3/19/2021	12.71	12.61	0.10	14.24	136	6.00	0.10	1.30	25.79	-0.02	3/19/21	1:03 PM
		6/17/2021	13.07	12.95	0.12	13.94	13	5.00	0.00	1.00	26.32	0.08	6/17/21	10:00 AM
		8/27/2021	12.82	12.73	0.09	14.13	31	4.00	0.00	1.00	26.09	0.05	8/27/21	9:40 AM

3.33 BIG DRY CREEK AT HERITAGE REGIONAL PARK PS (ID 3090/10054)

The ALERT2 station at Big Dry Creek at Heritage Park was activated for the season on April 5th. All equipment was checked, cleaned, and tested. All equipment was working correctly.

The mid-season inspection was conducted on June 17th. All equipment was checked, cleaned, and tested.

A second mid-season inspection was conducted on August 27th. All equipment was cleaned, checked, and tested.

A few weeks after the second inspection the GPS has been losing lock every few days. The station will be tested at the shop over winter.

On November 16th, winter shut-down activities were performed. The PT was pulled up into its winter position.



Photo 3-34. Big Dry Creek at Heritage Regional Park (PS)

Table 3-34. Big Dry Creek at Heritage Regional Park Maintenance Summary

Sta. No.	Station Name	Date	Battery Voltage			Solar Regulator		Radio			Pressure Transducer			
			Quiet	Load	Delta	Output	Output	FWD	REF	SWR	Multiplier	Offset	Date	Time
			(V)	(V)	(V)	Voltage (V)	Current (mA)	(W)	(W)					
10054	Heritage Regional Park	4/5/2021	12.79	12.65	0.14	13.97	75	5.00	0.25	1.58	23.13	-0.02	4/5/2021	4:48 PM
		6/17/2021	13.27	13.12	0.15	14.41	204	5.00	0.25	1.58	23.44	-0.04	6/17/2021	2:22 PM
		8/27/2021	13.27	13.12	0.15	13.70	258	5.00	0.25	1.58	23.97	0.05	8/27/2021	1:50 PM

3.34 UPPER SELLERS GULCH P (ID 10014)

The ALERT2 station at Upper Sellers Gulch was activated for the season on March 25th. All equipment was checked, cleaned, and tested. All equipment was working correctly.

On April 5th the station was revisited due to several missing reports. The initial culprit was the ALERT2 encoder board. We swapped the encoder board with 10015 Sellers Gulch at Haystack to see if it was the issue. After a week, the station was still missing reports and 10015 was not. We used the antenna analyzer on the station and found the connector at the antenna was not completely connected. After tightening, the transmission issue was solved.

On May 17th the hourly transmissions were changed to 5-minute transmissions to test West Creek Repeater. The station was returned to 1-hour transmissions on May 19th.

The mid-season low impact inspection was performed on July 29th. All tested equipment was in working order.

On November 3rd, winter shut-down activities were performed. The transmitter was removed for winter storage.



Photo 3-35. Upper Sellers Gulch (P)

Table 3-35. Upper Sellers Gulch Maintenance Summary

Sta. No.	Station Name	Date	Battery Voltage			Solar Regulator		Radio		
						Output	Output			
			Quiet	Load	Delta	Voltage	Current	FWD	REF	SWR
			(V)	(V)	(V)	(V)	(mA)	(W)	(W)	
10014	Upper Sellers Gulch	3/25/2021	13.87	13.77	0.10	21.20	148	5.00	0.25	1.58

3.35 SELLERS GULCH AT HAYSTACK ROAD PS (ID 10015)

The ALERT2 station at Sellers Gulch at Haystack Road was activated for the season on April 1st. All equipment was checked, cleaned, and tested. All equipment was working correctly.

On April 29th the battery was replaced at the station.

Mid-season inspection was conducted on June 9th. All equipment was checked, cleaned, and tested.

A second mid-season inspection was conducted on August 26th. All equipment was checked, cleaned, and tested.

On November 3rd, winter shut-down activities were performed. The transmitter was removed for winter storage.



Photo 3-36. Sellers Gulch at Haystack Road (PS)

Table 3-36. Sellers Gulch at Haystack Maintenance Summary

Sta. No.	Station Name	Date	Battery Voltage			Solar Regulator		Radio			Pressure Transducer			
			Quiet	Load	Delta	Output Voltage	Output Current	FWD	REF	SWR	Multiplier	Offset	Date	Time
			(V)	(V)	(V)	(V)	(mA)	(W)	(W)					
10015	Sellers Gulch at Haystack	4/1/2021	12.41	12.26	0.15	14.35	357	4.00	0.25	1.67	25.55	-0.27	4/1/2021	3:10 PM
		6/9/2021	13.64	13.57	0.07	14.09	80	4.50	0.25	1.61	25.69	-0.32	6/9/2021	3:59 PM
		8/26/2021	13.76	13.67	0.09	14.14	269	4.00	0.10	1.38	25.95	-0.23	8/26/2021	11:35 AM

3.36 PLUM CREEK AT SEDELIA PS (ID 10029)

The station at Plum Creek at Sedalia is a USGS station where WET pulls stage and discharge measurements from the USGS radar sensor through an SDI-12 communication protocol. The data is then transmitted over ALERT2.

Plum Creek at Sedalia was visited on March 24th for early season maintenance. All equipment was cleaned, checked, and tested.

The mid-season inspection was conducted on June 16th. All equipment was checked, cleaned, and tested.

A second mid-season inspection was conducted on August 16th. All equipment was checked, cleaned, and tested.

On November 17th the tipping bucket was covered. The station is left running over the winter to collect data from the USGS radar.



Photo 3-37. Plum Creek at Sedalia (PS)

Table 3-37. Plum Creek at Sedalia Maintenance Summary

Sta. No.	Station Name	Date	Battery Voltage			Solar Regulator		Radio		
			Quiet	Load	Delta	Output Voltage	Output Current	FWD	REF	SWR
			(V)	(V)	(V)	(V)	(mA)	(W)	(W)	
10029	Plum Creek @ Sedalia	3/24/2021	12.75	12.64	0.11	21.17	884	4.75	0.25	1.60
		6/16/2021	13.87	13.76	0.11	20.24	105	4.25	0.00	1.00
		8/16/2021	13.87	13.76	0.11	20.24	105	4.25	0.00	1.00

3.37 EAST PLUM CREEK AT COLUMBINE OPEN SPACE (PS) (ID 10044)

The ALERT2 station at East Plum Creek at Columbine Open Space was activated for the season on March 26th. All equipment was tested, cleaned, and calibrated. All equipment was working correctly. The radar was compared to the wire-weight gage and matched the reading on the transmitter.

On May 12th the station was visited due to the radar reporting false data. A new script file was uploaded to the 50386 to prevent false data readings from being transmitted to the base.

The mid-season inspection was performed on June 8th. All equipment was clean, checked, and tested. The radar and wire-weight gage readings matched.

A second mid-season inspection was conducted on August 26th. All equipment was checked, cleaned, and tested. Wire-weight gage and radar readings matched.

On November 16th, winter shut-down activities were performed. The transmitter was removed for winter storage.



Photo 3-38. East Plum Creek at Columbine Open Space (PS)

Table 3-38. East Plum Creek at Columbine Open Space Maintenance Summary

Sta. No.	Station Name	Date	Battery Voltage			Solar Regulator		Radio		
			Quiet (V)	Load (V)	Delta (V)	Output Voltage (V)	Output Current (mA)	FWD (W)	REF (W)	SWR
10044	E. Plum Creek @ Columbine	3/26/2021	12.55	12.40	0.15	21.80	282	4.00	0.10	1.38
		6/8/2021	13.13	13.03	0.10	14.90	299	5.00	0.25	1.58
		8/26/2021	13.13	13.04	0.09	13.96	476	4.50	0.00	1.00

3.38 BALDWIN GULCH DAM (PS) (ID 10077)

The ALERT2 station at Baldwin Gulch Dam was activated for the season on April 5th. All equipment was tested, cleaned, and calibrated. All equipment was working correctly.

The mid-season inspection was performed on June 17th. All equipment was clean, checked, and tested.

A second mid-season inspection was conducted on September 7th. The pressure transducer and riser pipe were removed from the station so that it is not damaged during construction. They will be reinstalled when construction is completed. All equipment was checked, cleaned, and tested.

On November 3rd, winter shut-down activities were performed.



Photo 3-39. Baldwin Gulch Dam (PS)

Table 3-39. Baldwin Gulch Dam Maintenance Summary

Sta. No.	Station Name	Date	Battery Voltage			Solar Regulator		Radio		
			Quiet	Load	Delta	Output	Output	FWD	REF	SWR
						Voltage	Current			
			(V)	(V)	(V)	(V)	(mA)	(W)	(W)	
10077	Baldwin Gulch Dam	4/5/2021	13.45	13.36	0.09	20.40	361	5.00	0.28	1.62
		6/17/2021	13.19	13.10	0.09	20.41	461	5.00	0.28	1.62
		9/7/2021	13.26	13.16	0.10	14.14	279	4.50	0.00	1.00

3.39 WCC-7 DAM PS (10080)

The ALERT2 station at WCC-7 Dam was activated for the season on April 5th. All equipment was tested, cleaned, and calibrated. All equipment was working correctly.

The mid-season inspection was performed on June 9th. All equipment was clean, checked, and tested.

A second mid-season inspection was conducted on August 25th. All equipment was checked, cleaned, and tested.

On November 17th, winter shut-down activities were performed.



Photo 3-40. WCC-7 Dam (PS)

Table 3-40. WCC-7 Dam Maintenance Summary

Sta. No.	Station Name	Date	Battery Voltage			Solar Regulator		Radio		
			Quiet	Load	Delta	Output	Output	FWD	REF	SWR
						Voltage	Current			
			(V)	(V)	(V)	(V)	(mA)	(W)	(W)	
10080	WCC-7 Dam	4/5/2021	13.91	13.82	0.09	21.37	118	4.25	0.00	1.00
		6/9/2021	13.65	13.54	0.11	20.34	260	5.00	0.00	1.00
		8/25/2021	13.35	13.26	0.09	20.75	643	4.50	0.00	1.00

3.40 FP-P1 DAM PS (10081)

The ALERT2 station at FP-P1 Dam was activated for the season on April 5th. All equipment was tested, cleaned, and calibrated. All equipment was working correctly.

The mid-season inspection was performed on June 17th. All equipment was clean, checked, and tested.

A second mid-season inspection was conducted on August 27th. All equipment was checked, cleaned, and tested.

On November 3rd, winter shut-down activities were performed.



Photo 3-41. FP-P1 Dam (PS)

Table 3-41. FP-P1 Dam Maintenance Summary

Sta. No.	Station Name	Date	Battery Voltage			Solar Regulator		Radio		
			Quiet	Load	Delta	Output Voltage	Output Current	FWD	REF	SWR
			(V)	(V)	(V)	(V)	(mA)	(W)	(W)	
10081	FP-P1 Dam	4/5/2021	13.37	13.29	0.08	20.98	322	4.25	0.00	1.00
		6/17/2021	13.17	13.08	0.09	20.54	526	5.00	0.00	1.00
		8/27/2021	13.33	13.22	0.11	20.93	392	4.00	0.10	1.38

3.41 FP-S1 DAM PS (10082)

The ALERT2 station at FP-S1 Dam was activated for the season on April 5th. All equipment was tested, cleaned, and calibrated. The pressure transducer was calibrated with an offset of -0.75ft. The AL200 did not have GPS and it was determined the AL200 was broken and needed to be replaced.

On May 14th a new AL200 unit was installed at the station. The unit received lock and was transmitting on its offset properly.

The mid-season inspection was performed on June 16th. All equipment was clean, checked, and tested. The PT had a new offset of -0.82 and the calibration was not linear. The offset is larger at low stages and smaller at large stage values.

A second mid-season inspection was conducted on August 26th. All equipment was checked, cleaned, and tested. The PT was calibrated due to readings being off during calibration. The calibration was not linear and an offset of -0.65ft was programmed. The PT should be replaced and sent in for calibration.

On November 3rd, winter shut-down activities were performed.



Photo 3-42. FP-S1 Dam (PS)

Table 3-42. FP-S1 Dam Maintenance Summary

Sta. No.	Station Name	Date	Battery Voltage			Solar Regulator		Radio		
			Quiet (V)	Load (V)	Delta (V)	Output Voltage (V)	Output Current (mA)	FWD (W)	REF (W)	SWR
10082	FP-S1 Dam	4/5/2021	13.46	13.38	0.08	21.39	194	4.25	0.00	1.00
		6/16/2021	13.18	13.10	0.08	20.55	470	5.00	0.00	1.00
		8/26/2021	13.24	13.15	0.09	20.06	142	4.75	0.10	1.34

4. SUMMARY OF NON-PREVENTIVE SERVICE CALLS

Overall, the network functioned without major problems. As usual, there were a few minor issues including bad batteries, clogged intake lines, bad pressure transducers, and stations not reporting. Below is a list of the stations with non-preventative service calls:

- Tomah Rd (ID 10065)
 - Replaced GPS cable from top of transmitter to GPS polyphaser
 - Reprogrammed RF programming
- Sellers Gulch at Haystack (ID 10015)
 - Swapped Encoder board with Upper Sellers Gulch
 - Replaced bad battery
- Upper Sellers Gulch (ID 10014)
 - Swapped Encoder board with Sellers Gulch @ Haystack
 - Replaced N to UHF connector on antenna cable
- Tallman Gulch @ Tallman Park (ID 10067)
 - Tightened tipping bucket military connector
- FP-S1 Dam (ID 10082)
 - Replaced AL200 due to it not receiving a GPS lock
- West Creek Repeater (ID 6001)
 - Replaced UPC with a battery and battery charger. Plugged repeater into the wall.
- West Creek Weather (ID 10037)
 - Station experiencing very large latency issues. Not receiving transmissions until 4-12 hours in the future. Replaced encoder board
 - Sent station to Hydrolynx for repairs. Installed new radio. Upon reinstallation RH and Temp sensors not reading properly and not receiving GPS lock. Removed for winter
- Plum Creek at Columbine Open Space (ID 10044)
 - Changed radar script file to prevent station from transmitting false data.
- West Cherry Creek Weather (ID 2970)
 - PT was causing other sensors to report bad data due to drawing too much power. Replaced PT with a spare.

WET has noticed that there seems to be issues with the legacy ALERT stations being received by the repeater occasionally. We believe that there is some sort of interference on the legacy ALERT frequency that prevents the stations from being received by the repeater or base station. When we try to listen for interference on that frequency, we cannot hear anything so it must be very intermittent. We have found that upgrading stations to ALERT2 has always fixed this issue, so we continue to recommend that more stations be upgraded to ALERT2 every year.

5. SPARE EQUIPMENT

5.1 INVENTORY ON HAND

WET has accounted for the following spare supplies located at the Fort Collins office. A more detailed list is included in Appendix B

- 500 mA Wall Charger
- 5096 Board
- ALERT 2 Encoder Board
- Antenna Cable (x6)
- Antenna Top Section (x5)
- Battery
- Directional Antenna
- GPS Antenna
- Lateral Antenna (x3)
- MasterLock (x3)
- Miscellaneous Wind Sensor parts
- Radio amplifier
- Pressure Transducer (X2)
- Programmed Maxon VHF Radio (x6)
- Repeater
- Ritron Radio
- Signal Conditioning Board (x2)
- Signal Conditioning Box (x5)
- Solar Panel (x5)
- Solar Panel Mount for Standpipe
- Solar Regulator (x2)
- Tipping Bucket (x3)
- Tipping Bucket Metal Screen Set (x4)
- Hydrolynx 5096 Transmitter (x2)
- High Sierra 3306 Transmitter (x2)
- High Sierra 3206 Transmitter (x3)
- VHF Polyphaser (x4)
- ALERT2 Upgrade Kit (x2)

5.2 RECOMMENDED ADDITIONAL INVENTORY

Prior to the 2022 maintenance season, WET recommends the purchase of the following spare equipment:

- (2) MaxRad antenna base mounts - \$40 ea.
- (4) Solar panel mount - \$50 ea.
- (2) Maxon Radios - \$300 ea.
- (3) Solar Charge Regulators- \$45 ea.
- (1) Desiccant- \$125
- (1) Radio Amplifier- \$200
- (1) Keller pressure transducer – \$745
- (1) Campbell CS451 pressure transducer – \$875

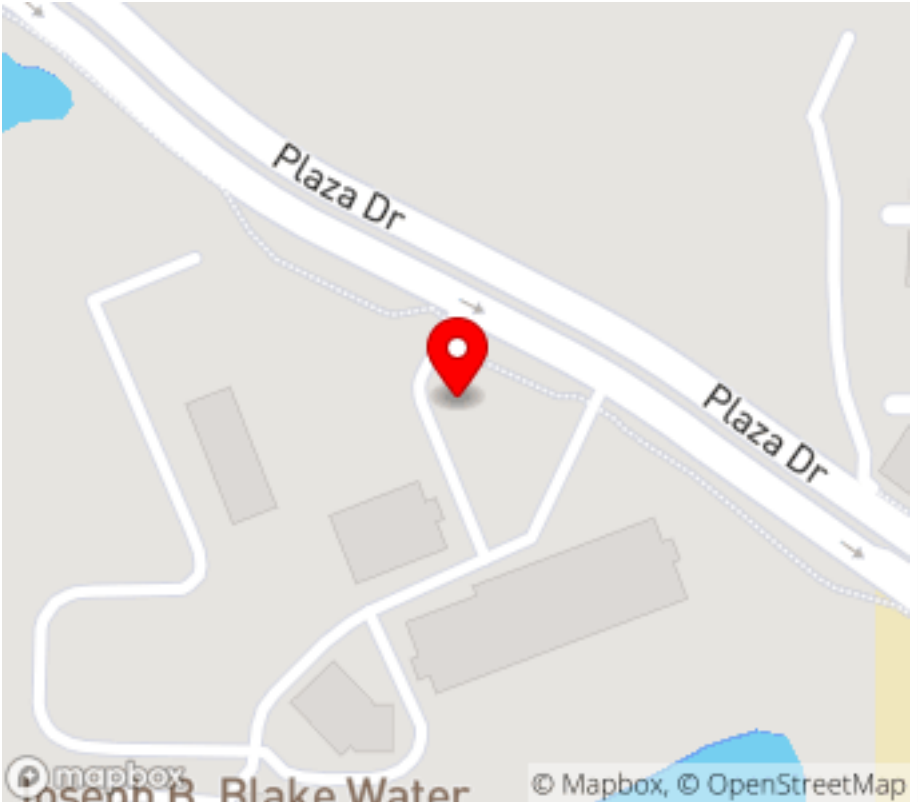
6. RECOMMENDATIONS

The pressure transducer at Tallman Gulch is slowly getting worse and should be replaced. The calibration is not linear and is only accurate for under 8 feet. The pressure transducer at FP-S1 Dam is also having issues. Each visit the PT has a different offset that is constantly changing. There is no consistency with the calibration. The Campbell membrane should be replaced and sent back to Campbell to see if the problem can be diagnosed. WET also recommends upgrading more legacy stations to ALERT2. There seems to be some interference on the legacy frequency in Douglas County. We have been experiencing a decent number of legacy stations that stop reporting and it seems the only way to fix the issue is upgrading to ALERT2 with the separate frequency.

7. APPENDIX A. SITE SPECIFIC MAINTENANCE/REPAIR RECORDS

Station Maintenance Form

Station Maintenance Form

Location	Highlands Ranch WTP
Station_ID	2710
Technician(s)	ZJN
Date	04/01/2021
Time Arrive	08:43 AM (-6 GMT)
GPS Location	
	Lat: 39.5610725 Long: -105.0190272
Agency	Douglas County

Station Type

What type of station?	Weather
-----------------------	---------

Stream Station Maintenance

No calibration form necessary	Check to see if PT is working properly.
-------------------------------	---

Weather Station Maintenance

Weather Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Station Maintenance Form

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Point ID	2710
Tips During Calibration	12
Volume Added or Removed (mL)	10.00
Error (%)	-0.79
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	13.85
Charging Current (mA)	67.00
Battery Voltage Quiet (V)	13.40
Battery Voltage Transmitted (V)	13.28

Sensor Verification

Temperature (°C)	6.10
Relative Humidity (%)	32.50
Wind Speed (mph)	5.00
Temperature (°C)	7.50
Relative Humidity (%)	30.10
Wind Speed (mph)	4.10

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	3.50
Watts Reflected	0.00
Standing Wave Ratio	1.0000
Does the station have a stage sensor?	No

Finishing Comments

Final Comments	Everything working well. Received test transmission.
Depart Time	09:28 AM (-6 GMT)


Station Maintenance Form

Photos



Station Maintenance Form

Station Maintenance Form

Location	Highlands Ranch WTP
Station_ID	2710
Technician(s)	ZJN
Date	06/09/2021
Time Arrive	07:30 AM (-6 GMT)
GPS Location	
	Lat: 39.5610527 Long: -105.0189171
Agency	Douglas County

Station Type

What type of station?	Weather
-----------------------	---------

Stream Station Maintenance

No calibration form necessary	Check to see if PT is working properly.
-------------------------------	---

Weather Station Maintenance

Weather Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Station Maintenance Form

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Point ID	2710
Tips During Calibration	13
Volume Added or Removed (mL)	-5.00
Error (%)	0.80
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	13.85
Charging Current (mA)	18.00
Battery Voltage Quiet (V)	12.65
Battery Voltage Transmitted (V)	12.56

Sensor Verification

Temperature (°C)	17.80
Relative Humidity (%)	33.40
Wind Speed (mph)	8.00
Temperature (°C)	17.60
Relative Humidity (%)	35.10
Wind Speed (mph)	6.00

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	4.00
Watts Reflected	0.00
Standing Wave Ratio	1.0000
Does the station have a stage sensor?	No

Finishing Comments

Final Comments	Everything working well. Received test transmission. Calibrated tipping bucket.
Depart Time	08:13 AM (-6 GMT)


Station Maintenance Form

Photos



Station Maintenance Form

Station Maintenance Form

Location	Highlands Ranch WTP
Station_ID	2710
Technician(s)	ZJN
Date	08/25/2021
Time Arrive	07:18 AM (-6 GMT)
GPS Location	
	Lat: 39.5612761 Long: -105.0198329
Agency	Douglas County

Station Type

What type of station?	Weather
-----------------------	---------

Weather Station Maintenance

Weather Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Station Maintenance Form

Point ID	2710
Tips During Calibration	12
Volume Added or Removed (mL)	3.00
Error (%)	-0.05
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	13.85
Charging Current (mA)	33.00
Battery Voltage Quiet (V)	12.68
Battery Voltage Transmitted (V)	12.58

Sensor Verification

Temperature (°C)	18.90
Relative Humidity (%)	60.00
Wind Speed (mph)	0.00
Temperature (°C)	18.20
Relative Humidity (%)	61.60
Wind Speed (mph)	0.00

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	4.00
Watts Reflected	0.00
Standing Wave Ratio	1.0000

Finishing Comments

Final Comments	Everything working well. Did not receive test but is a problem at base/repeater
Depart Time	07:53 AM (-6 GMT)

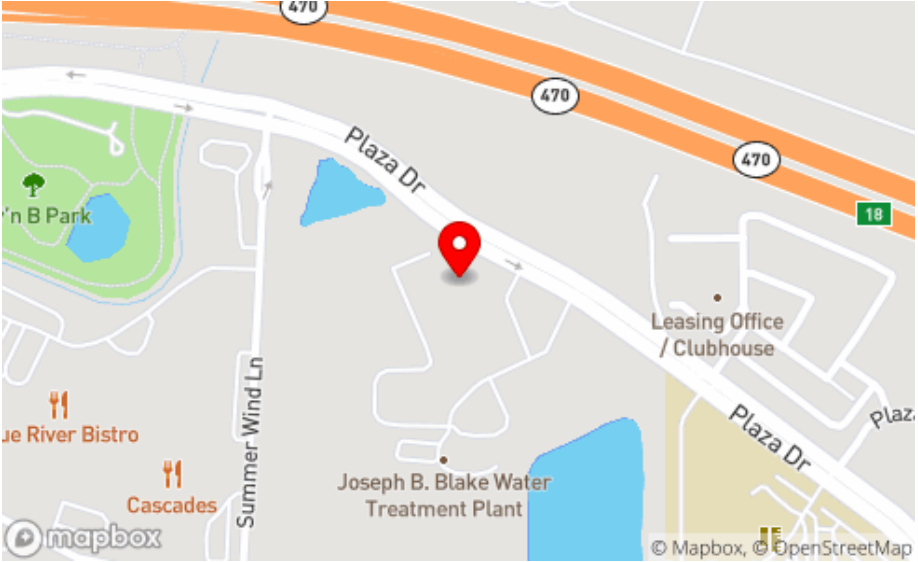
Station Maintenance Form

Photos



Station Maintenance Form

Station Maintenance Form

Location	Highlands Ranch WTP
Station_ID	2710
Technician(s)	ZJN
Date	11/16/2021
Time Arrive	07:32 AM (-7 GMT)
GPS Location	
	Lat: 39.5612778 Long: -105.0197319
Agency	Douglas County

Station Type

What type of station?	Weather
-----------------------	---------

Weather Station Maintenance

Weather Maintenance

Items Cleaned

Clean Checks	Solar_panel
--------------	-------------

Rain Gage Calibration

Error (%)	0.27
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Power System

Regulator Output Voltage (V)	11.57
Charging Current (mA)	10.00
Battery Voltage Quiet (V)	12.73
Battery Voltage Transmitted (V)	12.62

Sensor Verification

Station Maintenance Form

Temperature (°C)	15.00
Relative Humidity (%)	23.50
Wind Speed (mph)	0.00
Temperature (°C)	13.80
Relative Humidity (%)	29.60
Wind Speed (mph)	0.00


Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio


Watts Forward	3.75
Watts Reflected	0.00
Standing Wave Ratio	1.0000

Finishing Comments

Final Comments	Covered tipping bucket for winter. Everything working well. Received test transmission. Very cloudy. Temperature and relative humidity sensor may be to be calibrated
Depart Time	08:05 AM (-7 GMT)
Photos	

Station Maintenance Form

Station Maintenance Form

Location	Salisbury Park
Station_ID	2730
Technician(s)	ZJN
Date	03/26/2021
Time Arrive	11:17 AM (-6 GMT)
GPS Location	
	Lat: 39.4977145 Long: -104.7731224
Agency	Douglas County

Station Type

What type of station?	Weather
-----------------------	---------

Stream Station Maintenance

No calibration form necessary	Check to see if PT is working properly.
-------------------------------	---

Weather Station Maintenance

Weather Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Station Maintenance Form

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Point ID	2730
Tips During Calibration	12
Volume Added or Removed (mL)	14.00
Error (%)	-1.21
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	21.73
Charging Current (mA)	91.00
Battery Voltage Quiet (V)	13.94
Battery Voltage Transmitted (V)	13.80

Sensor Verification

Temperature (°C)	9.40
Relative Humidity (%)	50.60
Wind Speed (mph)	2.10
Temperature (°C)	9.50
Relative Humidity (%)	45.80
Wind Speed (mph)	2.80

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	4.00
Watts Reflected	0.00
Standing Wave Ratio	1.0000
Does the station have a stage sensor?	No

Finishing Comments

Final Comments	Everything working well. Received test transmission.
Depart Time	11:17 AM (-6 GMT)


Station Maintenance Form

Photos



Station Maintenance Form

Station Maintenance Form

Location	Salisbury Park
Station_ID	2730
Technician(s)	ZJN
Date	06/16/2021
Time Arrive	01:44 PM (-6 GMT)
GPS Location	
	Lat: 39.4977788 Long: -104.7732198
Agency	Douglas County

Station Type

What type of station?	Weather
-----------------------	---------

Weather Station Maintenance

Weather Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Station Maintenance Form

Point ID	2730
Tips During Calibration	13
Volume Added or Removed (mL)	0.00
Error (%)	0.27
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	13.87
Charging Current (mA)	94.00
Battery Voltage Quiet (V)	13.44
Battery Voltage Transmitted (V)	13.34

Sensor Verification

Temperature (°C)	36.60
Relative Humidity (%)	13.70
Wind Speed (mph)	11.00
Temperature (°C)	35.50
Relative Humidity (%)	14.00
Wind Speed (mph)	12.40

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	5.00
Watts Reflected	0.00
Standing Wave Ratio	1.0000

Finishing Comments

Final Comments	Everything working well. Received test transmission.
Depart Time	02:12 PM (-6 GMT)


Station Maintenance Form

Photos



Station Maintenance Form

Station Maintenance Form

Location	Salisbury Park
Station_ID	2730
Technician(s)	ZJN
Date	08/27/2021
Time Arrive	08:07 AM (-6 GMT)
GPS Location	
	Lat: 39.4977316 Long: -104.7731819
Agency	Douglas County

Station Type

What type of station?	Weather
-----------------------	---------

Weather Station Maintenance

Weather Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Station Maintenance Form

Point ID	2730
Tips During Calibration	13
Volume Added or Removed (mL)	-1.00
Error (%)	0.37
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	18.69
Charging Current (mA)	97.00
Battery Voltage Quiet (V)	13.22
Battery Voltage Transmitted (V)	13.10

Sensor Verification

Temperature (°C)	21.60
Relative Humidity (%)	54.90
Wind Speed (mph)	4.00
Temperature (°C)	20.50
Relative Humidity (%)	47.50
Wind Speed (mph)	5.10

Transmitter

Transmitter Checks	Desiccant, Program, Bucket, Time
--------------------	----------------------------------

Radio

Watts Forward	4.00
Watts Reflected	0.00
Standing Wave Ratio	1.0000

Finishing Comments

Final Comments	Everything working well. Received test transmission.
Depart Time	08:38 AM (-6 GMT)

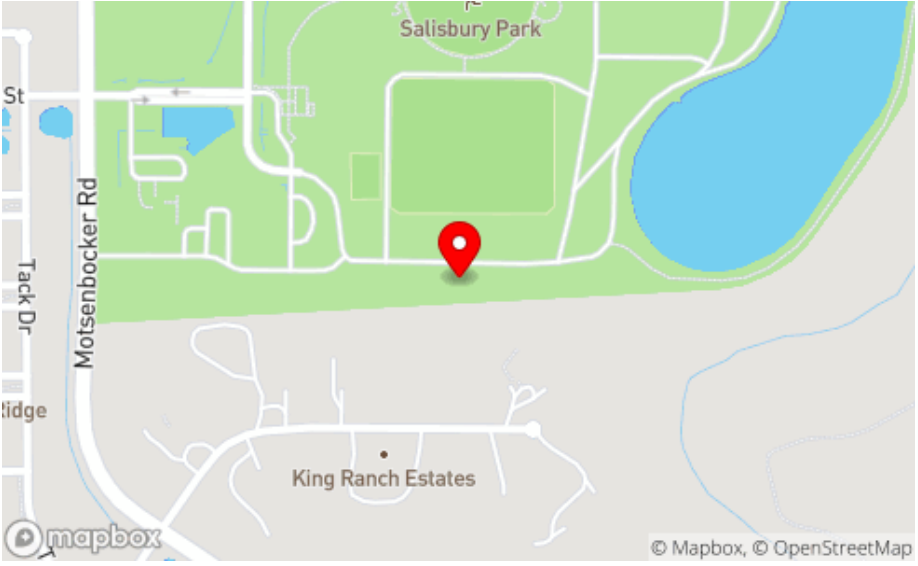
Station Maintenance Form

Photos



Station Maintenance Form

Station Maintenance Form

Location	Salisbury Park
Station_ID	2730
Technician(s)	ZJN
Date	11/17/2021
Time Arrive	09:04 AM (-7 GMT)
GPS Location	
	Lat: 39.4977649 Long: -104.7730621
Agency	Douglas County

Station Type

What type of station?	Weather
-----------------------	---------

Weather Station Maintenance

Weather Maintenance

Items Cleaned

Clean Checks	Solar_panel
--------------	-------------

Rain Gage Calibration

Error (%)	0.27
-----------	------

Power System

Regulator Output Voltage (V)	14.93
Charging Current (mA)	28.00
Battery Voltage Quiet (V)	13.55
Battery Voltage Transmitted (V)	13.41

Sensor Verification

Station Maintenance Form

Temperature (°C)	-1.70
Relative Humidity (%)	72.30
Wind Speed (mph)	1.20
Temperature (°C)	-1.00
Relative Humidity (%)	66.40
Wind Speed (mph)	1.00


Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio


Watts Forward	4.50
Watts Reflected	0.10
Standing Wave Ratio	1.3504

Finishing Comments

Final Comments	Covered tipping bucket for winter. Everything working well. Received test transmission.
Depart Time	09:25 AM (-7 GMT)
Photos	

Station Maintenance Form

Station Maintenance Form

Location	Castle Rock Wx
Station_ID	2750
Technician(s)	ZJN
Date	04/02/2021
Time Arrive	09:54 AM (-6 GMT)
GPS Location	
	Lat: 39.3767556 Long: -104.8485214
Agency	Douglas County

Station Type

What type of station?	Weather
-----------------------	---------

Stream Station Maintenance

No calibration form necessary	Check to see if PT is working properly.
-------------------------------	---

Weather Station Maintenance

Weather Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Station Maintenance Form

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Point ID	2750
Tips During Calibration	12
Volume Added or Removed (mL)	17.00
Error (%)	-1.53
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	13.93
Charging Current (mA)	138.00
Battery Voltage Quiet (V)	13.59
Battery Voltage Transmitted (V)	13.49

Sensor Verification

Temperature (°C)	17.20
Relative Humidity (%)	14.00
Wind Speed (mph)	2.00
Temperature (°C)	16.00
Relative Humidity (%)	15.20
Wind Speed (mph)	1.70

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	4.00
Watts Reflected	0.00
Standing Wave Ratio	1.0000
Does the station have a stage sensor?	No

Finishing Comments

Final Comments	Everything working well. Received test transmission. Construction may not allow access for a while
Depart Time	10:27 AM (-6 GMT)


Station Maintenance Form

Photos



Station Maintenance Form

Station Maintenance Form

Location	Castle Rock Wx
Station_ID	2750
Technician(s)	ZJN
Date	06/16/2021
Time Arrive	08:45 AM (-6 GMT)
GPS Location	
	Lat: 39.3766947 Long: -104.8485527
Agency	Douglas County

Station Type

What type of station?	Weather
-----------------------	---------

Weather Station Maintenance

Weather Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Station Maintenance Form

Point ID	2750
Tips During Calibration	13
Volume Added or Removed (mL)	6.00
Error (%)	-0.36
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	13.80
Charging Current (mA)	69.00
Battery Voltage Quiet (V)	13.54
Battery Voltage Transmitted (V)	13.44

Sensor Verification

Temperature (°C)	28.30
Relative Humidity (%)	36.50
Wind Speed (mph)	0.00
Temperature (°C)	26.80
Relative Humidity (%)	38.80
Wind Speed (mph)	0.00

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	4.25
Watts Reflected	0.00
Standing Wave Ratio	1.0000

Finishing Comments

Final Comments	Everything working well. Received test transmission.
Depart Time	09:20 AM (-6 GMT)


Station Maintenance Form

Photos



Station Maintenance Form

Station Maintenance Form

Location	Castle Rock Wx
Station_ID	2750
Technician(s)	ZJN
Date	08/26/2021
Time Arrive	12:30 PM (-6 GMT)
GPS Location	
	Lat: 39.3766928 Long: -104.848538
Agency	Douglas County

Station Type

What type of station?	Weather
-----------------------	---------

Weather Station Maintenance

Weather Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Station Maintenance Form

Point ID	2750
Tips During Calibration	13
Volume Added or Removed (mL)	-6.00
Error (%)	0.90
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	13.89
Charging Current (mA)	69.00
Battery Voltage Quiet (V)	13.63
Battery Voltage Transmitted (V)	13.53

Sensor Verification

Temperature (°C)	23.90
Relative Humidity (%)	48.60
Wind Speed (mph)	11.00
Temperature (°C)	23.90
Relative Humidity (%)	45.00
Wind Speed (mph)	9.80

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	4.50
Watts Reflected	0.10
Standing Wave Ratio	1.3504

Finishing Comments

Final Comments	Everything working well. Received test transmission.
Depart Time	01:15 PM (-6 GMT)

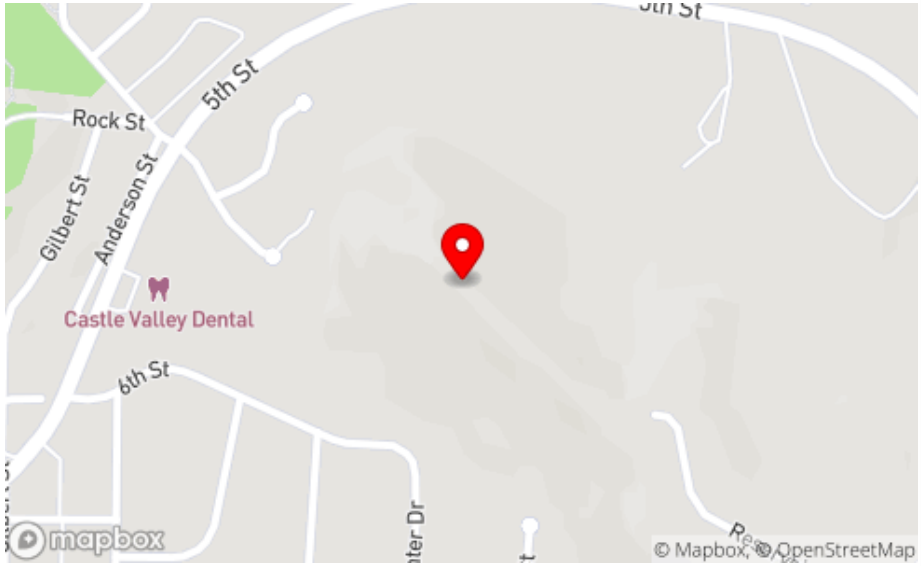
Station Maintenance Form

Photos



Station Maintenance Form

Station Maintenance Form

Location	Castle Rock Wx
Station_ID	2750
Technician(s)	ZJN
Date	11/16/2021
Time Arrive	02:00 PM (-7 GMT)
GPS Location	
	Lat: 39.3767645 Long: -104.8485693
Agency	Douglas County

Station Type

What type of station?	Weather
-----------------------	---------

Weather Station Maintenance

Weather Maintenance

Items Cleaned

Clean Checks	Solar_panel
--------------	-------------

Rain Sensor

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Error (%)	0.27
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Power System

Regulator Output Voltage (V)	13.69
Charging Current (mA)	99.00

Station Maintenance Form

Battery Voltage Quiet (V)	13.69
Battery Voltage Transmitted (V)	13.61

Sensor Verification

Temperature (°C)	19.40
Relative Humidity (%)	11.40
Wind Speed (mph)	7.00
Temperature (°C)	20.50
Relative Humidity (%)	13.20
Barometric Pressure (mBar)	791.00
Wind Speed (mph)	6.50

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio


Watts Forward	4.50
Watts Reflected	0.00
Standing Wave Ratio	1.0000

Finishing Comments

Final Comments	Covered tipping bucket for winter. Everything working well. Received test transmission.
Depart Time	02:18 PM (-7 GMT)
Photos	

Station Maintenance Form

Station Maintenance Form

Location	West Cherry Creek Wx
Station_ID	2790
Technician(s)	ZJN,JDP
Date	03/31/2021
Time Arrive	11:46 AM (-6 GMT)
GPS Location	
	Lat: 39.2621854 Long: -104.7093469
Agency	Douglas County

Station Type

What type of station?	Weather
-----------------------	---------

Stream Station Maintenance

No calibration form necessary	Check to see if PT is working properly.
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Weather Station Maintenance

Weather Maintenance

Items Cleaned

Clean Checks	Solar_panel
--------------	-------------

Rain Sensor

Station Maintenance Form

Does the station have a rain sensor?	No
--------------------------------------	----

Rain Gage Calibration

Error (%)	0.27
-----------	------

Power System

Regulator Output Voltage (V)	21.78
Charging Current (mA)	752.00
Battery Voltage Quiet (V)	13.52
Battery Voltage Transmitted (V)	13.36

Sensor Verification

Temperature (°C)	6.10
Relative Humidity (%)	21.50
Wind Speed (mph)	1.00
Temperature (°C)	8.10
Relative Humidity (%)	22.20
Barometric Pressure (mBar)	803.00
Wind Speed (mph)	1.60

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	4.25
Watts Reflected	0.00
Standing Wave Ratio	1.0000
Does the station have a stage sensor?	Yes
Is the PT an SDI-12?	No

5096 ALERT1 PT Calibration

5096 Alert PT Calibration

How many different values are being tested?	7
Stage 1	12.02
Calibrated Reading 1	132.00
Stage 2	9.97
Calibrated Reading 2	110.00
Stage 3	8.05

Station Maintenance Form


Calibrated Reading 3	89.00
Stage 4	6.13
Calibrated Reading 4	68.00
Stage 5	4.06
Calibrated Reading 5	45.00
Stage 6	1.95
Calibrated Reading 6	22.00
Stage 7	0.00
Calibrated Reading 7	0.00
Slope	0.09105
Offset	-0.03561
Effective Date	03/31/2021
Effective Time	11:55 AM (-6 GMT)
NOTICE	If offset is greater than 0.5ft adjust ZERO screw in signal conditioning box.

Finishing Comments

Final Comments	Everything working well. Received test transmission.
Depart Time	12:07 PM (-6 GMT)
Photos	

Station Maintenance Form

Station Maintenance Form

Location	West Cherry Creek
Station_ID	2790
Technician(s)	ZJN
Date	06/09/2021
Time Arrive	12:20 PM (-6 GMT)
GPS Location	
	Lat: 39.2621659 Long: -104.7092924
Agency	Douglas County

Station Type

What type of station?	Weather
-----------------------	---------

Stream Station Maintenance

No calibration form necessary	Check to see if PT is working properly.
-------------------------------	---

Weather Station Maintenance

Weather Maintenance

Rain Sensor

Does the station have a rain sensor?	No
--------------------------------------	----

Rain Gage Calibration

Station Maintenance Form

Error (%)	0.27
-----------	------

Radio

Standing Wave Ratio	1.0000
Does the station have a stage sensor?	Yes
Is the PT an SDI-12?	No

5096 ALERT1 PT Calibration

5096 Alert PT Calibration


How many different values are being tested?	7
Offset	0.00000
Effective Date	06/09/2021
Effective Time	12:25 PM (-6 GMT)
NOTICE	If offset is greater than 0.5ft adjust ZERO screw in signal conditioning box.

Finishing Comments

Final Comments	Did not do maintenance. PT is bad. Drawing too much power causing other sensors to read incorrectly. When PT is unplugged, everything is reading correct
Depart Time	12:55 PM (-6 GMT)

Station Maintenance Form

Station Maintenance Form

Location	West Cherry Creek Wx
Station_ID	2790
Technician(s)	ZJN,EJH
Date	08/30/2021
Time Arrive	10:02 AM (-6 GMT)
GPS Location	
	Lat: 39.2621534 Long: -104.7093025
Agency	Douglas County

Station Type

What type of station?	Weather
-----------------------	---------

Weather Station Maintenance

Weather Maintenance

Rain Sensor

Does the station have a rain sensor?	No
--------------------------------------	----

Rain Gage Calibration

Error (%)	0.27
-----------	------

Power System

Station Maintenance Form

Regulator Output Voltage (V)	20.09
Charging Current (mA)	620.00
Battery Voltage Quiet (V)	13.18
Battery Voltage Transmitted (V)	13.08

Sensor Verification

Temperature (°C)	28.20
Relative Humidity (%)	19.00
Wind Speed (mph)	4.00
Temperature (°C)	28.20
Relative Humidity (%)	19.60
Wind Speed (mph)	4.00

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	4.50
Watts Reflected	0.00
Standing Wave Ratio	1.0000

5096 ALERT1 PT Calibration


5096 Alert PT Calibration

How many different values are being tested?	7
Stage 1	12.33
Calibrated Reading 1	118.00
Stage 2	10.20
Calibrated Reading 2	97.00
Stage 3	8.25
Calibrated Reading 3	78.00
Stage 4	5.86
Calibrated Reading 4	55.00
Stage 5	4.41
Calibrated Reading 5	41.00
Stage 6	2.43
Calibrated Reading 6	23.00
Stage 7	0.00

Station Maintenance Form

Calibrated Reading 7	0.00
Slope	0.10456
Offset	0.05728
Effective Date	08/30/2021
Effective Time	11:03 AM (-6 GMT)
NOTICE	If offset is greater than 0.5ft adjust ZERO screw in signal conditioning box.

Finishing Comments

Items Replaced	PT
Final Comments	Replaced PT due to being broken with horse creek spare druck. Everything working well. Received test transmission.
Depart Time	11:15 AM (-6 GMT)
Photos	

Station Maintenance Form

Station Maintenance Form

Location	West Cherry Creek Wx
Station_ID	2790
Technician(s)	ZJN
Date	11/16/2021
Time Arrive	12:50 PM (-7 GMT)
Agency	Douglas County

Station Type

What type of station?	Weather
-----------------------	---------

Weather Station Maintenance

Weather Maintenance

Items Cleaned

Clean Checks	Solar_panel
--------------	-------------

Rain Gage Calibration

Error (%)	0.27
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Power System

Regulator Output Voltage (V)	20.85
Charging Current (mA)	277.00
Battery Voltage Quiet (V)	13.58
Battery Voltage Transmitted (V)	13.48

Sensor Verification

Temperature (°C)	18.30
Relative Humidity (%)	13.20
Wind Speed (mph)	2.00
Temperature (°C)	19.50
Relative Humidity (%)	16.00
Wind Speed (mph)	1.60

Transmitter

Transmitter Checks	Desiccant, Program, Time
--------------------	--------------------------

Radio

Watts Forward	5.00
Watts Reflected	0.10
Standing Wave Ratio	1.3294


Station Maintenance Form

Finishing Comments

Final Comments	Moved PT to winter position. Everything working well. Received test transmission.
Depart Time	01:13 PM (-7 GMT)
Photos	

Station Maintenance Form

Station Maintenance Form

Location	Haskins Gulch
Station_ID	2820
Technician(s)	ZJN
Date	04/01/2021
Time Arrive	10:18 AM (-6 GMT)
GPS Location	
	Lat: 39.423325 Long: -104.9046451
Agency	Douglas County

Station Type

What type of station?	Precipitation
-----------------------	---------------

Precipitation Station Maintenance

Precipitation Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
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Rain Gage Calibration

Point ID	2820
Tips During Calibration	13

Station Maintenance Form

Volume Added or Removed (mL)	-6.00
Error (%)	0.90
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	20.37
Charging Current (mA)	196.00
Battery Voltage Quiet (V)	12.80
Battery Voltage Transmitted (V)	12.69

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------


Radio

Watts Forward	4.50
Watts Reflected	0.10
Standing Wave Ratio	1.3504

Stream Station Maintenance

No calibration form necessary	Check to see if PT is working properly.
-------------------------------	---

Finishing Comments

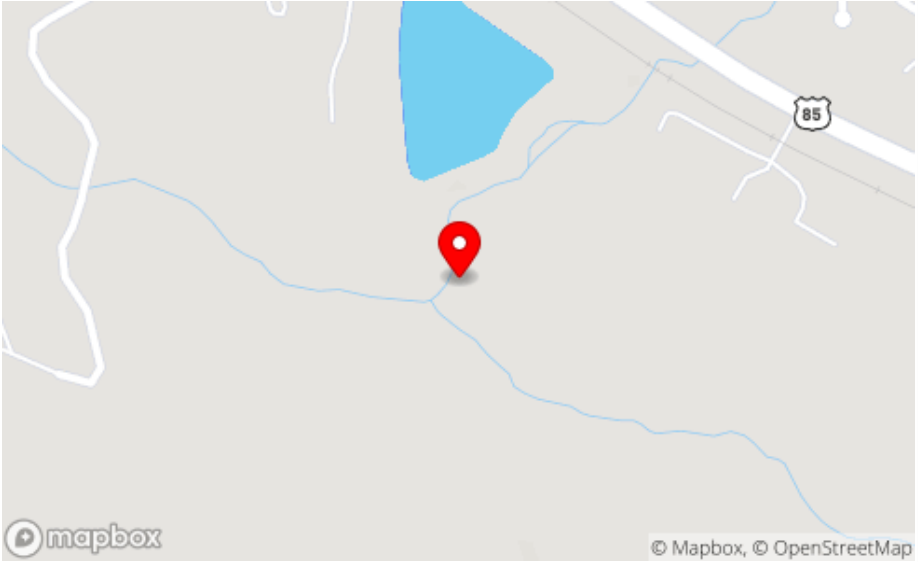
Final Comments	Everything working well. Received test transmission.
Depart Time	10:46 AM (-6 GMT)
Photos	

Station Maintenance Form



Station Maintenance Form

Station Maintenance Form

Location	Haskins Gulch
Station_ID	2820
Technician(s)	ZJN,EJH
Date	09/07/2021
Time Arrive	12:00 PM (-6 GMT)
GPS Location	
	Lat: 39.4233026 Long: -104.9044029
Agency	Douglas County

Station Type

What type of station?	Precipitation
------------------------------	---------------

Finishing Comments

Final Comments	<p>Upgraded station to ALERT2. Installed encoder board and GPS antenna/polyphaser. Installed a new Maxon radio.</p> <p>New ID is 10094 and offset is 114000</p> <p>Sent 2 test tips and received them</p>
Depart Time	01:02 PM (-6 GMT)


Station Maintenance Form

Photos



Station Maintenance Form

Station Maintenance Form

Location	CC @ Bayou
Station_ID	2850
Technician(s)	ZJN,EJH
Date	03/19/2021
Time Arrive	10:35 AM (-6 GMT)
GPS Location	
	Lat: 39.4355896 Long: -104.7694821
Agency	Douglas County

Station Type

What type of station?	Stream
-----------------------	--------

Stream Station Maintenance

Stream Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
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Rain Gage Calibration

Station Maintenance Form

Point ID	2850
Tips During Calibration	13
Volume Added or Removed (mL)	-13.00
Error (%)	1.64
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	14.40
Charging Current (mA)	182.00
Battery Voltage Quiet (V)	12.83
Battery Voltage Transmitted (V)	12.72

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	3.75
Watts Reflected	0.10
Standing Wave Ratio	1.3903
Is the PT an SDI-12?	No
No calibration form necessary	Check to see if PT is working properly.

5096 ALERT1 PT Calibration

5096 Alert PT Calibration

How many different values are being tested?	7
Stage 1	12.00
Calibrated Reading 1	131.00
Stage 2	10.00
Calibrated Reading 2	110.00
Stage 3	8.00
Calibrated Reading 3	88.00
Stage 4	6.00
Calibrated Reading 4	66.00
Stage 5	4.00
Calibrated Reading 5	44.00
Stage 6	2.00

Station Maintenance Form


Calibrated Reading 6	23.00
Stage 7	0.00
Calibrated Reading 7	1.00
Slope	0.09210
Offset	-0.09184
Effective Date	03/19/2021
Effective Time	10:59 AM (-6 GMT)
NOTICE	If offset is greater than 0.5ft adjust ZERO screw in signal conditioning box.

Finishing Comments

Final Comments	Everything working well. Received test transmission.
Depart Time	12:18 PM (-6 GMT)
Photos	

Station Maintenance Form

Station Maintenance Form

Location	CC @ Bayou Gulch
Station_ID	2850
Technician(s)	ZJN
Date	06/16/2021
Time Arrive	09:50 AM (-6 GMT)
GPS Location	
	Lat: 39.4356037 Long: -104.7695254
Agency	Douglas County

Station Type

What type of station?	Stream
-----------------------	--------

Stream Station Maintenance

Stream Maintenance

Items Cleaned

Clean Checks	Solar_panel, Tipping_bucket, Funnel
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Station Maintenance Form

Point ID	2850
Tips During Calibration	13
Volume Added or Removed (mL)	-2.00
Error (%)	0.48
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	18.99
Charging Current (mA)	131.00
Battery Voltage Quiet (V)	13.58
Battery Voltage Transmitted (V)	13.47

Transmitter

Transmitter Checks	Desiccant, Program, Bucket, Time
--------------------	----------------------------------

Radio

Watts Forward	4.25
Watts Reflected	0.25
Standing Wave Ratio	1.6404

5096 ALERT1 PT Calibration


5096 Alert PT Calibration

How many different values are being tested?	7
Stage 1	11.94
Calibrated Reading 1	132.00
Stage 2	10.14
Calibrated Reading 2	112.00
Stage 3	7.94
Calibrated Reading 3	88.00
Stage 4	6.10
Calibrated Reading 4	68.00
Stage 5	4.06
Calibrated Reading 5	46.00
Stage 6	2.16
Calibrated Reading 6	25.00
Stage 7	0.00

Station Maintenance Form


Calibrated Reading 7	1.00
Slope	0.09139
Offset	-0.11393
Effective Date	06/16/2021
Effective Time	10:26 AM (-6 GMT)
NOTICE	If offset is greater than 0.5ft adjust ZERO screw in signal conditioning box.

Finishing Comments

Final Comments	Everything working well. Received test transmission.
Depart Time	10:40 AM (-6 GMT)
Photos	

Station Repair Form

Station Maintenance Form

Location	Cherry Creek at Bayou Gulch
Station_ID	2850
Technician(s)	ZJN,EJH
Date	08/30/2021
Time Arrive	12:00 PM (-6 GMT)
GPS Location	
	Lat: 39.4355966 Long: -104.7693929
Agency	Douglas County

Repair Comments

Comments	Installed door kit and GPS antenna for alert2 upgrade. Need to upgrade transmitter and preform maintenance.
Depart Time	01:55 PM (-6 GMT)

Station Repair Form


Photos





Station Maintenance Form

Station Maintenance Form

Location	Cherry Creek @ Bayou Gulch
Station_ID	2850
Technician(s)	ZJN,EJH
Date	09/02/2021
Time Arrive	01:30 PM (-6 GMT)
GPS Location	
	Lat: 39.4356599 Long: -104.7763252
Agency	Douglas County

Station Type

What type of station?	Stream
-----------------------	--------

Stream Station Maintenance

Stream Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
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Rain Gage Calibration

Point ID	0
Tips During Calibration	13
Volume Added or Removed (mL)	-4.00
Error (%)	0.69

Station Maintenance Form

Data Logger reads tips in both directions	checked
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Power System

Regulator Output Voltage (V)	14.01
Charging Current (mA)	60.00
Battery Voltage Quiet (V)	13.26
Battery Voltage Transmitted (V)	13.14

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	4.00
Watts Reflected	0.20
Standing Wave Ratio	1.5760

5096 ALERT2 PT Calibration




5096 ALERT2 PT Calibration

REPROGRAM TRANSMITTER TO BASE VALUES	(25.5,1023,0)
How many different values are being tested?	7
Stage 1	12.39
Raw Value 1	552.00
Stage 2	10.17
Raw Value 2	455.00
Stage 3	8.24
Raw Value 3	369.00
Stage 4	6.18
Raw Value 4	278.00
Stage 5	4.15
Raw Value 5	188.00
Stage 6	2.18
Raw Value 6	101.00
Stage 7	0.00
Raw Value 7	4.00
Multiplier	23.11770
Divisor	1023

Station Maintenance Form

Offset	-0.09831
NOTICE	If offset is greater than 0.5ft adjust ZERO screw in signal conditioning box.

Finishing Comments


Final Comments	<p>Upgraded station to ALERT2. Installed GPS on mast and encoder board. Updated transmitter and programming.</p> <p>New ID is 10092 and offset is 113000</p> <p>Everything working well. Received test transmissions. This confirms there is interference on the 171.100 frequency for legacy alert stations</p>
Depart Time	03:16 PM (-6 GMT)
Photos	  

Station Maintenance Form



Station Maintenance Form

Station Maintenance Form

Location	CC @ Stroh
Station_ID	2860
Technician(s)	ZJN,EJH
Date	03/19/2021
Time Arrive	10:01 AM (-6 GMT)
GPS Location	
	Lat: 39.480221 Long: -104.7698724
Agency	Douglas County

Station Type

What type of station?	Stream
-----------------------	--------

Stream Station Maintenance

Stream Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
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Rain Gage Calibration

Station Maintenance Form

Point ID	2860
Tips During Calibration	13
Volume Added or Removed (mL)	-2.00
Error (%)	0.48
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	13.83
Charging Current (mA)	96.00
Battery Voltage Quiet (V)	12.96
Battery Voltage Transmitted (V)	12.69

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	4.75
Watts Reflected	0.20
Standing Wave Ratio	1.5163
Is the PT an SDI-12?	No
No calibration form necessary	Check to see if PT is working properly.

5096 ALERT1 PT Calibration

5096 Alert PT Calibration

How many different values are being tested?	7
Stage 1	11.87
Calibrated Reading 1	2609.00
Stage 2	10.17
Calibrated Reading 2	2239.00
Stage 3	8.14
Calibrated Reading 3	1784.00
Stage 4	6.20
Calibrated Reading 4	1359.00
Stage 5	3.97
Calibrated Reading 5	869.00
Stage 6	1.93

Station Maintenance Form


Calibrated Reading 6	419.00
Stage 7	0.00
Calibrated Reading 7	4.00
Slope	0.00455
Offset	0.00867
Effective Date	04/02/2021
Effective Time	12:17 PM (-6 GMT)
NOTICE	If offset is greater than 0.5ft adjust ZERO screw in signal conditioning box.

Finishing Comments

Final Comments	Everything working well. Received test transmission.
Depart Time	10:25 AM (-6 GMT)
Photos	

Station Maintenance Form

Station Maintenance Form

Location	CC @ Stroh
Station_ID	2860
Technician(s)	ZJN
Date	06/16/2021
Time Arrive	11:49 AM (-6 GMT)
GPS Location	
	Lat: 39.4801697 Long: -104.7699384
Agency	Douglas County

Station Type

What type of station?	Stream
-----------------------	--------

Stream Station Maintenance

Stream Maintenance

Items Cleaned

Clean Checks	Solar_panel, Tipping_bucket, Funnel
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
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Rain Gage Calibration

Station Maintenance Form

Point ID	2860
Tips During Calibration	13
Volume Added or Removed (mL)	-13.00
Error (%)	1.64
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	13.84
Charging Current (mA)	41.00
Battery Voltage Quiet (V)	13.32
Battery Voltage Transmitted (V)	13.24

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	5.00
Watts Reflected	0.10
Standing Wave Ratio	1.3294

5096 ALERT1 PT Calibration


5096 Alert PT Calibration

How many different values are being tested?	7
Stage 1	11.91
Calibrated Reading 1	131.00
Stage 2	9.86
Calibrated Reading 2	108.00
Stage 3	7.80
Calibrated Reading 3	86.00
Stage 4	6.03
Calibrated Reading 4	66.00
Stage 5	3.94
Calibrated Reading 5	43.00
Stage 6	1.91
Calibrated Reading 6	21.00
Stage 7	0.00

Station Maintenance Form

Calibrated Reading 7	0.00
Slope	0.09097
Offset	0.00849
Effective Date	06/16/2021
Effective Time	12:13 PM (-6 GMT)
NOTICE	If offset is greater than 0.5ft adjust ZERO screw in signal conditioning box.


Finishing Comments

Final Comments	Everything working well. Received test transmission.
Depart Time	12:30 PM (-6 GMT)
Photos	



Station Maintenance Form

Station Maintenance Form

Location	Cherry Creek @ Stroh
Station_ID	2860
Technician(s)	ZJN
Date	08/26/2021
Time Arrive	02:38 PM (-6 GMT)
GPS Location	
	Lat: 39.4801287 Long: -104.769771
Agency	Douglas County

Station Type

What type of station?	Stream
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Stream Station Maintenance

Stream Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
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Rain Gage Calibration

Station Maintenance Form

Point ID	2860
Tips During Calibration	13
Volume Added or Removed (mL)	-4.00
Error (%)	0.69
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	13.84
Charging Current (mA)	24.00
Battery Voltage Quiet (V)	13.28
Battery Voltage Transmitted (V)	13.16

Transmitter

Transmitter Checks	Bucket, Time, Desiccant, Program
--------------------	----------------------------------

Radio

Watts Forward	4.75
Watts Reflected	0.00
Standing Wave Ratio	1.0000

5096 ALERT1 PT Calibration


5096 Alert PT Calibration

How many different values are being tested?	7
Stage 1	11.63
Calibrated Reading 1	127.00
Stage 2	9.95
Calibrated Reading 2	109.00
Stage 3	8.04
Calibrated Reading 3	88.00
Stage 4	6.00
Calibrated Reading 4	66.00
Stage 5	4.01
Calibrated Reading 5	44.00
Stage 6	2.05
Calibrated Reading 6	23.00
Stage 7	0.00

Station Maintenance Form

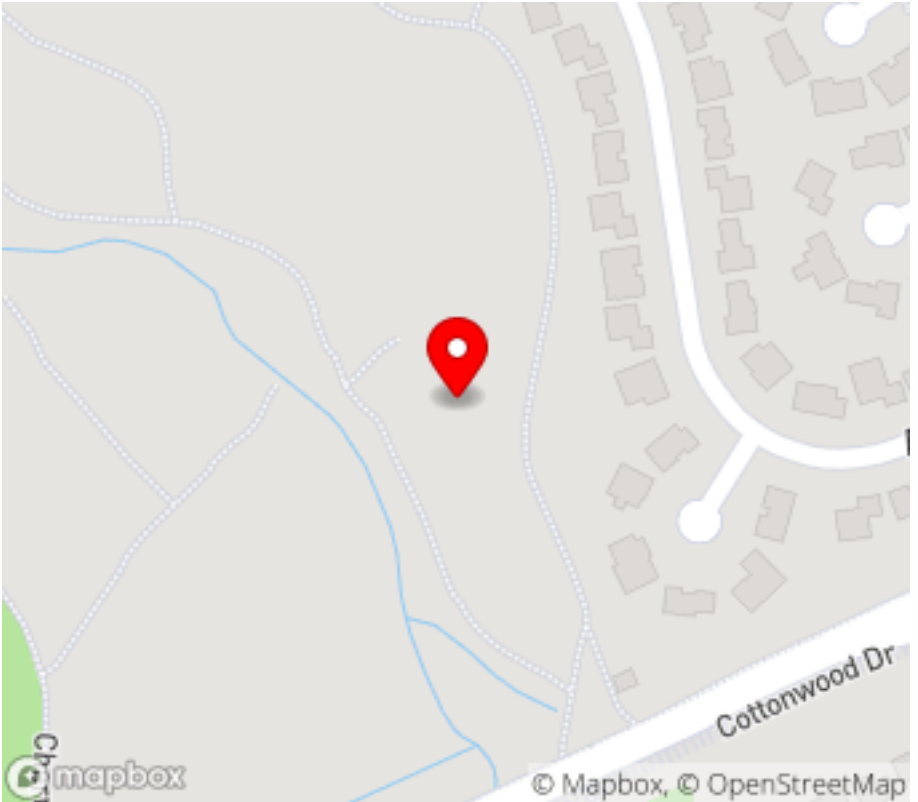
Calibrated Reading 7	2.00
Slope	0.09259
Offset	-0.11682
Effective Date	08/26/2021
Effective Time	03:00 PM (-6 GMT)
NOTICE	If offset is greater than 0.5ft adjust ZERO screw in signal conditioning box.

Finishing Comments

Final Comments	Everything working well. Received test transmission.
Depart Time	03:13 PM (-6 GMT)
Photos	

Station Maintenance Form

Station Maintenance Form

Location	Cherry Creek @ Cottonwood
Station_ID	2870
Technician(s)	ZJN
Date	04/05/2021
Time Arrive	02:36 PM (-6 GMT)
GPS Location	
	Lat: 39.5579003 Long: -104.7855967
Agency	Douglas County

Station Type

What type of station?	Stream
-----------------------	--------

Stream Station Maintenance

Stream Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Station Maintenance Form

Point ID	2870
Tips During Calibration	13
Volume Added or Removed (mL)	-8.00
Error (%)	1.11
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	13.77
Charging Current (mA)	38.00
Battery Voltage Quiet (V)	13.96
Battery Voltage Transmitted (V)	13.85

Transmitter

Transmitter Checks	Desiccant, Program, Bucket, Time
--------------------	----------------------------------

Radio

Watts Forward	5.00
Watts Reflected	0.75
Standing Wave Ratio	2.2642
Is the PT an SDI-12?	No
No calibration form necessary	Check to see if PT is working properly.

5096 ALERT1 PT Calibration

5096 Alert PT Calibration

How many different values are being tested?	7
Stage 1	12.06
Calibrated Reading 1	134.00
Stage 2	9.95
Calibrated Reading 2	110.00
Stage 3	8.04
Calibrated Reading 3	89.00
Stage 4	6.05
Calibrated Reading 4	67.00
Stage 5	4.04
Calibrated Reading 5	45.00
Stage 6	1.94

Station Maintenance Form

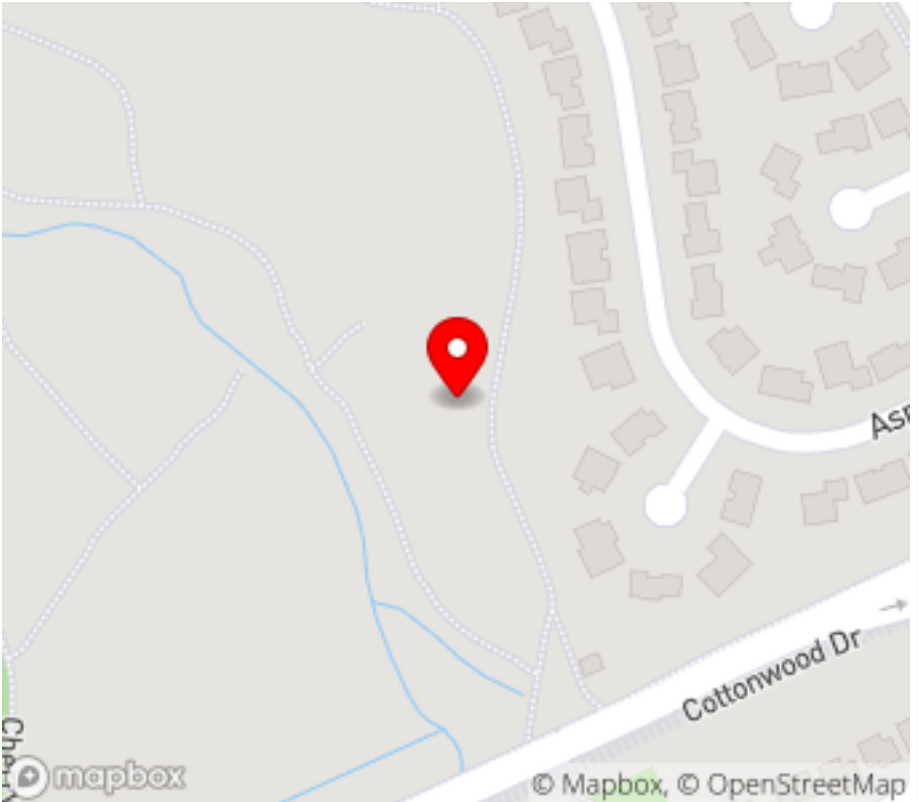
Calibrated Reading 6	22.00
Stage 7	0.00
Calibrated Reading 7	0.00
Slope	0.09035
Offset	-0.01624
Effective Date	04/05/2021
Effective Time	03:12 PM (-6 GMT)
NOTICE	If offset is greater than 0.5ft adjust ZERO screw in signal conditioning box.

Finishing Comments

Final Comments	Everything working well. Received test transmission. Need to replace battery on 5096 board. Changed to a 2 wire bucket in program
Depart Time	03:33 PM (-6 GMT)
Photos	

Station Maintenance Form

Station Maintenance Form

Location	CC @ Cottonwood
Station_ID	2870
Technician(s)	ZJN
Date	06/15/2021
Time Arrive	03:48 PM (-6 GMT)
GPS Location	
	Lat: 39.5578506 Long: -104.7854605
Agency	Douglas County

Station Type

What type of station?	Stream
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Stream Station Maintenance

Stream Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
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Rain Gage Calibration

Station Maintenance Form

Point ID	2870
Tips During Calibration	13
Volume Added or Removed (mL)	-11.00
Error (%)	1.43
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	13.79
Charging Current (mA)	10.00
Battery Voltage Quiet (V)	13.03
Battery Voltage Transmitted (V)	12.94

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	5.00
Watts Reflected	0.75
Standing Wave Ratio	2.2642

5096 ALERT1 PT Calibration

5096 Alert PT Calibration

How many different values are being tested?	7
Stage 1	12.11
Calibrated Reading 1	134.00
Stage 2	10.07
Calibrated Reading 2	111.00
Stage 3	7.83
Calibrated Reading 3	87.00
Stage 4	5.95
Calibrated Reading 4	66.00
Stage 5	3.89
Calibrated Reading 5	43.00
Stage 6	2.16
Calibrated Reading 6	24.00
Stage 7	0.00

Station Maintenance Form

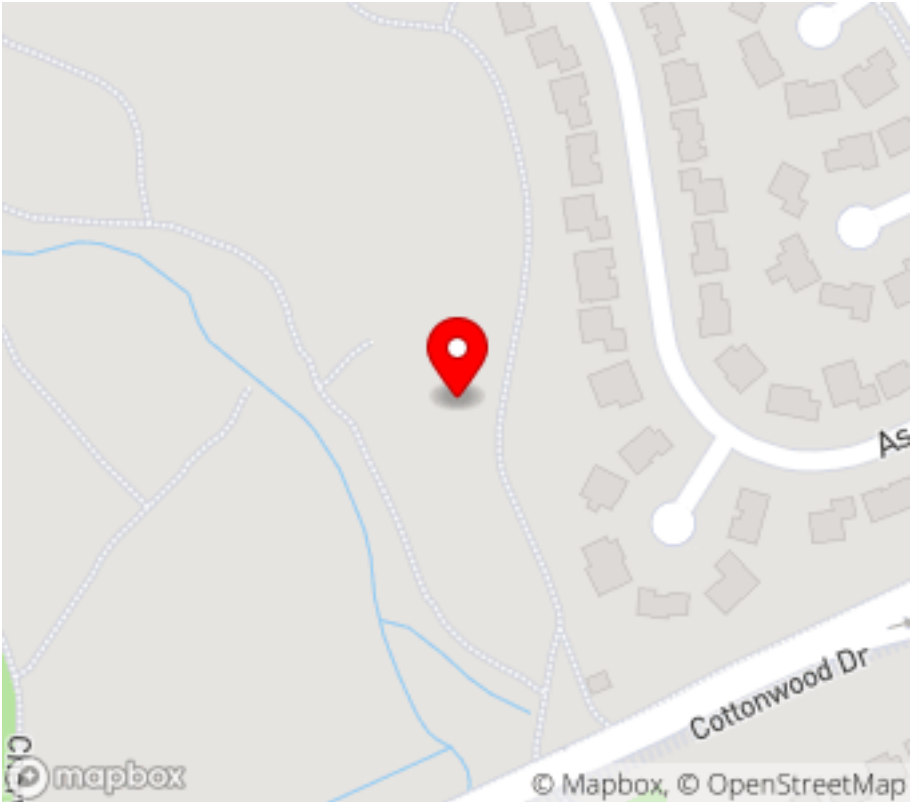
Calibrated Reading 7	0.00
Slope	0.09047
Offset	-0.00844
Effective Date	06/15/2021
Effective Time	04:17 PM (-6 GMT)
NOTICE	If offset is greater than 0.5ft adjust ZERO screw in signal conditioning box.

Finishing Comments

Final Comments	Everything working well. Received test transmission.
Depart Time	04:43 PM (-6 GMT)
Photos	

Station Maintenance Form

Station Maintenance Form

Location	Cherry Creek @ Cottonwood
Station_ID	2870
Technician(s)	ZJN
Date	08/27/2021
Time Arrive	11:21 AM (-6 GMT)
GPS Location	
	Lat: 39.557907 Long: -104.7854905
Agency	Douglas County

Station Type

What type of station?	Stream
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Stream Station Maintenance

Stream Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
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Rain Gage Calibration

Station Maintenance Form

Point ID	2870
Tips During Calibration	13
Volume Added or Removed (mL)	-3.00
Error (%)	0.58
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	13.79
Charging Current (mA)	76.00
Battery Voltage Quiet (V)	13.18
Battery Voltage Transmitted (V)	13.09

Transmitter

Transmitter Checks	Bucket, Time, Program, Desiccant
--------------------	----------------------------------

Radio

Watts Forward	4.75
Watts Reflected	0.00
Standing Wave Ratio	1.0000

5096 ALERT1 PT Calibration

5096 Alert PT Calibration

How many different values are being tested?	7
Stage 1	10.95
Calibrated Reading 1	119.00
Stage 2	9.41
Calibrated Reading 2	102.00
Stage 3	8.07
Calibrated Reading 3	88.00
Stage 4	5.93
Calibrated Reading 4	64.00
Stage 5	3.93
Calibrated Reading 5	42.00
Stage 6	1.73
Calibrated Reading 6	18.00
Stage 7	0.00

Station Maintenance Form


Calibrated Reading 7	0.00
Slope	0.09166
Offset	0.04735
Effective Date	08/27/2021
Effective Time	11:45 AM (-6 GMT)
NOTICE	If offset is greater than 0.5ft adjust ZERO screw in signal conditioning box.

Finishing Comments

Final Comments	Everything working well. Received test transmission.
Depart Time	12:00 PM (-6 GMT)
Photos	

Station Maintenance Form

Station Maintenance Form

Location	Spruce Mountain
Station_ID	2890
Technician(s)	ZJN,JDP
Date	03/31/2021
Time Arrive	10:00 AM (-6 GMT)
GPS Location	
	Lat: 39.16747 Long: -104.8744765
Agency	Douglas County

Station Type

What type of station?	Precipitation
-----------------------	---------------

Precipitation Station Maintenance

Precipitation Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Gage Calibration

Point ID	2890
Tips During Calibration	12

Station Maintenance Form

Volume Added or Removed (mL)	2.00
Error (%)	0.06
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	22.01
Charging Current (mA)	361.00
Battery Voltage Quiet (V)	12.20
Battery Voltage Transmitted (V)	12.00

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	3.50
Watts Reflected	0.00
Standing Wave Ratio	1.0000

Stream Station Maintenance


No calibration form necessary	Check to see if PT is working properly.
-------------------------------	---

Finishing Comments

Final Comments	Everything working well. Received test transmission
Depart Time	10:33 AM (-6 GMT)
Photos	

Station Repair Form

Station Maintenance Form


Location	Spruce Mountain
Station_ID	2890
Technician(s)	ZJN
Date	05/19/2021
Time Arrive	12:15 PM (-6 GMT)
GPS Location	
	Lat: 39.1673299 Long: -104.8745004
Agency	Douglas County

Repair Comments

Comments	Set battery and rain reports back to 12 hours
Depart Time	12:25 PM (-6 GMT)

Station Maintenance Form

Station Maintenance Form

Location	Spruce Mountain Open Space
Station_ID	2890
Technician(s)	ZJN
Date	07/29/2021
Time Arrive	10:13 AM (-6 GMT)
GPS Location	
	Lat: 39.167759 Long: -104.874339
Agency	Douglas County

Station Type

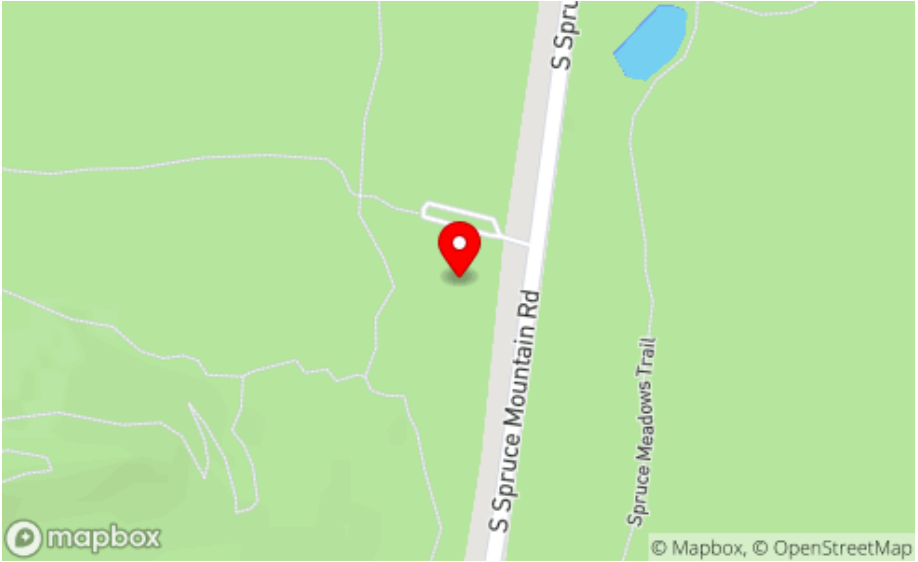
What type of station?	Precipitation
-----------------------	---------------

Finishing Comments

Final Comments	Sent and received 2 test tips
Depart Time	10:20 AM (-6 GMT)

Station Repair Form

Station Maintenance Form

Location	Spruce Mountain Open Space
Station_ID	2890
Technician(s)	ZJN,EJH
Date	09/02/2021
Time Arrive	10:00 AM (-6 GMT)
GPS Location	
	Lat: 39.1673374 Long: -104.8745873
Agency	Douglas County

Repair Comments

Comments	<p>Installed ALERT2 encoder board and upgraded station to ALERT2. Installed GPS on mast. New ID is 10093 and offset is 113500</p> <p>Station was not receiving all of its transmissions. Upgrading to ALERT2 seems to have helped. Got 3 test transmissions and hourly check in. Everything working well.</p>
Depart Time	11:53 AM (-6 GMT)

Station Repair Form

Photos




Station Repair Form



Station Maintenance Form

Station Maintenance Form

Location	Russellville Gulch
Station_ID	2900
Technician(s)	ZJN, JDP
Date	03/25/2021
Time Arrive	12:54 PM (-6 GMT)
GPS Location	
	Lat: 39.3490201 Long: -104.7022434
Agency	Douglas County

Station Type

What type of station?	Precipitation
-----------------------	---------------

Precipitation Station Maintenance

Precipitation Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
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Rain Gage Calibration

Point ID	2900
Tips During Calibration	13

Station Maintenance Form

Volume Added or Removed (mL)	-3.00
Error (%)	0.58
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	20.31
Charging Current (mA)	354.00
Battery Voltage Quiet (V)	12.71
Battery Voltage Transmitted (V)	12.47

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------


Radio

Watts Forward	4.25
Watts Reflected	0.00
Standing Wave Ratio	1.0000

Stream Station Maintenance


No calibration form necessary	Check to see if PT is working properly.
-------------------------------	---

Finishing Comments

Final Comments	Amplifier not working correctly. Only 4.25 watts forward which is same as radio. Changed fuse. Monitor transmissions. A lot of water in bottom of standpipe. Received test transmissions
Depart Time	01:54 PM (-6 GMT)
Photos	

Station Maintenance Form

Station Maintenance Form

Location	Russellville Gulch
Station_ID	2900
Technician(s)	ZJN
Date	07/29/2021
Time Arrive	11:39 AM (-6 GMT)
GPS Location	
	Lat: 39.348974 Long: -104.702229
Agency	Douglas County

Station Type

What type of station?	Precipitation
-----------------------	---------------

Finishing Comments

Final Comments	Sent and received 2 test tips
Depart Time	11:45 AM (-6 GMT)

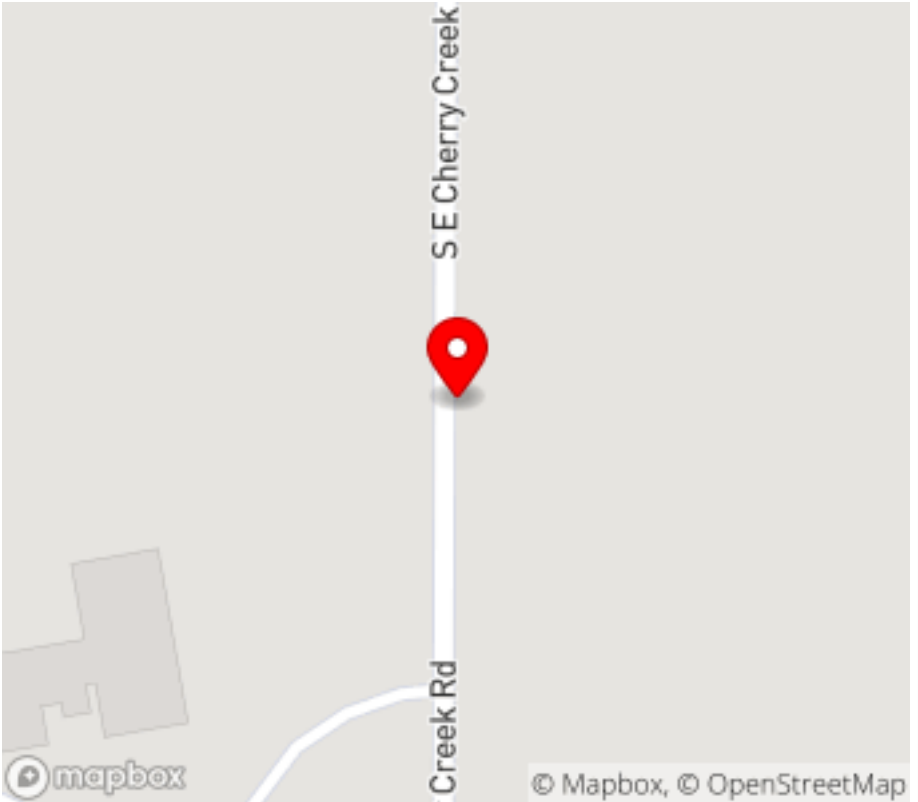
Station Maintenance Form

Photos



Station Maintenance Form

Station Maintenance Form

Location	East Cherry Creek
Station_ID	2910
Technician(s)	ZJN, JDP
Date	03/25/2021
Time Arrive	10:24 AM (-6 GMT)
GPS Location	
	Lat: 39.1642696 Long: -104.6814289
Agency	Douglas County

Station Type

What type of station?	Precipitation
-----------------------	---------------

Precipitation Station Maintenance

Precipitation Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
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Rain Gage Calibration

Point ID	2910
Tips During Calibration	12

Station Maintenance Form

Volume Added or Removed (mL)	2.00
Error (%)	0.06
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	14.31
Charging Current (mA)	270.00
Battery Voltage Quiet (V)	12.80
Battery Voltage Transmitted (V)	12.69

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	3.25
Watts Reflected	0.00
Standing Wave Ratio	1.0000

Stream Station Maintenance

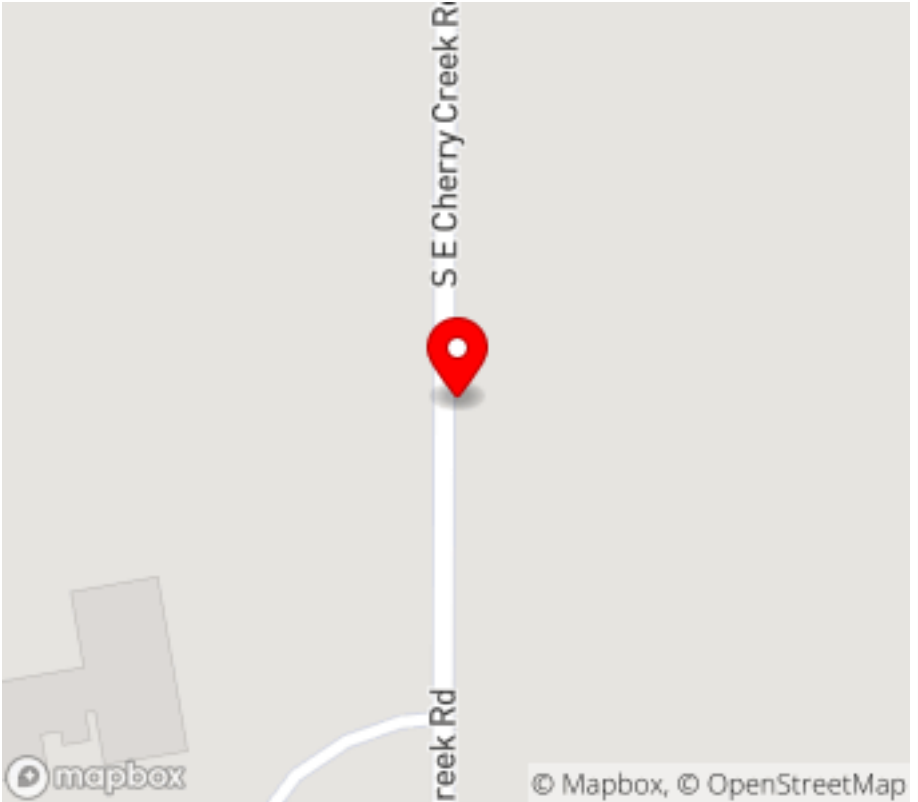
No calibration form necessary	Check to see if PT is working properly.
-------------------------------	---

Finishing Comments

Final Comments	Everything working well. Received test transmission
Depart Time	10:55 AM (-6 GMT)

Station Maintenance Form

Station Maintenance Form

Location	East Cherry Creek Road
Station_ID	2910
Technician(s)	ZJN
Date	07/29/2021
Time Arrive	10:52 AM (-6 GMT)
GPS Location	
	Lat: 39.164357 Long: -104.681427
Agency	Douglas County

Station Type

What type of station?	Precipitation
-----------------------	---------------

Finishing Comments

Final Comments	Sent and received 2 test tips
Depart Time	10:55 AM (-6 GMT)


Station Maintenance Form

Photos



Station Maintenance Form

Station Maintenance Form

Location	West Cherry Head
Station_ID	2920
Technician(s)	ZJN,JDP
Date	03/31/2021
Time Arrive	10:48 AM (-6 GMT)
GPS Location	
	Lat: 39.1297713 Long: -104.8085376
Agency	Douglas County

Station Type

What type of station?	Precipitation
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Precipitation Station Maintenance

Precipitation Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
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Rain Gage Calibration

Point ID	2920
Tips During Calibration	13

Station Maintenance Form

Volume Added or Removed (mL)	-7.00
Error (%)	1.01
Data Logger reads tips in both directions	checked

Power System

Battery Voltage Quiet (V)	12.91
Battery Voltage Transmitted (V)	12.78

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------


Radio

Watts Forward	3.25
Watts Reflected	0.00
Standing Wave Ratio	1.0000

Stream Station Maintenance


No calibration form necessary	Check to see if PT is working properly.
-------------------------------	---

Finishing Comments

Final Comments	Everything working well. Received test transmission
Depart Time	11:17 AM (-6 GMT)
Photos	

Station Maintenance Form

Station Maintenance Form

Location	West Cherry Head
Station_ID	2920
Technician(s)	ZJN
Date	07/29/2021
Time Arrive	10:33 AM (-6 GMT)
GPS Location	
	Lat: 39.129832 Long: -104.808629
Agency	Douglas County

Station Type

What type of station?	Precipitation
-----------------------	---------------

Finishing Comments

Final Comments	Sent and received 2 test tips
Depart Time	10:39 AM (-6 GMT)


Station Maintenance Form

Photos



Station Maintenance Form

Station Maintenance Form

Location	Spring Valley Rd
Station_ID	2930
Technician(s)	ZJN, JDP
Date	03/25/2021
Time Arrive	11:12 AM (-6 GMT)
GPS Location	
	Lat: 39.1883436 Long: -104.7781
Agency	Douglas County

Station Type

What type of station?	Weather
-----------------------	---------

Stream Station Maintenance

No calibration form necessary	Check to see if PT is working properly.
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Weather Station Maintenance

Weather Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
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Rain Sensor

Station Maintenance Form

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Point ID	2930
Tips During Calibration	12
Volume Added or Removed (mL)	17.00
Error (%)	-1.53
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	20.21
Charging Current (mA)	234.00
Battery Voltage Quiet (V)	14.47
Battery Voltage Transmitted (V)	14.39

Sensor Verification

Temperature (°C)	6.60
Relative Humidity (%)	33.90
Barometric Pressure (mBar)	775.00
Wind Speed (mph)	0.00
Temperature (°C)	8.10
Relative Humidity (%)	36.50
Barometric Pressure (mBar)	771.00
Wind Speed (mph)	0.00

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	4.75
Watts Reflected	0.25
Standing Wave Ratio	1.5954
Does the station have a stage sensor?	No

Finishing Comments

Final Comments	Everything working well. Received test transmission.
Depart Time	11:47 AM (-6 GMT)


Station Maintenance Form

Photos



Station Maintenance Form

Station Maintenance Form

Location	Spring Valley
Station_ID	2930
Technician(s)	ZJN
Date	06/09/2021
Time Arrive	11:15 AM (-6 GMT)
GPS Location	
	Lat: 39.1883309 Long: -104.7781908
Agency	Douglas County

Station Type

What type of station?	Weather
-----------------------	---------

Stream Station Maintenance

No calibration form necessary	Check to see if PT is working properly.
-------------------------------	---

Weather Station Maintenance

Weather Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Station Maintenance Form

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Point ID	2930
Tips During Calibration	13
Volume Added or Removed (mL)	-7.00
Error (%)	1.01
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	16.10
Charging Current (mA)	185.00
Battery Voltage Quiet (V)	13.82
Battery Voltage Transmitted (V)	13.71

Sensor Verification

Temperature (°C)	24.00
Relative Humidity (%)	14.00
Barometric Pressure (mBar)	793.00
Wind Speed (mph)	1.00
Temperature (°C)	26.00
Relative Humidity (%)	16.00
Barometric Pressure (mBar)	788.50
Wind Speed (mph)	1.50

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	5.00
Watts Reflected	0.25
Standing Wave Ratio	1.5760
Does the station have a stage sensor?	No

Finishing Comments

Final Comments	Everything working well. Received test transmission.
Depart Time	11:45 AM (-6 GMT)


Station Maintenance Form

Photos



Station Maintenance Form

Station Maintenance Form

Location	Spring Valley Wx
Station_ID	2930
Technician(s)	ZJN
Date	08/25/2021
Time Arrive	01:08 PM (-6 GMT)
GPS Location	
	Lat: 39.1883199 Long: -104.7780674
Agency	Douglas County

Station Type

What type of station?	Weather
-----------------------	---------

Weather Station Maintenance

Weather Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Station Maintenance Form

Point ID	2930
Tips During Calibration	12
Volume Added or Removed (mL)	6.00
Error (%)	-0.36
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	19.03
Charging Current (mA)	202.00
Battery Voltage Quiet (V)	13.78
Battery Voltage Transmitted (V)	13.69

Sensor Verification

Temperature (°C)	26.11
Relative Humidity (%)	25.00
Barometric Pressure (mBar)	789.00
Wind Speed (mph)	0.00
Temperature (°C)	26.10
Relative Humidity (%)	27.00
Barometric Pressure (mBar)	789.50
Wind Speed (mph)	0.00

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	4.25
Watts Reflected	0.00
Standing Wave Ratio	1.0000

Finishing Comments

Final Comments	Everything working well. Received test transmission.
Depart Time	01:33 PM (-6 GMT)

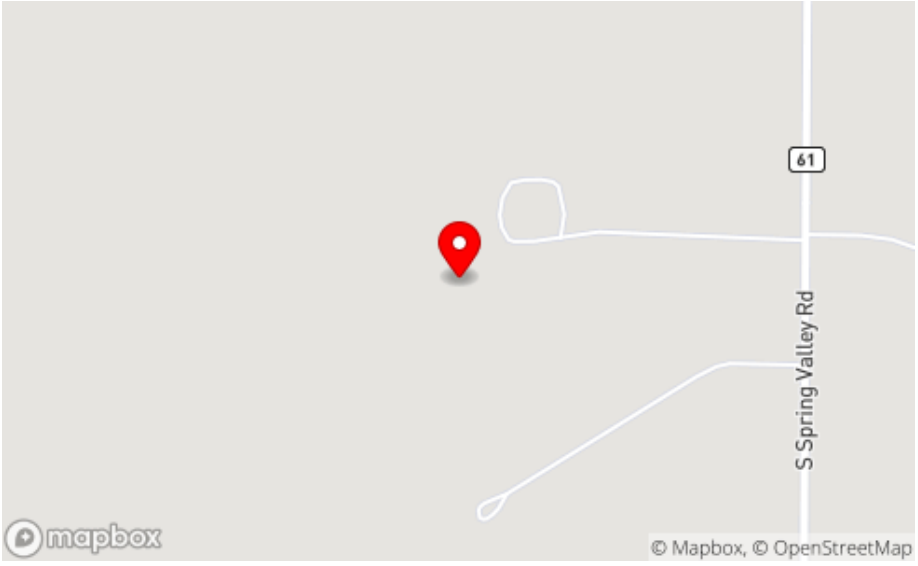
Station Maintenance Form

Photos



Station Maintenance Form

Station Maintenance Form

Location	Spring Valley Wx
Station_ID	2930
Technician(s)	ZJN
Date	11/16/2021
Time Arrive	12:15 PM (-7 GMT)
GPS Location	
	Lat: 39.1882957 Long: -104.7780976
Agency	Douglas County

Station Type

What type of station?	Weather
-----------------------	---------

Weather Station Maintenance

Weather Maintenance

Items Cleaned

Clean Checks	Solar_panel
--------------	-------------

Rain Gage Calibration

Error (%)	0.27
-----------	------

Power System

Regulator Output Voltage (V)	16.57
Charging Current (mA)	114.00
Battery Voltage Quiet (V)	13.77
Battery Voltage Transmitted (V)	13.69

Sensor Verification

Station Maintenance Form

Temperature (°C)	16.00
Relative Humidity (%)	12.10
Barometric Pressure (mBar)	780.00
Wind Speed (mph)	1.00
Temperature (°C)	17.00
Relative Humidity (%)	16.00
Barometric Pressure (mBar)	775.00
Wind Speed (mph)	1.40


Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio


Watts Forward	5.00
Watts Reflected	0.25
Standing Wave Ratio	1.5760

Finishing Comments

Final Comments	Covered tipping bucket. Everything working well. Received test transmission.
Depart Time	12:37 PM (-7 GMT)
Photos	

Station Maintenance Form

Station Maintenance Form

Location	Willow Creek
Station_ID	2940
Technician(s)	ZJN, JDp
Date	03/25/2021
Time Arrive	12:08 PM (-6 GMT)
GPS Location	
	Lat: 39.2943894 Long: -104.7933322
Agency	Douglas County

Station Type

What type of station?	Precipitation
-----------------------	---------------

Precipitation Station Maintenance

Precipitation Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Gage Calibration

Point ID	2940
Tips During Calibration	13

Station Maintenance Form

Volume Added or Removed (mL)	-7.00
Error (%)	1.01
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	21.31
Charging Current (mA)	284.00
Battery Voltage Quiet (V)	12.71
Battery Voltage Transmitted (V)	12.57

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------


Radio

Watts Forward	4.25
Watts Reflected	0.25
Standing Wave Ratio	1.6404

Stream Station Maintenance

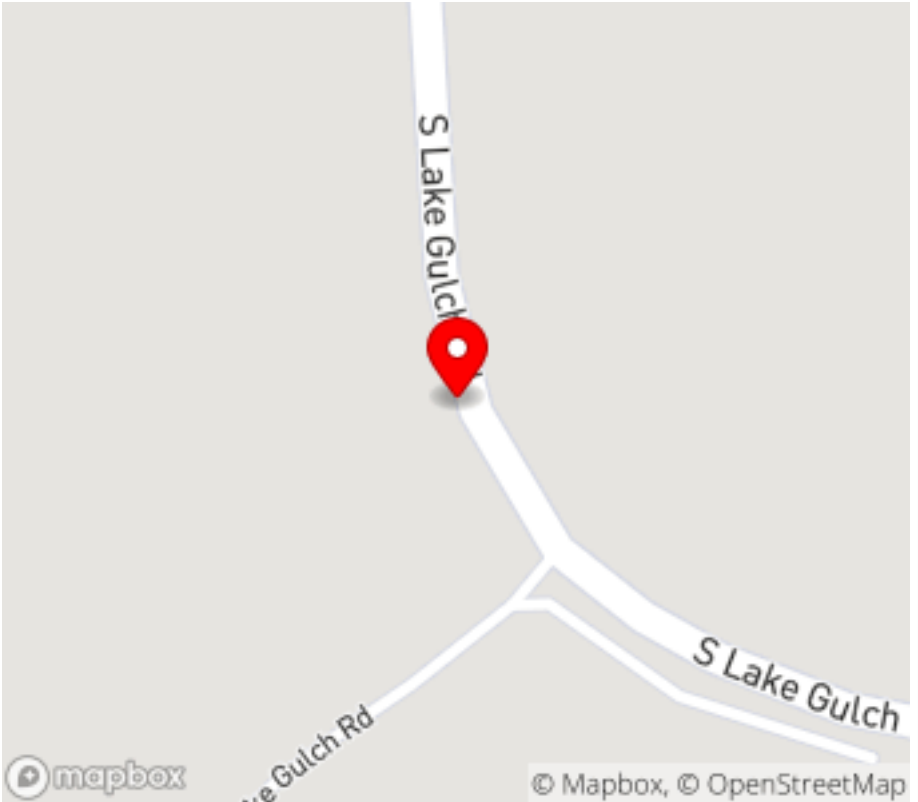
No calibration form necessary	Check to see if PT is working properly.
-------------------------------	---

Finishing Comments

Final Comments	Everything working well. Received test transmission.
Depart Time	12:37 PM (-6 GMT)
Photos	

Station Maintenance Form

Station Maintenance Form

Location	Willow Creek
Station_ID	2940
Technician(s)	ZJN
Date	07/29/2021
Time Arrive	11:16 AM (-6 GMT)
GPS Location	
	Lat: 39.294536 Long: -104.793443

Station Type

What type of station?	Precipitation
-----------------------	---------------

Finishing Comments

Final Comments	Sent and received 2 test tips
Depart Time	11:21 AM (-6 GMT)


Station Maintenance Form

Photos



Station Maintenance Form

Station Maintenance Form

Location	DC Public Works
Station_ID	2950
Technician(s)	ZJN
Date	03/24/2021
Time Arrive	12:26 PM (-6 GMT)
GPS Location	
	Lat: 39.4064584 Long: -104.8707451
Agency	Douglas County

Station Type

What type of station?	Precipitation
-----------------------	---------------

Precipitation Station Maintenance

Precipitation Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Gage Calibration

Point ID	2950
Tips During Calibration	12

Station Maintenance Form

Volume Added or Removed (mL)	18.00
Error (%)	-1.63
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	20.61
Charging Current (mA)	189.00
Battery Voltage Quiet (V)	12.85
Battery Voltage Transmitted (V)	12.73

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------


Radio

Watts Forward	3.75
Watts Reflected	0.10
Standing Wave Ratio	1.3903

Stream Station Maintenance

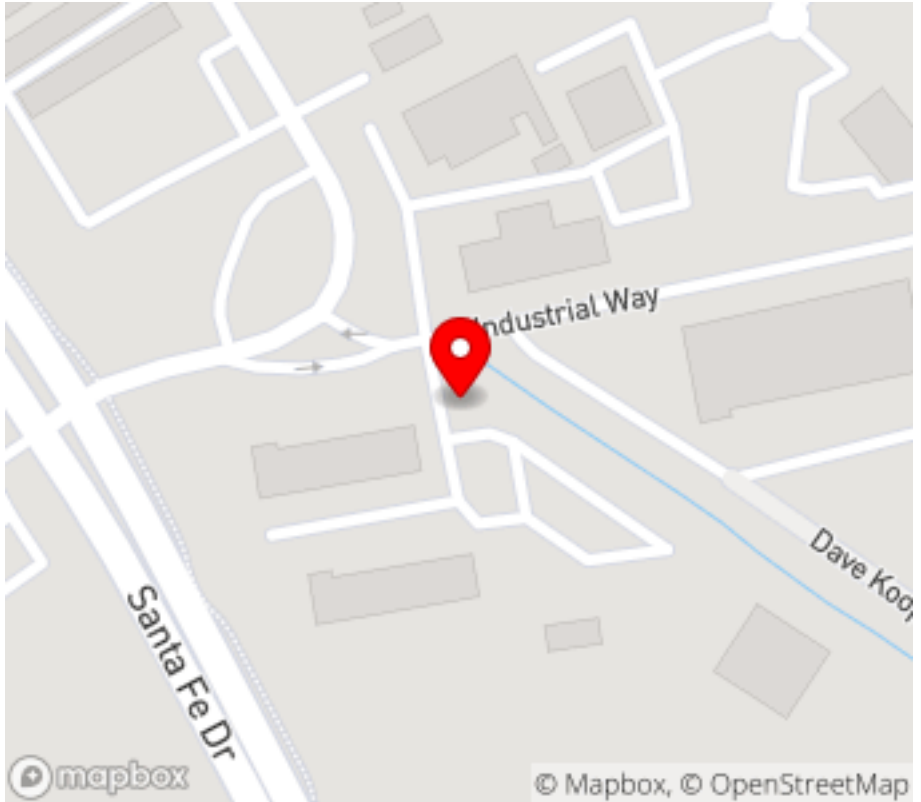
No calibration form necessary	Check to see if PT is working properly.
-------------------------------	---

Finishing Comments

Final Comments	Everything working well. Received test transmission.
Depart Time	01:00 PM (-6 GMT)
Photos	

Station Maintenance Form

Station Maintenance Form

Location	DC Public Works
Station_ID	2950
Technician(s)	ZJN
Date	07/29/2021
Time Arrive	09:24 AM (-6 GMT)
GPS Location	
	Lat: 39.4064463 Long: -104.8708506
Agency	Douglas County

Station Type

What type of station?	Precipitation
-----------------------	---------------

Finishing Comments

Final Comments	Sent and received 2 test tips
Depart Time	09:29 AM (-6 GMT)


Station Maintenance Form

Photos



Station Maintenance Form

Station Maintenance Form

Location	Indian Creek
Station_ID	2960
Technician(s)	ZJN
Date	03/24/2021
Time Arrive	10:31 AM (-6 GMT)
GPS Location	
	Lat: 39.4716486 Long: -105.0024183
Agency	Douglas County

Station Type

What type of station?	Precipitation
-----------------------	---------------

Precipitation Station Maintenance

Precipitation Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Gage Calibration

Point ID	2960
Tips During Calibration	12

Station Maintenance Form

Volume Added or Removed (mL)	10.00
Error (%)	-0.79
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	20.30
Charging Current (mA)	101.00
Battery Voltage Quiet (V)	12.79
Battery Voltage Transmitted (V)	12.69

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------


Radio

Watts Forward	4.25
Watts Reflected	0.00
Standing Wave Ratio	1.0000

Stream Station Maintenance


No calibration form necessary	Check to see if PT is working properly.
-------------------------------	---

Finishing Comments

Final Comments	Everything working well. Received test transmission
Depart Time	11:03 AM (-6 GMT)
Photos	

Station Maintenance Form

Station Maintenance Form

Location	Indian Creek
Station_ID	2960
Technician(s)	ZJN
Date	07/29/2021
Time Arrive	08:21 AM (-6 GMT)
GPS Location	
	Lat: 39.471589 Long: -105.002467
Agency	Douglas County

Station Type

What type of station?	Precipitation
-----------------------	---------------

Finishing Comments

Final Comments	Sent and received 2 tips
Depart Time	08:26 AM (-6 GMT)


Station Maintenance Form

Photos



Station Maintenance Form

Station Maintenance Form

Location	Rampart Range Rd
Station_ID	2970
Technician(s)	ZJN
Date	04/02/2021
Time Arrive	08:43 AM (-6 GMT)
GPS Location	
	Lat: 39.3771225 Long: -105.0941345
Agency	Douglas County

Station Type

What type of station?	Precipitation
-----------------------	---------------

Precipitation Station Maintenance

Precipitation Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Gage Calibration

Point ID	2970
Tips During Calibration	13

Station Maintenance Form

Volume Added or Removed (mL)	-13.00
Error (%)	1.64
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	20.54
Charging Current (mA)	69.00
Battery Voltage Quiet (V)	12.97

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------


Radio

Standing Wave Ratio	1.0000
---------------------	--------

Stream Station Maintenance


No calibration form necessary	Check to see if PT is working properly.
-------------------------------	---

Finishing Comments

Final Comments	Sent two tips for test. Will check for transmissions at end of day. Everything working well.
Depart Time	09:15 AM (-6 GMT)
Photos	

Station Maintenance Form

Station Maintenance Form

Location	Rampart Range Rd
Station_ID	2970
Technician(s)	ZJN
Date	07/29/2021
Time Arrive	08:50 AM (-6 GMT)
GPS Location	
	Lat: 39.37715 Long: -105.09435
Agency	Douglas County

Station Type

What type of station?	Precipitation
-----------------------	---------------

Finishing Comments

Final Comments	Sent and received 2 test tips
Depart Time	08:55 AM (-6 GMT)


Station Maintenance Form

Photos




Station Repair Form

Station Maintenance Form


Location	Dakan Rd
Station_ID	2980
Technician(s)	EJH
Date	01/11/2021
Time Arrive	11:37 AM (-7 GMT)
GPS Location	
	Lat: 39.3019812 Long: -104.9791086
Agency	Douglas County

Repair Comments

Item Replaced	battery
Comments	Checked solar and programming - good
Depart Time	11:56 AM (-7 GMT)
Photos	

Station Maintenance Form

Station Maintenance Form

Location	Dakan Rd
Station_ID	2980
Technician(s)	ZJN
Date	04/01/2021
Time Arrive	12:23 PM (-6 GMT)
GPS Location	
	Lat: 39.3019621 Long: -104.9791166
Agency	Douglas County

Station Type

What type of station?	Precipitation
-----------------------	---------------

Precipitation Station Maintenance

Precipitation Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Gage Calibration

Point ID	2980
Tips During Calibration	13

Station Maintenance Form

Volume Added or Removed (mL)	-8.00
Error (%)	1.11
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	20.79
Charging Current (mA)	339.00
Battery Voltage Quiet (V)	13.15
Battery Voltage Transmitted (V)	13.05

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------


Radio

Watts Forward	5.00
Watts Reflected	0.50
Standing Wave Ratio	1.9250

Stream Station Maintenance


No calibration form necessary	Check to see if PT is working properly.
-------------------------------	---

Finishing Comments

Final Comments	Everything working well. Received test transmission.
Depart Time	12:49 PM (-6 GMT)
Photos	

Station Maintenance Form

Station Maintenance Form

Location	Dakan Rd
Station_ID	2980
Technician(s)	ZJN
Date	06/08/2021
Time Arrive	02:49 PM (-6 GMT)
GPS Location	
	Lat: 39.3019911 Long: -104.979145
Agency	Douglas County

Station Type

What type of station?	Precipitation
-----------------------	---------------

Precipitation Station Maintenance

Precipitation Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Gage Calibration

Point ID	2980
Tips During Calibration	13

Station Maintenance Form

Volume Added or Removed (mL)	-12.00
Error (%)	1.53
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	20.42
Charging Current (mA)	195.00
Battery Voltage Quiet (V)	13.06
Battery Voltage Transmitted (V)	12.94

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	5.00
Watts Reflected	0.50
Standing Wave Ratio	1.9250

Stream Station Maintenance


No calibration form necessary	Check to see if PT is working properly.
-------------------------------	---

Finishing Comments

Final Comments	Everything working well. Received test transmission. Sent test tips
Depart Time	03:13 PM (-6 GMT)
Photos	

Station Maintenance Form

Station Maintenance Form

Location	Dakan Rd
Station_ID	2980
Technician(s)	ZJN
Date	08/25/2021
Time Arrive	10:09 AM (-6 GMT)
GPS Location	
	Lat: 39.3019458 Long: -104.979062
Agency	Douglas County

Station Type

What type of station?	Precipitation
-----------------------	---------------

Precipitation Station Maintenance

Precipitation Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Gage Calibration

Point ID	2980
Tips During Calibration	13

Station Maintenance Form

Volume Added or Removed (mL)	-9.00
Error (%)	1.22
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	20.87
Charging Current (mA)	307.00
Battery Voltage Quiet (V)	12.97
Battery Voltage Transmitted (V)	12.89

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio


Watts Forward	4.00
Watts Reflected	0.00
Standing Wave Ratio	1.0000

Finishing Comments

Final Comments	Everything working well. Tip count reset to 0. Sent and received 2 tips
Depart Time	10:36 AM (-6 GMT)
Photos	

Station Maintenance Form

Station Maintenance Form

Location	East Plum Creek @ HWY 105
Station_ID	3010
Technician(s)	ZJN
Date	04/01/2021
Time Arrive	01:05 PM (-6 GMT)
GPS Location	
	Lat: 39.1888597 Long: -104.9233667
Agency	Douglas County

Station Type

What type of station?	Weather
-----------------------	---------

Stream Station Maintenance

No calibration form necessary	Check to see if PT is working properly.
-------------------------------	---

Weather Station Maintenance

Weather Maintenance

Items Cleaned

Clean Checks	Funnel, Tipping_bucket, Solar_panel
--------------	-------------------------------------

Rain Sensor

Station Maintenance Form

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Point ID	3010
Tips During Calibration	13
Volume Added or Removed (mL)	-5.00
Error (%)	0.80
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	21.37
Charging Current (mA)	2012.00
Battery Voltage Quiet (V)	13.21
Battery Voltage Transmitted (V)	13.10

Sensor Verification

Temperature (°C)	17.00
Wind Speed (mph)	13.94
Temperature (°C)	16.80
Wind Speed (mph)	14.20

Transmitter

Transmitter Checks	Desiccant, Time, Program, Bucket
--------------------	----------------------------------

Radio

Watts Forward	4.25
Watts Reflected	0.25
Standing Wave Ratio	1.6404
Does the station have a stage sensor?	Yes
Is the PT an SDI-12?	Yes

Finishing Comments

Final Comments	Everything working well. Received test transmission.
Depart Time	01:42 PM (-6 GMT)


Station Maintenance Form

Photos



Station Maintenance Form

Station Maintenance Form

Location	Plum Creek @ Hwy 105
Station_ID	3010
Technician(s)	ZJN
Date	06/08/2021
Time Arrive	03:24 PM (-6 GMT)
GPS Location	
	Lat: 39.1887278 Long: -104.9232934
Agency	Douglas County

Station Type

What type of station?	Weather
-----------------------	---------

Stream Station Maintenance

No calibration form necessary	Check to see if PT is working properly.
-------------------------------	---

Weather Station Maintenance

Weather Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Station Maintenance Form

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Point ID	3010
Tips During Calibration	13
Volume Added or Removed (mL)	-1.00
Error (%)	0.37
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	19.60
Charging Current (mA)	1100.00
Battery Voltage Quiet (V)	13.26
Battery Voltage Transmitted (V)	13.15

Sensor Verification

Temperature (°C)	29.50
Wind Speed (mph)	11.50
Temperature (°C)	28.60
Wind Speed (mph)	10.50

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	4.25
Watts Reflected	0.10
Standing Wave Ratio	1.3624
Does the station have a stage sensor?	Yes
Is the PT an SDI-12?	Yes

Finishing Comments

Final Comments	Everything working well. Received test transmission.
Depart Time	04:12 PM (-6 GMT)


Station Maintenance Form

Photos



Station Maintenance Form

Station Maintenance Form

Location	HWY 105
Station_ID	3010
Technician(s)	ZJN
Date	08/25/2021
Time Arrive	10:52 AM (-6 GMT)
GPS Location	
	Lat: 39.1886576 Long: -104.923229
Agency	Douglas County

Station Type

What type of station?	Weather
-----------------------	---------

Weather Station Maintenance

Weather Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Station Maintenance Form

Point ID	3010
Tips During Calibration	12
Volume Added or Removed (mL)	10.00
Error (%)	-0.79
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	20.17
Charging Current (mA)	4650.00
Battery Voltage Quiet (V)	13.57
Battery Voltage Transmitted (V)	13.47

Sensor Verification

Temperature (°C)	25.50
Wind Speed (mph)	8.00
Temperature (°C)	24.50
Wind Speed (mph)	7.20

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	4.50
Watts Reflected	0.10
Standing Wave Ratio	1.3504

Finishing Comments

Final Comments	Everything working well. Received test transmission.
Depart Time	11:28 AM (-6 GMT)

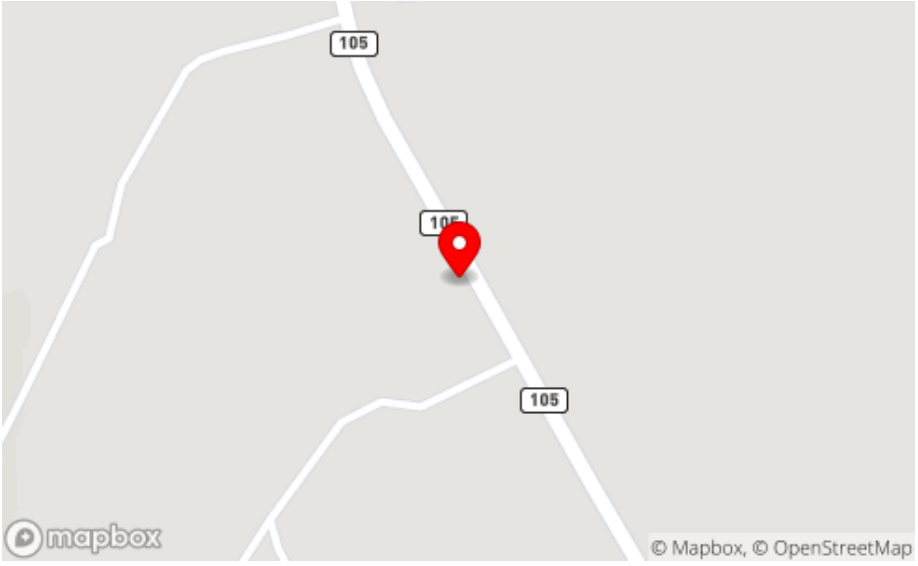
Station Maintenance Form

Photos



Station Maintenance Form

Station Maintenance Form

Location	HWY 105
Station_ID	3010
Technician(s)	ZJN
Date	11/16/2021
Time Arrive	10:16 AM (-7 GMT)
GPS Location	
	Lat: 39.1890541 Long: -104.9236722
Agency	Douglas County

Station Type

What type of station?	Weather
-----------------------	---------

Weather Station Maintenance

Weather Maintenance

Rain Gage Calibration

Error (%)	0.27
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Power System

Regulator Output Voltage (V)	20.59
Charging Current (mA)	1871.00
Battery Voltage Quiet (V)	13.10
Battery Voltage Transmitted (V)	12.93

Sensor Verification

Temperature (°C)	17.40
Wind Speed (mph)	3.90

Station Maintenance Form

Temperature (°C)	17.10
Wind Speed (mph)	3.20

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio


Watts Forward	4.75
Watts Reflected	0.00
Standing Wave Ratio	1.0000

Finishing Comments

Final Comments	Covered tipping bucket and moved pt into winter position. Everything working well. Received test transmission.
Depart Time	10:38 AM (-7 GMT)
Photos	

Station Maintenance Form

Station Maintenance Form

Location	Bingham Lake
Station_ID	3030
Technician(s)	ZJN
Date	03/26/2021
Time Arrive	10:15 AM (-6 GMT)
GPS Location	
	Lat: 39.449407 Long: -104.7407902
Agency	Douglas County

Station Type

What type of station?	Weather
-----------------------	---------

Stream Station Maintenance

No calibration form necessary	Check to see if PT is working properly.
-------------------------------	---

Weather Station Maintenance

Weather Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Station Maintenance Form

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Point ID	3030
Tips During Calibration	13
Volume Added or Removed (mL)	-5.00
Error (%)	0.80
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	20.87
Charging Current (mA)	84.00
Battery Voltage Quiet (V)	14.06
Battery Voltage Transmitted (V)	13.94

Sensor Verification

Temperature (°C)	6.30
Relative Humidity (%)	48.80
Barometric Pressure (mBar)	800.00
Wind Speed (mph)	1.70
Temperature (°C)	6.20
Relative Humidity (%)	55.50
Barometric Pressure (mBar)	804.60
Wind Speed (mph)	2.50

Transmitter

Transmitter Checks	Bucket, Time, Program, Desiccant
--------------------	----------------------------------

Radio

Watts Forward	4.50
Watts Reflected	0.00
Standing Wave Ratio	1.0000
Does the station have a stage sensor?	No

Finishing Comments

Final Comments	Everything working well. Received test transmission.
Depart Time	10:51 AM (-6 GMT)

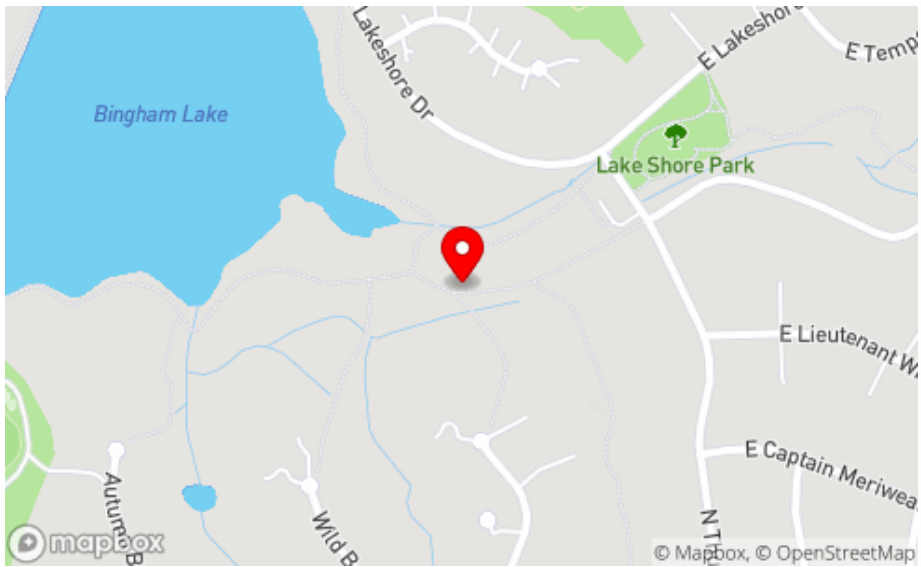
Station Maintenance Form

Photos



Station Maintenance Form

Station Maintenance Form

Location	Bingham Lake Park
Station_ID	3030
Technician(s)	ZJN
Date	11/17/2021
Time Arrive	08:22 AM (-7 GMT)
GPS Location	
	Lat: 39.4493438 Long: -104.7408575
Agency	Douglas County

Station Type

What type of station?	Weather
-----------------------	---------

Weather Station Maintenance

Weather Maintenance

Items Cleaned

Clean Checks	Solar_panel
--------------	-------------

Rain Gage Calibration

Error (%)	0.27
-----------	------

Power System

Regulator Output Voltage (V)	14.91
Charging Current (mA)	20.00
Battery Voltage Quiet (V)	12.75
Battery Voltage Transmitted (V)	12.65

Sensor Verification

Station Maintenance Form

Temperature (°C)	-4.60
Relative Humidity (%)	72.90
Wind Speed (mph)	1.20
Temperature (°C)	-3.00
Relative Humidity (%)	67.00
Barometric Pressure (mBar)	816.90
Wind Speed (mph)	1.00


Transmitter

Transmitter Checks	Desiccant, Program, Time
--------------------	--------------------------

Radio


Watts Forward	4.50
Watts Reflected	0.00
Standing Wave Ratio	1.0000

Finishing Comments

Final Comments	Covered tipping bucket for winter. Everything working well. Received test transmission.
Depart Time	08:44 AM (-7 GMT)
Photos	

Station Maintenance Form

Station Maintenance Form

Location	Bingham Lake
Station_ID	3030
Technician(s)	ZJN
Date	06/16/2021
Time Arrive	10:52 AM (-6 GMT)
GPS Location	
	Lat: 39.4494073 Long: -104.7408041
Agency	Douglas County

Station Type

What type of station?	Weather
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Weather Station Maintenance

Weather Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
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Rain Gage Calibration

Station Maintenance Form

Point ID	3030
Tips During Calibration	13
Volume Added or Removed (mL)	-6.00
Error (%)	0.90
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	13.73
Charging Current (mA)	183.00
Battery Voltage Quiet (V)	13.59
Battery Voltage Transmitted (V)	13.46

Sensor Verification

Temperature (°C)	33.50
Relative Humidity (%)	14.80
Barometric Pressure (mBar)	813.00
Wind Speed (mph)	2.00
Temperature (°C)	32.20
Relative Humidity (%)	19.40
Barometric Pressure (mBar)	817.60
Wind Speed (mph)	3.00

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	5.00
Watts Reflected	0.25
Standing Wave Ratio	1.5760

Finishing Comments

Final Comments	Everything working well. Received test transmission.
Depart Time	11:15 AM (-6 GMT)


Station Maintenance Form

Photos



Station Maintenance Form

Station Maintenance Form

Location	Bingham Lake
Station_ID	3030
Technician(s)	ZJN
Date	08/26/2021
Time Arrive	01:46 PM (-6 GMT)
GPS Location	
	Lat: 39.4493519 Long: -104.7408352
Agency	Douglas County

Station Type

What type of station?	Weather
-----------------------	---------

Weather Station Maintenance

Weather Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Station Maintenance Form

Point ID	3030
Tips During Calibration	13
Volume Added or Removed (mL)	-6.00
Error (%)	0.90
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	20.29
Charging Current (mA)	69.00
Battery Voltage Quiet (V)	13.45
Battery Voltage Transmitted (V)	13.35

Sensor Verification

Temperature (°C)	23.00
Relative Humidity (%)	45.60
Barometric Pressure (mBar)	813.00
Wind Speed (mph)	10.00
Temperature (°C)	23.60
Relative Humidity (%)	44.70
Barometric Pressure (mBar)	817.40
Wind Speed (mph)	9.20

Transmitter

Transmitter Checks	Desiccant, Program, Bucket, Time
--------------------	----------------------------------

Radio

Watts Forward	5.00
Watts Reflected	0.00
Standing Wave Ratio	1.0000

Finishing Comments

Final Comments	Everything working well. Received test transmission.
Depart Time	02:24 PM (-6 GMT)


Station Maintenance Form

Photos



Station Maintenance Form

Station Maintenance Form

Location	West Creek Repeater
Station_ID	6001
Technician(s)	ZJN
Date	08/24/2021
Time Arrive	02:07 PM (-6 GMT)
GPS Location	
	Lat: 39.1744613 Long: -105.0340197
Agency	Douglas County

Station Type

What type of station?	Base Station
-----------------------	--------------

Base Station Maintenance

Base Station Maintenance

Power System

Battery Voltage Quiet (V)	13.18
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Radio

Watts Forward	4.50
Watts Reflected	0.00

Station Maintenance Form

Standing Wave Ratio	1.0000
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Finishing Comments

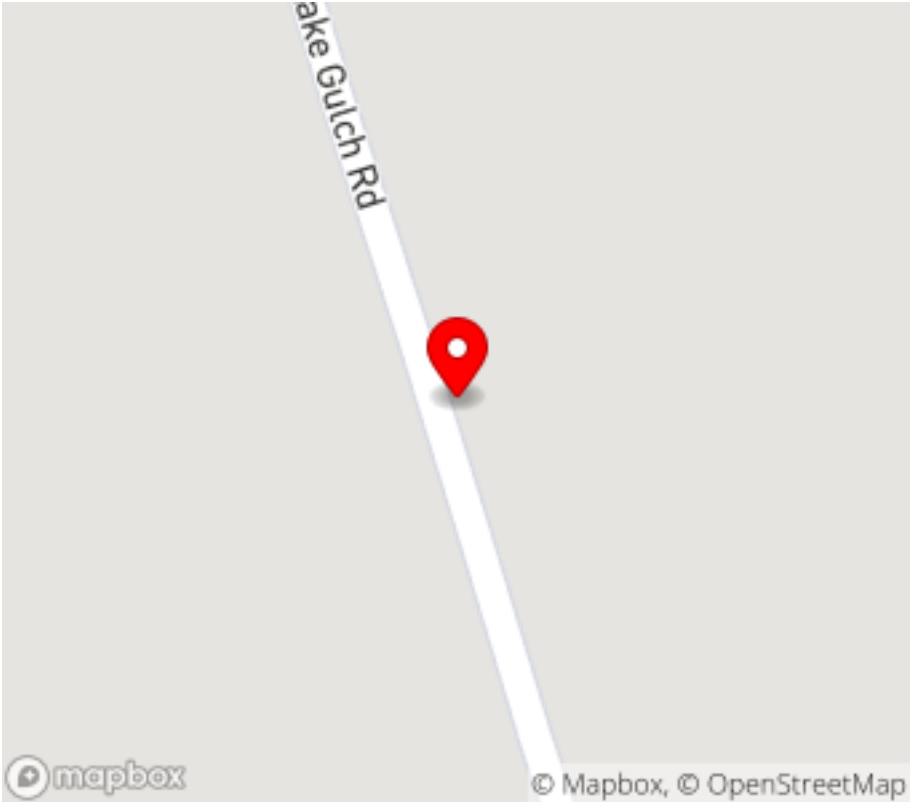
Final Comments	Everything working well. Decoded alert and alert2 stations
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Depart Time	02:30 PM (-6 GMT)
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Photos	
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Station Maintenance Form

Station Maintenance Form

Location	Upper Sellers Gulch
Station_ID	10014
Technician(s)	ZJN, JDP
Date	03/25/2021
Time Arrive	03:00 PM (-6 GMT)
GPS Location	
	Lat: 39.322838 Long: -104.8196694
Agency	Douglas County

Station Type

What type of station?	Precipitation
-----------------------	---------------

Precipitation Station Maintenance

Precipitation Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Gage Calibration

Point ID	0
Tips During Calibration	13

Station Maintenance Form

Volume Added or Removed (mL)	-11.00
Error (%)	1.43
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	21.20
Charging Current (mA)	148.00
Battery Voltage Quiet (V)	13.87
Battery Voltage Transmitted (V)	13.77

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	5.00
Watts Reflected	0.25
Standing Wave Ratio	1.5760

Stream Station Maintenance

No calibration form necessary	Check to see if PT is working properly.
-------------------------------	---

Finishing Comments

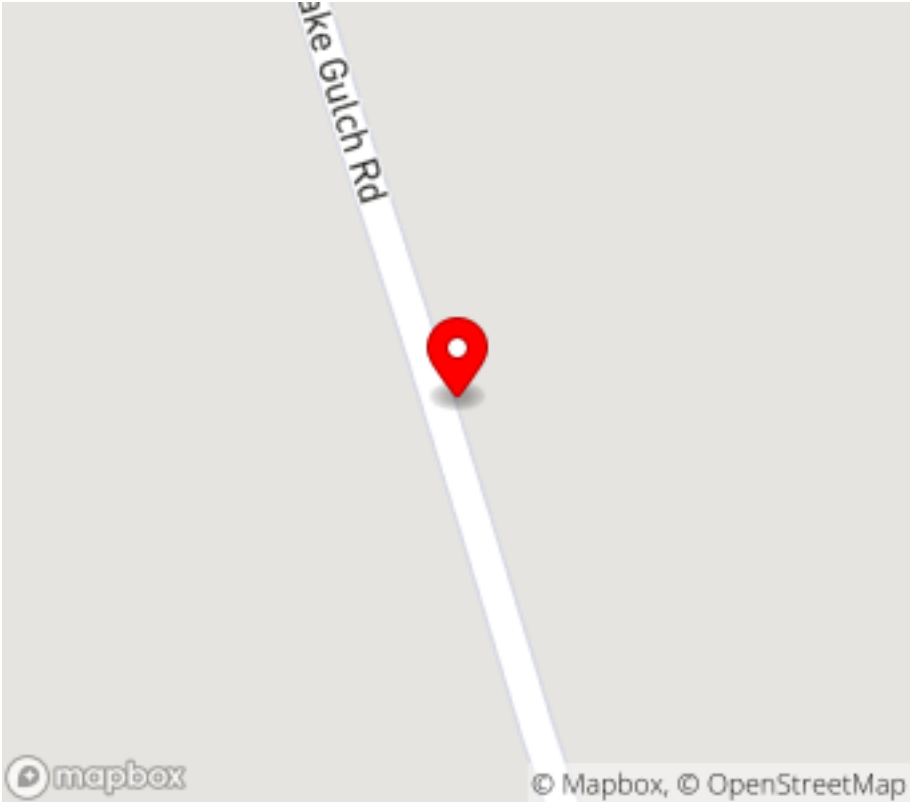
Final Comments	Replaced n to uhf adapter near antenna. Had no connection causing poor SWR. Retested. Everything working well. Received test transmission
Depart Time	04:15 PM (-6 GMT)
Photos	

Station Maintenance Form



Station Repair Form

Station Maintenance Form

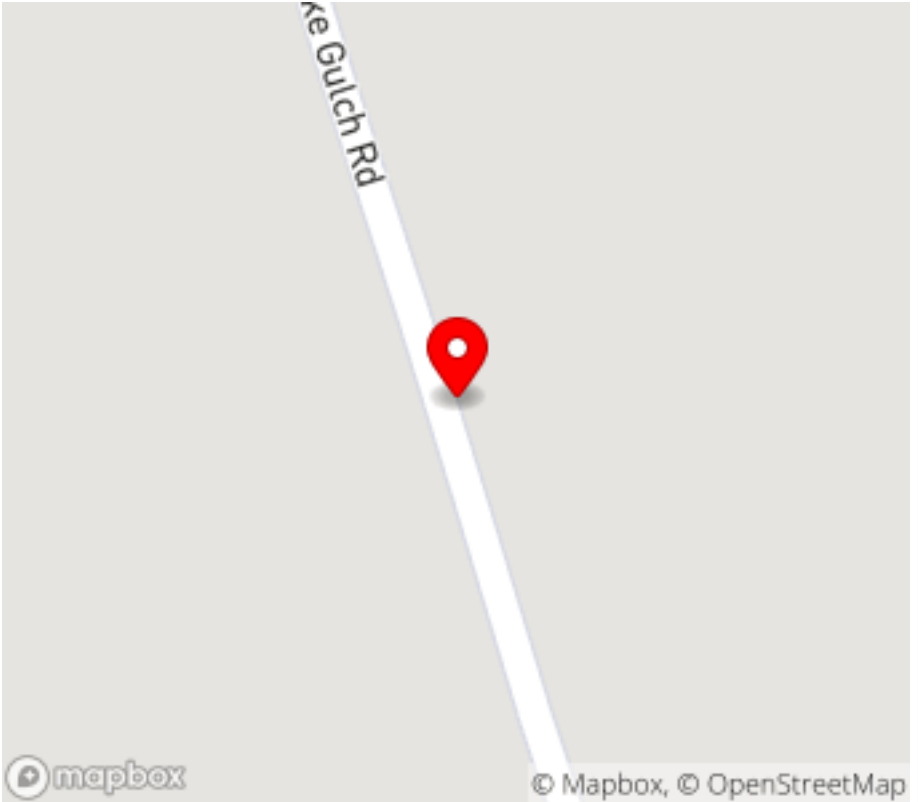
Location	Upper Sellers Gulch
Station_ID	10014
Technician(s)	ZJN
Date	04/07/2021
Time Arrive	11:27 AM (-6 GMT)
GPS Location	
	Lat: 39.322819 Long: -104.8196782
Agency	Douglas County

Repair Comments

Comments	Swapped alert2 encoder board with 10015. Took serial number 1 out and replaced with 5 to monitor transmissions quality to see if a2 board is the issue.
Depart Time	12:15 PM (-6 GMT)

Station Repair Form

Station Maintenance Form

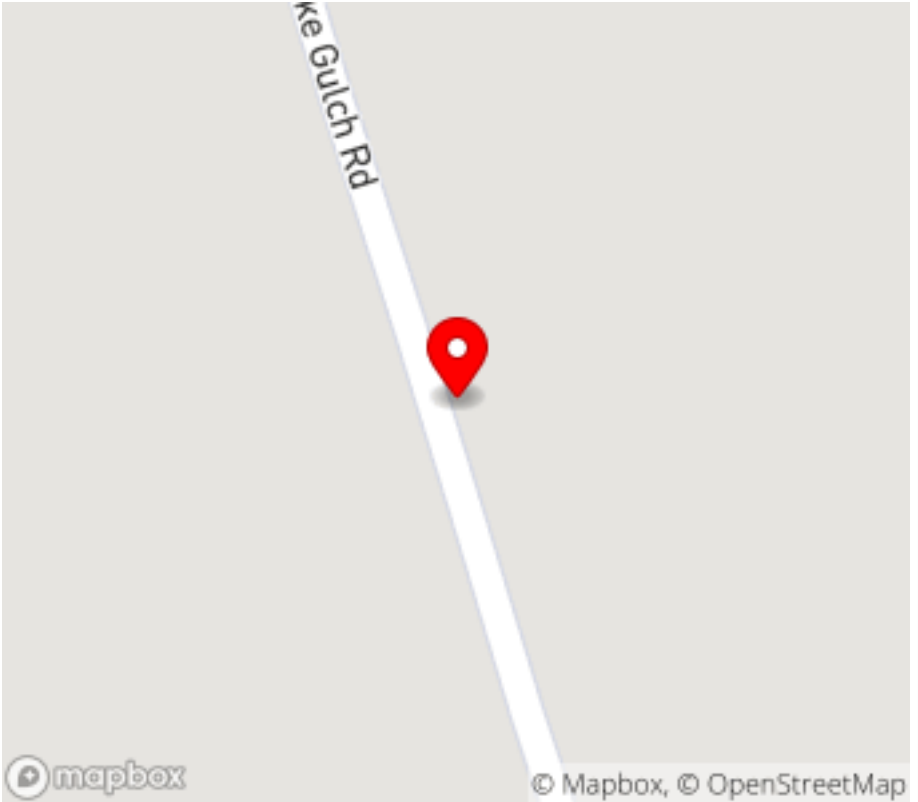
Location	Upper Sellers
Station_ID	10014
Technician(s)	ZJN
Date	05/17/2021
Time Arrive	01:55 PM (-6 GMT)
GPS Location	
	Lat: 39.322768 Long: -104.8196678
Agency	Douglas County

Repair Comments

Comments	Set battery and precip to transmit every 5 min to test west creek repeater. Will change back after
Depart Time	02:09 PM (-6 GMT)

Station Repair Form

Station Maintenance Form

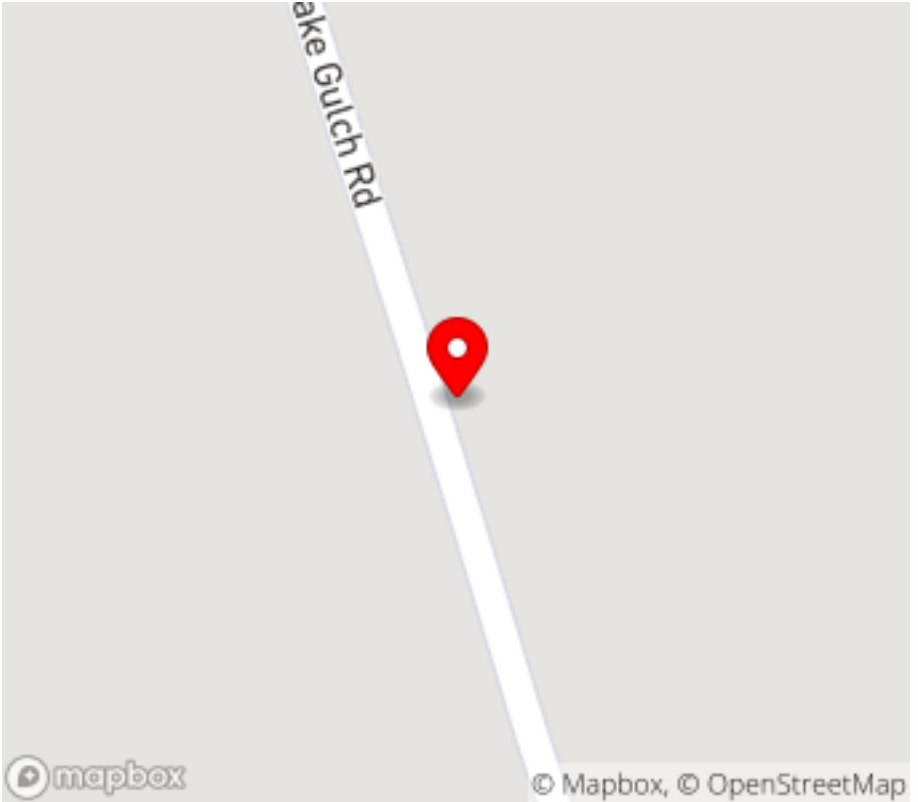
Location	Upper Sellers Gulch
Station_ID	10014
Technician(s)	ZJN
Date	05/19/2021
Time Arrive	12:54 PM (-6 GMT)
GPS Location	
	Lat: 39.3227752 Long: -104.8196406
Agency	Douglas County

Repair Comments

Comments	Set rain and battery back to reporting every hour
Depart Time	01:00 PM (-6 GMT)

Station Maintenance Form

Station Maintenance Form

Location	Upper Sellers Gulch
Station_ID	10014
Technician(s)	ZJN
Date	07/29/2021
Time Arrive	09:45 AM (-6 GMT)
GPS Location	
	Lat: 39.322833 Long: -104.819656
Agency	Douglas County

Station Type

What type of station?	Precipitation
-----------------------	---------------

Finishing Comments

Final Comments	Sent and received 2 test tips
Depart Time	09:50 AM (-6 GMT)


Station Maintenance Form

Photos



Station Maintenance Form

Station Maintenance Form

Location	Sellers Gulch @ Haystack
Station_ID	10015
Technician(s)	ZJN
Date	04/01/2021
Time Arrive	02:26 PM (-6 GMT)
GPS Location	
	Lat: 39.3531843 Long: -104.8385949
Agency	Douglas County

Station Type

What type of station?	Stream
-----------------------	--------

Stream Station Maintenance

Stream Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
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Rain Gage Calibration

Station Maintenance Form

Point ID	0
Tips During Calibration	12
Volume Added or Removed (mL)	12.00
Error (%)	-1.00
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	14.35
Charging Current (mA)	357.00
Battery Voltage Quiet (V)	12.41
Battery Voltage Transmitted (V)	12.26

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	4.00
Watts Reflected	0.25
Standing Wave Ratio	1.6667
Is the PT an SDI-12?	No
No calibration form necessary	Check to see if PT is working properly.

5096 ALERT2 PT Calibration


5096 ALERT2 PT Calibration

REPROGRAM TRANSMITTER TO BASE VALUES	(25.5,1023,0)
How many different values are being tested?	7
Stage 1	12.03
Raw Value 1	492.00
Stage 2	9.75
Raw Value 2	401.00
Stage 3	8.10
Raw Value 3	336.00
Stage 4	5.73
Raw Value 4	241.00
Stage 5	4.04
Raw Value 5	173.00

Station Maintenance Form


Stage 6	2.04
Raw Value 6	93.00
Stage 7	0.00
Raw Value 7	10.00
Multiplier	25.54934
Divisor	1023
Offset	-0.27374
NOTICE	If offset is greater than 0.5ft adjust ZERO screw in signal conditioning box.

Finishing Comments

Final Comments	Everything working well. Received test transmission.
Depart Time	03:10 PM (-6 GMT)
Photos	

Station Repair Form

Station Maintenance Form

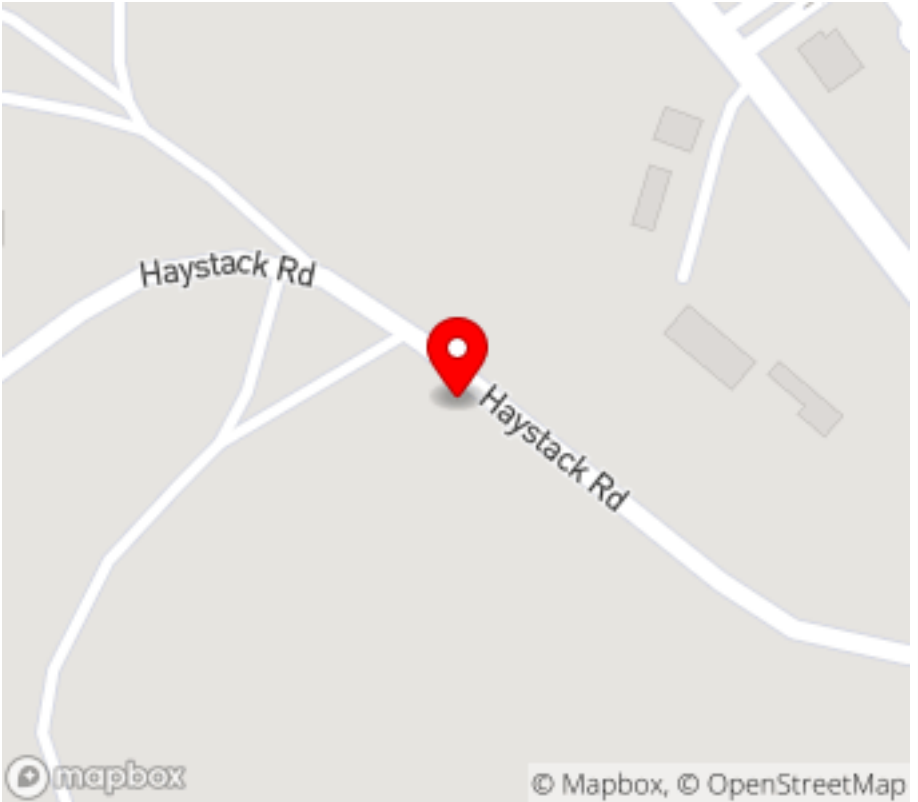
Location	Sellers Gulch @ Haystack
Station_ID	10015
Technician(s)	ZJN
Date	04/07/2021
Time Arrive	10:46 AM (-6 GMT)
GPS Location	
	Lat: 39.3532026 Long: -104.8386238
Agency	Douglas County

Repair Comments

Comments	Swapped alert2 encoder board with upper sellers to determine if board is having issues. Serial number 1 now in Haystack number 5 in upper sellers for now.
Depart Time	11:17 AM (-6 GMT)

Station Repair Form

Station Maintenance Form


Location	Sellers Gulch @ Haystack
Station_ID	10015
Technician(s)	ZJN
Date	04/28/2021
Time Arrive	01:15 PM (-6 GMT)
GPS Location	
	Lat: 39.3531837 Long: -104.8386348
Agency	Douglas County

Repair Comments

Comments	Needs a new battery. Reading 12.00 volts on field tech. Error light was on 5096 when I arrived
Depart Time	01:45 PM (-6 GMT)

Station Repair Form

Station Maintenance Form

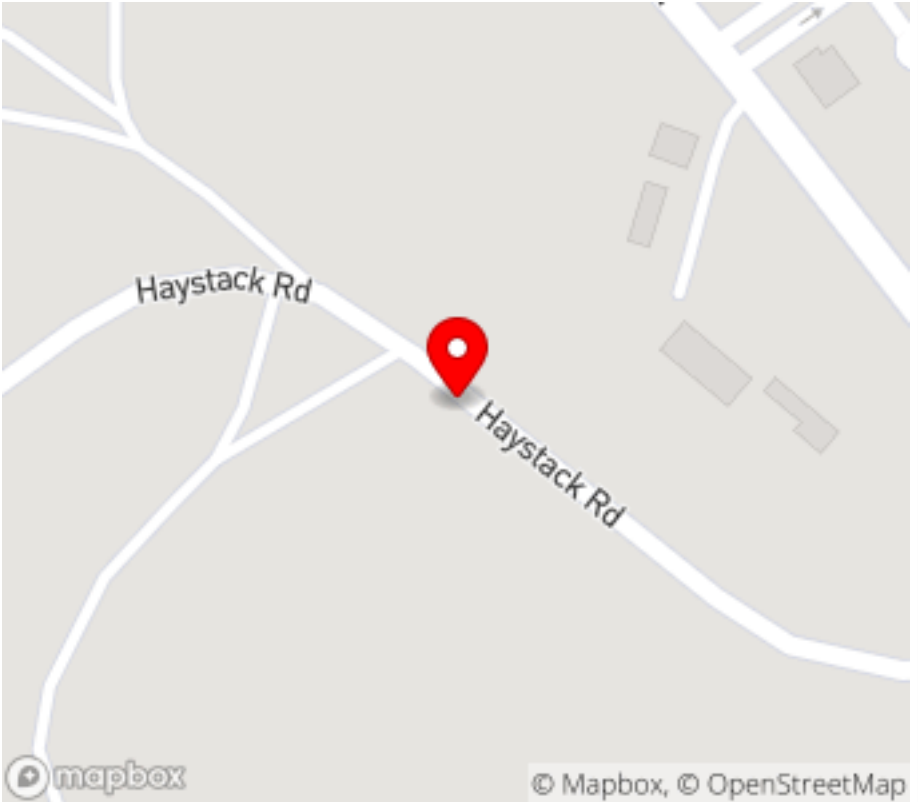
Location	Sellers Gulch @ Haystack
Station_ID	10015
Technician(s)	ZJN
Date	04/29/2021
Time Arrive	09:47 AM (-6 GMT)
GPS Location	
	Lat: 39.3531983 Long: -104.8386403
Agency	Douglas County

Repair Comments

Comments	Replaced dead battery with a new battery. Battery at 13.07 volts. Waited for GPS lock. Received test transmission.
Depart Time	10:39 AM (-6 GMT)
Photos	

Station Maintenance Form

Station Maintenance Form

Location	Sellers Gulch @ Haystack
Station_ID	10015
Technician(s)	ZJN
Date	06/09/2021
Time Arrive	03:18 PM (-6 GMT)
GPS Location	
	Lat: 39.3532342 Long: -104.8386194
Agency	Douglas County

Station Type

What type of station?	Stream
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Stream Station Maintenance

Stream Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
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Rain Gage Calibration

Station Maintenance Form

Point ID	0
Tips During Calibration	13
Volume Added or Removed (mL)	-13.00
Error (%)	1.64
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	14.09
Charging Current (mA)	80.00
Battery Voltage Quiet (V)	13.64
Battery Voltage Transmitted (V)	13.57

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	4.50
Watts Reflected	0.25
Standing Wave Ratio	1.6168
Is the PT an SDI-12?	No
No calibration form necessary	Check to see if PT is working properly.

5096 ALERT2 PT Calibration

5096 ALERT2 PT Calibration

REPROGRAM TRANSMITTER TO BASE VALUES	(25.5,1023,0)
How many different values are being tested?	7
Stage 1	12.16
Raw Value 1	495.00
Stage 2	10.12
Raw Value 2	416.00
Stage 3	8.13
Raw Value 3	337.00
Stage 4	6.19
Raw Value 4	260.00
Stage 5	4.16
Raw Value 5	180.00

Station Maintenance Form


Stage 6	2.06
Raw Value 6	96.00
Stage 7	0.00
Raw Value 7	10.00
Multiplier	25.69357
Divisor	1023
Offset	-0.31970
NOTICE	If offset is greater than 0.5ft adjust ZERO screw in signal conditioning box.

Finishing Comments

Final Comments	Everything working well. Received test transmission.
Depart Time	03:59 PM (-6 GMT)
Photos	

Station Maintenance Form

Station Maintenance Form

Location	Sellers Gulch @ Haystack
Station_ID	10015
Technician(s)	ZJN
Date	08/26/2021
Time Arrive	10:55 AM (-6 GMT)
GPS Location	
	Lat: 39.3532039 Long: -104.8385992
Agency	Douglas County

Station Type

What type of station?	Stream
-----------------------	--------

Stream Station Maintenance

Stream Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
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Rain Gage Calibration

Station Maintenance Form

Point ID	0
Tips During Calibration	13
Volume Added or Removed (mL)	-7.00
Error (%)	1.01
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	14.14
Charging Current (mA)	269.00
Battery Voltage Quiet (V)	13.76
Battery Voltage Transmitted (V)	13.67

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	4.00
Watts Reflected	0.10
Standing Wave Ratio	1.3756

5096 ALERT2 PT Calibration

5096 ALERT2 PT Calibration

REPROGRAM TRANSMITTER TO BASE VALUES	(25.5,1023,0)
How many different values are being tested?	7
Stage 1	11.68
Raw Value 1	470.00
Stage 2	10.09
Raw Value 2	406.00
Stage 3	8.17
Raw Value 3	332.00
Stage 4	6.02
Raw Value 4	247.00
Stage 5	3.40
Raw Value 5	143.00
Stage 6	2.07
Raw Value 6	91.00

Station Maintenance Form

Stage 7	0.00
Raw Value 7	9.00
Multiplier	25.94570
Divisor	1023
Offset	-0.23361
NOTICE	If offset is greater than 0.5ft adjust ZERO screw in signal conditioning box.


Finishing Comments

Final Comments	Everything working well. Received test transmission.
Depart Time	11:35 AM (-6 GMT)
Photos	



Station Maintenance Form

Station Maintenance Form

Location	Plum Creek @ Sedalia
Station_ID	10029
Technician(s)	ZJN
Date	03/24/2021
Time Arrive	11:20 AM (-6 GMT)
GPS Location	
	Lat: 39.4385907 Long: -104.9822035
Agency	Douglas County

Station Type

What type of station?	Precipitation
-----------------------	---------------

Precipitation Station Maintenance

Precipitation Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Gage Calibration

Point ID	0
Tips During Calibration	12

Station Maintenance Form

Volume Added or Removed (mL)	5.00
Error (%)	-0.26
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	21.17
Charging Current (mA)	884.00
Battery Voltage Quiet (V)	12.75
Battery Voltage Transmitted (V)	12.64

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	4.75
Watts Reflected	0.25
Standing Wave Ratio	1.5954

Stream Station Maintenance

No calibration form necessary	Check to see if PT is working properly.
-------------------------------	---

Finishing Comments


Final Comments	SDI snoop reading 3.76. Everything working well. Received test transmission.
Depart Time	12:08 PM (-6 GMT)

Photos



Station Maintenance Form

Station Maintenance Form

Location	Plum Creek @ Sedalia
Station_ID	10029
Technician(s)	ZJN
Date	06/16/2021
Time Arrive	07:23 AM (-6 GMT)
GPS Location	
	Lat: 39.4385761 Long: -104.9816912
Agency	Douglas County

Station Type

What type of station?	Precipitation
-----------------------	---------------

Precipitation Station Maintenance

Precipitation Maintenance

Items Cleaned

Clean Checks	Funnel, Tipping_bucket, Solar_panel
--------------	-------------------------------------

Rain Gage Calibration

Point ID	0
Tips During Calibration	13

Station Maintenance Form

Volume Added or Removed (mL)	-2.00
Error (%)	0.48
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	20.24
Charging Current (mA)	105.00
Battery Voltage Quiet (V)	13.87
Battery Voltage Transmitted (V)	13.76


Transmitter

Transmitter Checks	Desiccant, Program, Bucket, Time
--------------------	----------------------------------

Radio


Watts Forward	4.25
Watts Reflected	0.00
Standing Wave Ratio	1.0000

Finishing Comments

Final Comments	Everything working well. Received test transmission.
Depart Time	08:04 AM (-6 GMT)
Photos	

Station Maintenance Form

Station Maintenance Form

Location	Plum Creek @ Sedalia
Station_ID	10029
Technician(s)	ZJN
Date	08/25/2021
Time Arrive	08:31 AM (-6 GMT)
GPS Location	
	Lat: 39.4385833 Long: -104.982438
Agency	Douglas County

Station Type

What type of station?	Precipitation
-----------------------	---------------

Precipitation Station Maintenance

Precipitation Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Gage Calibration

Point ID	0
Tips During Calibration	13

Station Maintenance Form

Volume Added or Removed (mL)	-1.00
Error (%)	0.37
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	14.17
Charging Current (mA)	274.00
Battery Voltage Quiet (V)	13.84
Battery Voltage Transmitted (V)	13.72

Transmitter

Transmitter Checks	Desiccant, Time, Bucket, Program
--------------------	----------------------------------

Radio

Watts Forward	3.75
Watts Reflected	0.00
Standing Wave Ratio	1.0000

Stream Station Maintenance

Stream Maintenance

Items Cleaned

Clean Checks	Tipping_bucket, Solar_panel, Funnel
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Rain Gage Calibration

Error (%)	0.27
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Radio

Standing Wave Ratio	1.0000
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Finishing Comments

Final Comments	Stage at 3.51 Everything working well. Received test transmissions
Depart Time	09:04 AM (-6 GMT)


Station Maintenance Form

Photos



Station Maintenance Form

Station Maintenance Form

Location	West Creek Weather
Station_ID	10037
Technician(s)	ZJN
Date	08/24/2021
Time Arrive	12:13 PM (-6 GMT)
GPS Location	
	Lat: 39.1742241 Long: -105.0342176
Agency	Douglas County

Station Type

What type of station?	Weather
-----------------------	---------

Weather Station Maintenance

Weather Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
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Rain Gage Calibration

Station Maintenance Form

Point ID	0
Tips During Calibration	13
Volume Added or Removed (mL)	-14.00
Error (%)	1.74
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	13.87
Charging Current (mA)	106.00
Battery Voltage Quiet (V)	13.14
Battery Voltage Transmitted (V)	13.04

Sensor Verification

Temperature (°C)	25.40
Relative Humidity (%)	13.00
Wind Speed (mph)	3.00
Temperature (°C)	26.50
Relative Humidity (%)	13.40
Barometric Pressure (mBar)	731.30
Wind Speed (mph)	3.50

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	5.00
Watts Reflected	0.10
Standing Wave Ratio	1.3294

Finishing Comments

Items Replaced	alert 2 encoder board
Final Comments	Replaced alert2 encoder board with a WET spare. Station time was 10 years in the past when I arrived and lights on encoder board were not on. Will monitor to see if the new board fixes the transmission issue. Tightened and reapplied tape to GPS antenna connector. Everything else working well. Received test transmission.
Depart Time	02:06 PM (-6 GMT)


Station Maintenance Form

Photos



Station Maintenance Form

Station Maintenance Form

Location	West Creek WX
Station_ID	10037
Technician(s)	ZJN
Date	11/15/2021
Time Arrive	12:20 PM (-7 GMT)
GPS Location	
	Lat: 39.174175 Long: -105.0341908
Agency	Douglas County

Station Type

What type of station?	Weather
-----------------------	---------

Finishing Comments

Final Comments	Removed station to be sent to hydrolynx for a diagnosis of why transmitter is reporting in the past. Covered tipping bucket
Depart Time	12:32 PM (-7 GMT)


Station Maintenance Form

Photos



Station Maintenance Form

Station Maintenance Form

Location	Fire Station #47
Station_ID	10039
Technician(s)	ZJN
Date	03/23/2021
Time Arrive	01:30 PM (-6 GMT)
GPS Location	
	Lat: 39.531467 Long: -104.6999268
Agency	Douglas County

Station Type

What type of station?	Precipitation
-----------------------	---------------

Precipitation Station Maintenance

Precipitation Maintenance

Items Cleaned

Clean Checks	Funnel, Tipping_bucket, Solar_panel
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Rain Gage Calibration

Point ID	0
Tips During Calibration	12

Station Maintenance Form

Volume Added or Removed (mL)	3.00
Error (%)	-0.05
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	14.63
Charging Current (mA)	89.00
Battery Voltage Quiet (V)	12.74
Battery Voltage Transmitted (V)	12.66

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------


Radio

Watts Forward	4.50
Watts Reflected	0.50
Standing Wave Ratio	2.0000

Stream Station Maintenance


No calibration form necessary	Check to see if PT is working properly.
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Finishing Comments

Final Comments	Everything working well. Received test transmission.
Depart Time	02:13 PM (-6 GMT)
Photos	

Station Maintenance Form

Station Maintenance Form

Location	Fire Station 47
Station_ID	10039
Technician(s)	ZJN
Date	07/29/2021
Time Arrive	12:20 PM (-6 GMT)
GPS Location	
	Lat: 39.531423 Long: -104.699921
Agency	Douglas County

Station Type

What type of station?	Precipitation
-----------------------	---------------

Precipitation Station Maintenance

Precipitation Maintenance

Rain Gage Calibration

Error (%)	0.27
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Radio

Standing Wave Ratio	1.0000
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Finishing Comments

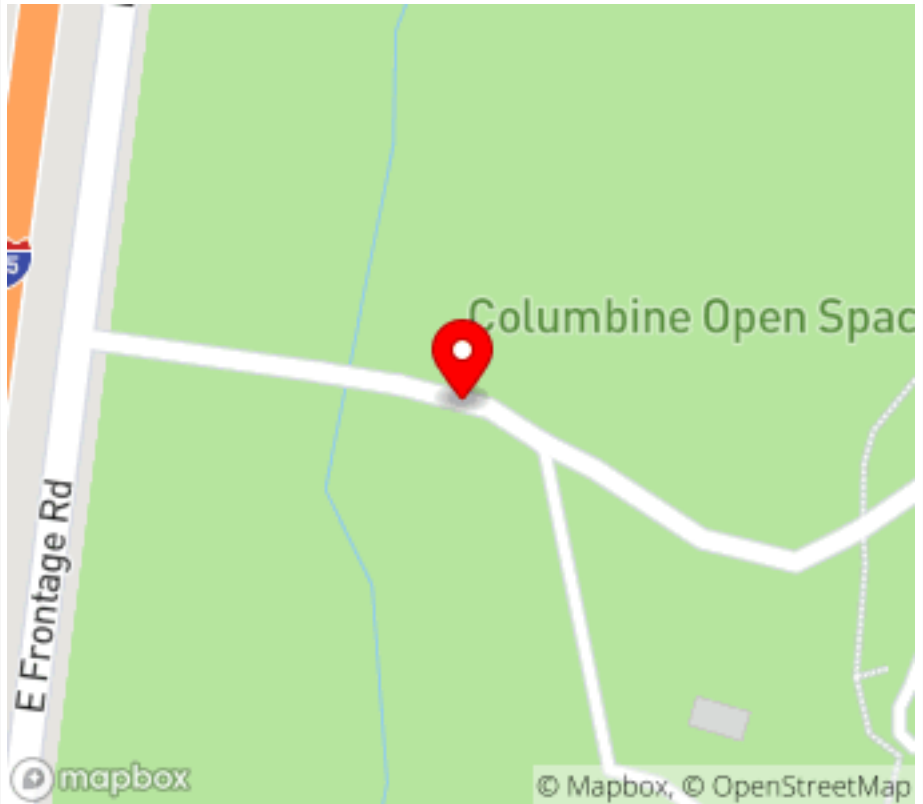
Station Maintenance Form

Final Comments	Sent and received 2 test transmission
Depart Time	12:25 PM (-6 GMT)
Photos	



Station Maintenance Form

Station Maintenance Form

Location	East Plum Creek @ Columbine Open Space
Station_ID	10044
Technician(s)	ZJN
Date	03/26/2021
Time Arrive	08:10 AM (-6 GMT)
GPS Location	
	Lat: 39.2827272 Long: -104.8947598
Agency	Douglas County

Station Type

What type of station?	Stream
-----------------------	--------

Stream Station Maintenance

Stream Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Station Maintenance Form

Point ID	0
Tips During Calibration	12
Volume Added or Removed (mL)	7.00
Error (%)	-0.47
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	21.80
Charging Current (mA)	282.00
Battery Voltage Quiet (V)	12.55
Battery Voltage Transmitted (V)	12.40

Transmitter

Transmitter Checks	Desiccant, Program, Bucket, Time
--------------------	----------------------------------

Radio

Watts Forward	4.00
Watts Reflected	0.10
Standing Wave Ratio	1.3756
No calibration form necessary	Check to see if PT is working properly.

Radar Calibration

Section 1

Calibration Time	08:45 AM (-6 GMT)
Wire-Weight Reading (ft)	2.90
Radar Reading (ft)	2.92

Finishing Comments

Final Comments	Everything working well. Received test transmissions.
Depart Time	09:17 AM (-6 GMT)


Station Maintenance Form

Photos



Station Repair Form

Station Maintenance Form

Location	Columbine Open Space
Station_ID	10044
Technician(s)	ZJN
Date	05/12/2021
Time Arrive	11:56 AM (-6 GMT)
GPS Location	
	Lat: 39.2827814 Long: -104.894702
Agency	Douglas County

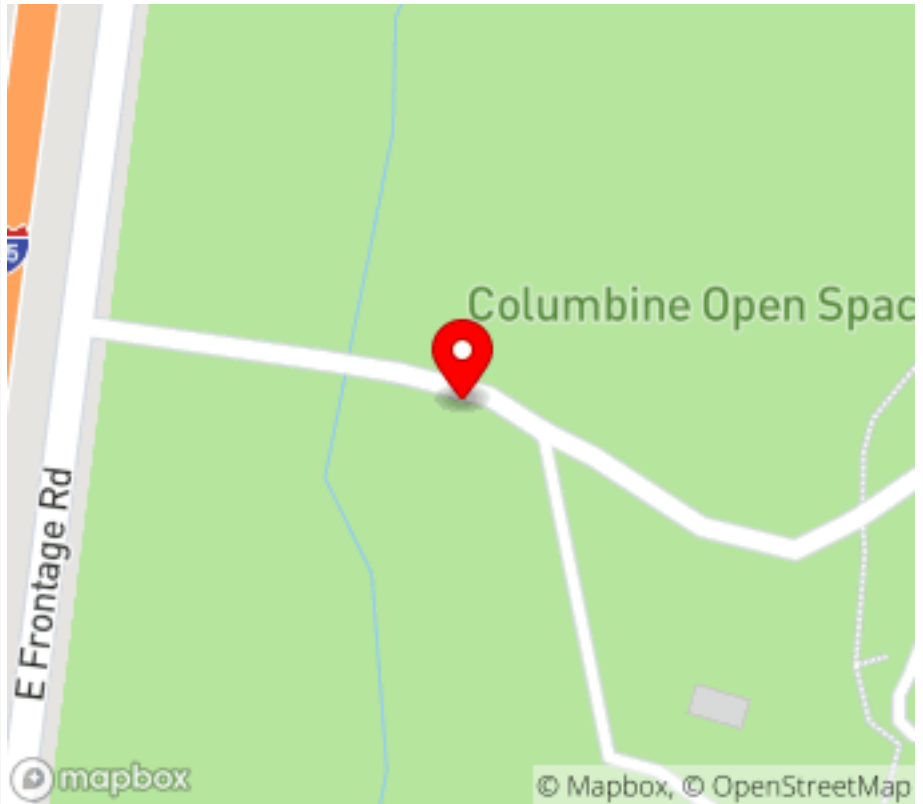
Repair Comments

Comments	<p>Changed radar script file (CS475-R) to ignore error readings from radar to prevent false data being sent to base.</p> <p>Not getting test transmissions. Probably need new radio</p>
Depart Time	02:56 PM (-6 GMT)



Station Maintenance Form

Station Maintenance Form

Location	East Plum Creek @ Columbine
Station_ID	10044
Technician(s)	ZJN
Date	06/08/2021
Time Arrive	04:30 PM (-6 GMT)
GPS Location	
	Lat: 39.2826896 Long: -104.894758
Agency	Douglas County

Station Type

What type of station?	Stream
-----------------------	--------

Stream Station Maintenance

Stream Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Station Maintenance Form

Point ID	0
Tips During Calibration	13
Volume Added or Removed (mL)	-14.00
Error (%)	1.74
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	14.90
Charging Current (mA)	299.00
Battery Voltage Quiet (V)	13.13
Battery Voltage Transmitted (V)	13.03

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	5.00
Watts Reflected	0.25
Standing Wave Ratio	1.5760
No calibration form necessary	Check to see if PT is working properly.

Radar Calibration

Section 1

Calibration Time	04:45 PM (-6 GMT)
Wire-Weight Reading (ft)	2.97
Radar Reading (ft)	2.97

Finishing Comments

Final Comments	Everything working well. Received test transmission
Depart Time	05:02 PM (-6 GMT)

Station Maintenance Form


Photos





Station Maintenance Form

Station Maintenance Form

Location	Columbine Open Space
Station_ID	10044
Technician(s)	ZJN
Date	08/26/2021
Time Arrive	09:57 AM (-6 GMT)
GPS Location	
	Lat: 39.2827119 Long: -104.8947242
Agency	Douglas County

Station Type

What type of station?	Stream
-----------------------	--------

Stream Station Maintenance

Stream Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Station Maintenance Form

Point ID	0
Tips During Calibration	13
Volume Added or Removed (mL)	-5.00
Error (%)	0.80
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	13.96
Charging Current (mA)	476.00
Battery Voltage Quiet (V)	13.13
Battery Voltage Transmitted (V)	13.04

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	4.50
Watts Reflected	0.00
Standing Wave Ratio	1.0000

Radar Calibration

Section 1

Calibration Time	09:58 AM (-6 GMT)
Wire-Weight Reading (ft)	2.67
Radar Reading (ft)	2.67

Finishing Comments

Final Comments	<p>Changed tipping bucket programming to increment only from increment on low and removed the 0.5 multiplier so raw and scaled match now.</p> <p>Everything working well. Received test transmission.</p>
Depart Time	10:37 AM (-6 GMT)


Station Maintenance Form

Photos



Station Maintenance Form

Station Maintenance Form

Location	East/West Trailhead
Station_ID	10045
Technician(s)	ZJN
Date	03/23/2021
Time Arrive	02:47 PM (-6 GMT)
GPS Location	
	Lat: 39.504113 Long: -104.9411372
Agency	Douglas County

Station Type

What type of station?	Precipitation
-----------------------	---------------

Precipitation Station Maintenance

Precipitation Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Gage Calibration

Point ID	0
Tips During Calibration	12

Station Maintenance Form

Volume Added or Removed (mL)	9.00
Error (%)	-0.68
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	21.89
Charging Current (mA)	85.00
Battery Voltage Quiet (V)	12.60
Battery Voltage Transmitted (V)	12.42

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------


Radio

Watts Forward	3.25
Watts Reflected	0.25
Standing Wave Ratio	1.7676

Stream Station Maintenance


No calibration form necessary	Check to see if PT is working properly.
-------------------------------	---

Finishing Comments

Final Comments	Everything working well. Received test transmission.
Depart Time	03:23 PM (-6 GMT)
Photos	

Station Maintenance Form

Station Maintenance Form

Location	East/West Trailhead
Station_ID	10045
Technician(s)	ZJN
Date	07/29/2021
Time Arrive	08:44 AM (-6 GMT)
GPS Location	 <p>© Mapbox, © OpenStreetMap</p>
	Lat: 39.504029 Long: -104.941199
Agency	Douglas County

Station Type

What type of station?	Precipitation
-----------------------	---------------

Finishing Comments

Final Comments	Sent and received 2 tips
Depart Time	07:52 AM (-6 GMT)

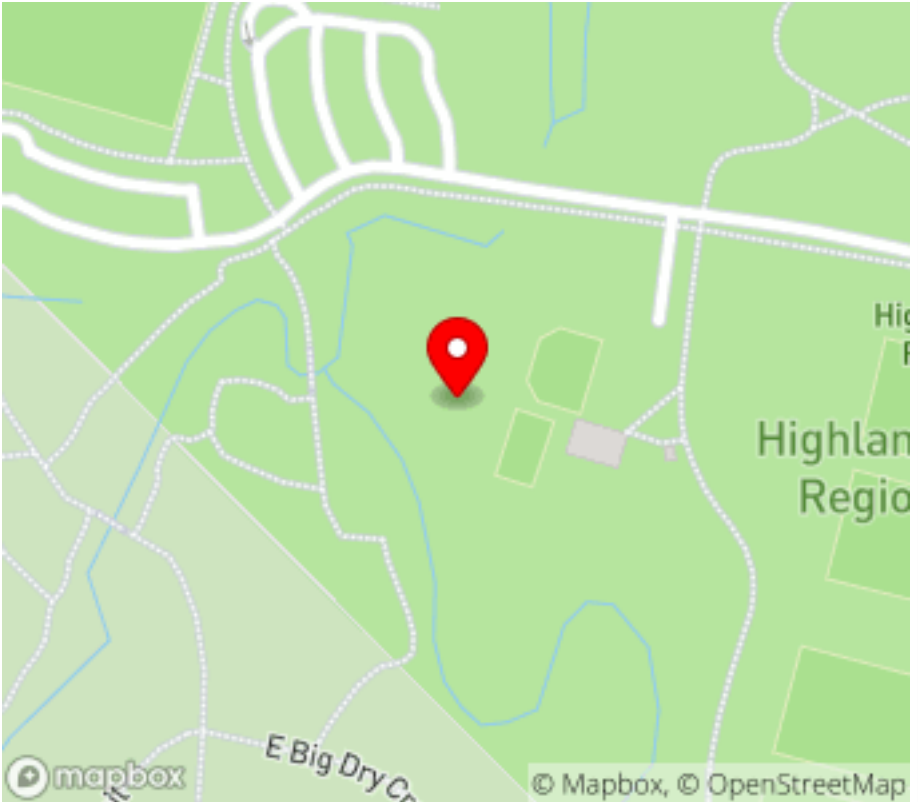
Station Maintenance Form

Photos



Station Maintenance Form

Station Maintenance Form

Location	Heritage Regional Park
Station_ID	10054
Technician(s)	ZJN
Date	04/05/2021
Time Arrive	03:59 PM (-6 GMT)
GPS Location	
	Lat: 39.5412964 Long: -104.9207772
Agency	Douglas County

Station Type

What type of station?	Stream
-----------------------	--------

Stream Station Maintenance

Stream Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Station Maintenance Form

Point ID	0
Tips During Calibration	13
Volume Added or Removed (mL)	-7.00
Error (%)	1.01
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	13.97
Charging Current (mA)	75.00
Battery Voltage Quiet (V)	12.79
Battery Voltage Transmitted (V)	12.65

Transmitter

Transmitter Checks	Program, Bucket, Desiccant, Time
--------------------	----------------------------------

Radio

Watts Forward	5.00
Watts Reflected	0.25
Standing Wave Ratio	1.5760
Is the PT an SDI-12?	No
No calibration form necessary	Check to see if PT is working properly.

5096 ALERT2 PT Calibration



5096 ALERT2 PT Calibration

REPROGRAM TRANSMITTER TO BASE VALUES	(25.5,1023,0)
How many different values are being tested?	7
Stage 1	12.07
Raw Value 1	535.00
Stage 2	10.05
Raw Value 2	445.00
Stage 3	8.13
Raw Value 3	361.00
Stage 4	6.13
Raw Value 4	272.00
Stage 5	4.15
Raw Value 5	185.00

Station Maintenance Form

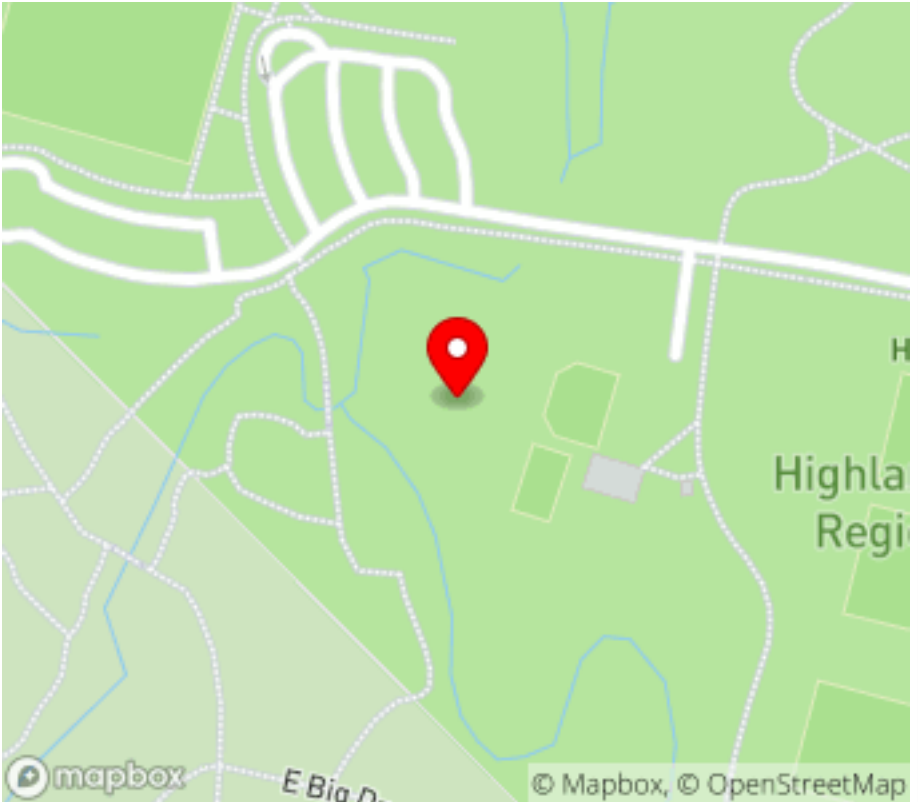
Stage 6	1.97
Raw Value 6	88.00
Stage 7	0.00
Raw Value 7	1.00
Multiplier	23.13200
Divisor	1023
Offset	-0.02410
NOTICE	If offset is greater than 0.5ft adjust ZERO screw in signal conditioning box.

Finishing Comments

Final Comments	Everything working well. Received test transmission. Flooding has dammed up creek right downstream of riser.
Depart Time	04:48 PM (-6 GMT)
Photos	
	

Station Maintenance Form

Station Maintenance Form

Location	Heritage Regional Park
Station_ID	10054
Technician(s)	ZJN
Date	08/27/2021
Time Arrive	01:00 PM (-6 GMT)
GPS Location	
	Lat: 39.5414039 Long: -104.9208445
Agency	Douglas County

Station Type

What type of station?	Stream
-----------------------	--------

Stream Station Maintenance

Stream Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Station Maintenance Form

Point ID	0
Tips During Calibration	13
Volume Added or Removed (mL)	-7.00
Error (%)	1.01
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	13.70
Charging Current (mA)	258.00
Battery Voltage Quiet (V)	13.27
Battery Voltage Transmitted (V)	13.12

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	5.00
Watts Reflected	0.25
Standing Wave Ratio	1.5760

5096 ALERT2 PT Calibration

5096 ALERT2 PT Calibration

REPROGRAM TRANSMITTER TO BASE VALUES	(25.5,1023,0)
How many different values are being tested?	7
Stage 1	11.82
Raw Value 1	504.00
Stage 2	10.04
Raw Value 2	426.00
Stage 3	7.80
Raw Value 3	332.00
Stage 4	4.78
Raw Value 4	199.00
Stage 5	3.18
Raw Value 5	133.00
Stage 6	1.94
Raw Value 6	80.00

Station Maintenance Form

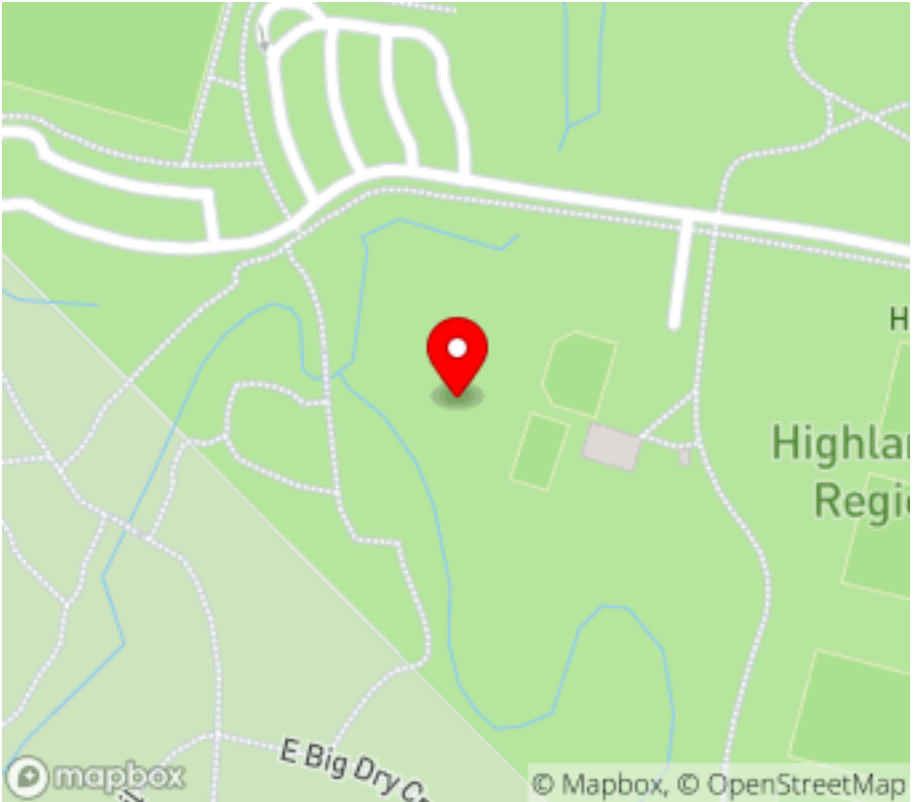
Stage 7	0.00
Raw Value 7	1.00
Multiplier	23.96673
Divisor	1023
Offset	0.04547
NOTICE	If offset is greater than 0.5ft adjust ZERO screw in signal conditioning box.

Finishing Comments

Final Comments	Everything working well. Received test transmission.
Depart Time	01:50 PM (-6 GMT)
Photos	

Station Maintenance Form

Station Maintenance Form

Location	Heritage Regional
Station_ID	10054
Technician(s)	ZJN
Date	06/17/2021
Time Arrive	01:38 PM (-6 GMT)
GPS Location	
	Lat: 39.5413077 Long: -104.9208372
Agency	Douglas County

Station Type

What type of station?	Stream
-----------------------	--------

Stream Station Maintenance

Stream Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Station Maintenance Form

Point ID	0
Tips During Calibration	13
Volume Added or Removed (mL)	-2.00
Error (%)	0.48
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	14.41
Charging Current (mA)	204.00
Battery Voltage Quiet (V)	13.27
Battery Voltage Transmitted (V)	13.12

Transmitter

Transmitter Checks	Desiccant, Bucket, Time, Program
--------------------	----------------------------------

Radio

Watts Forward	5.00
Watts Reflected	0.25
Standing Wave Ratio	1.5760

5096 ALERT2 PT Calibration

5096 ALERT2 PT Calibration

REPROGRAM TRANSMITTER TO BASE VALUES	(25.5,1023,0)
How many different values are being tested?	7
Stage 1	12.22
Raw Value 1	535.00
Stage 2	10.04
Raw Value 2	440.00
Stage 3	7.83
Raw Value 3	343.00
Stage 4	5.65
Raw Value 4	248.00
Stage 5	3.76
Raw Value 5	166.00
Stage 6	2.13
Raw Value 6	94.00

Station Maintenance Form


Stage 7	0.00
Raw Value 7	2.00
Multiplier	23.44022
Divisor	1023
Offset	-0.03648
NOTICE	If offset is greater than 0.5ft adjust ZERO screw in signal conditioning box.

Finishing Comments

Final Comments	Everything working well. Received test transmission.
Depart Time	02:22 PM (-6 GMT)
Photos	

Station Maintenance Form

Station Maintenance Form

Location	Newlin Gulch
Station_ID	10055
Technician(s)	ZJN
Date	04/02/2021
Time Arrive	03:00 PM (-6 GMT)
GPS Location	
	Lat: 39.5368854 Long: -104.7890932
Agency	Douglas County

Station Type

What type of station?	Stream
-----------------------	--------

Stream Station Maintenance

Stream Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Station Maintenance Form

Point ID	0
Tips During Calibration	12
Volume Added or Removed (mL)	15.00
Error (%)	-1.31
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	13.69
Charging Current (mA)	653.00
Battery Voltage Quiet (V)	12.79
Battery Voltage Transmitted (V)	12.71


Transmitter

Transmitter Checks	Bucket, Time, Program, Desiccant
--------------------	----------------------------------

Radio

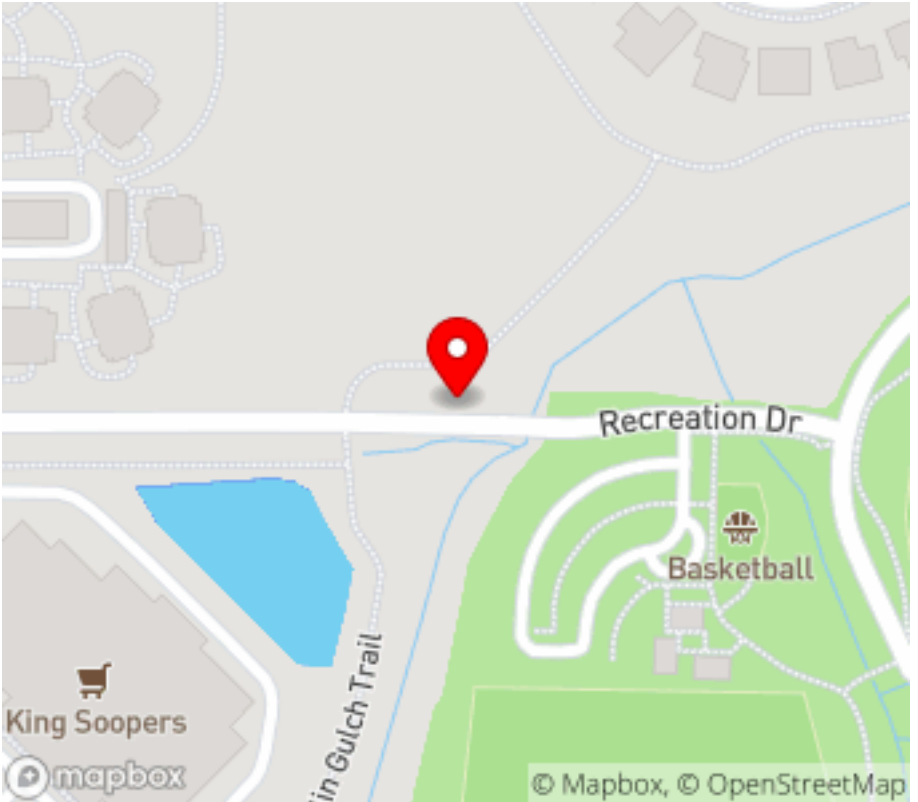
Watts Forward	4.00
Watts Reflected	0.25
Standing Wave Ratio	1.6667
Is the PT an SDI-12?	Yes
No calibration form necessary	Check to see if PT is working properly.

Finishing Comments

Final Comments	Everything working well. Lights triggered on and off at both flashers. Both at 13.8v and charging. Received test transmission.
Depart Time	03:54 PM (-6 GMT)
Photos	

Station Maintenance Form

Station Maintenance Form

Location	Newlin Gulch
Station_ID	10055
Technician(s)	ZJN
Date	08/27/2021
Time Arrive	10:30 AM (-6 GMT)
GPS Location	
	Lat: 39.5368708 Long: -104.7892144
Agency	Douglas County

Station Type

What type of station?	Stream
-----------------------	--------

Stream Station Maintenance

Stream Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Station Maintenance Form

Point ID	0
Tips During Calibration	12
Volume Added or Removed (mL)	5.00
Error (%)	-0.26
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	13.70
Charging Current (mA)	377.00
Battery Voltage Quiet (V)	13.35
Battery Voltage Transmitted (V)	13.28


Transmitter

Transmitter Checks	Desiccant, Time, Program, Bucket
--------------------	----------------------------------

Radio

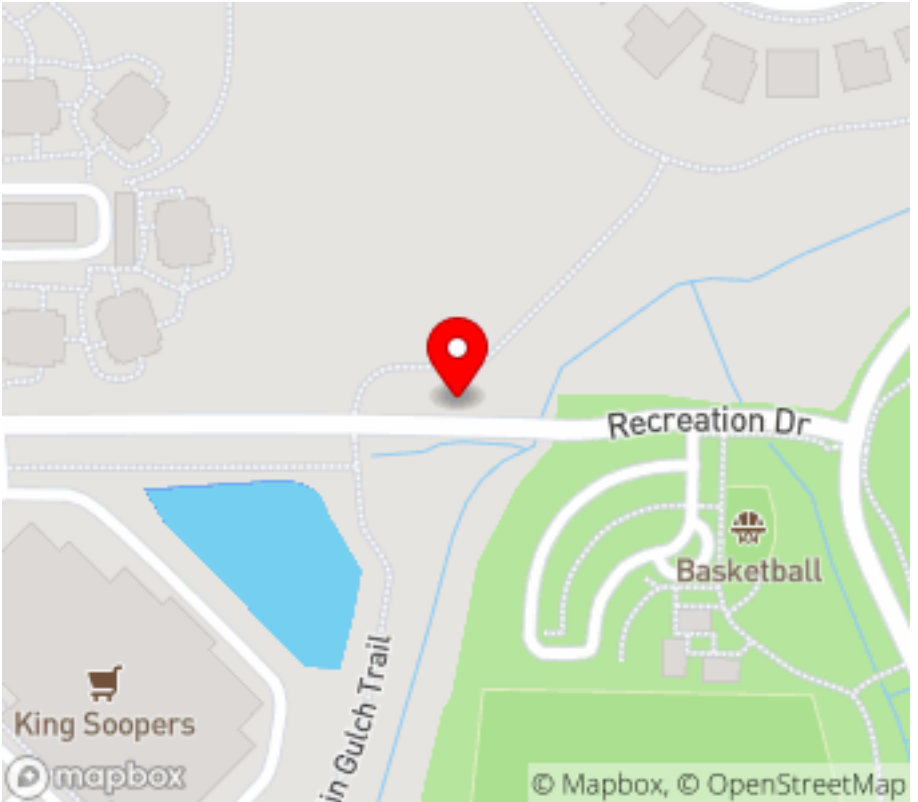
Watts Forward	4.50
Watts Reflected	0.00
Standing Wave Ratio	1.0000

Finishing Comments

Final Comments	Flasher 1 - 13.73v Flasher 2 - 13.63v Both flashers trigger on and off Everything working well. Received test transmission.
Depart Time	11:08 AM (-6 GMT)
Photos	

Station Maintenance Form

Station Maintenance Form

Location	Newlin Gulch
Station_ID	10055
Technician(s)	ZJN
Date	06/17/2021
Time Arrive	12:47 PM (-6 GMT)
GPS Location	
	Lat: 39.5368772 Long: -104.789249
Agency	Douglas County

Station Type

What type of station?	Stream
-----------------------	--------

Stream Station Maintenance

Stream Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Station Maintenance Form

Point ID	0
Tips During Calibration	12
Volume Added or Removed (mL)	14.00
Error (%)	-1.21
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	13.69
Charging Current (mA)	561.00
Battery Voltage Quiet (V)	13.35
Battery Voltage Transmitted (V)	13.28

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio


Watts Forward	5.00
Watts Reflected	0.50
Standing Wave Ratio	1.9250

Finishing Comments

Final Comments	Everything working well. Flashers turn on and off. Received test transmission.
Depart Time	01:24 PM (-6 GMT)
Photos	

Station Maintenance Form

Station Maintenance Form

Location	East Cherry Creek at Russellville Road
Station_ID	10056
Technician(s)	ZJN,JDP
Date	03/31/2021
Time Arrive	01:06 PM (-6 GMT)
GPS Location	
	Lat: 39.2808026 Long: -104.6891329
Agency	Douglas County

Station Type

What type of station?	Stream
-----------------------	--------

Stream Station Maintenance

Stream Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Station Maintenance Form

Point ID	0
Tips During Calibration	13
Volume Added or Removed (mL)	-6.00
Error (%)	0.90
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	21.81
Charging Current (mA)	491.00
Battery Voltage Quiet (V)	12.63
Battery Voltage Transmitted (V)	12.53

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	3.00
Watts Reflected	0.00
Standing Wave Ratio	1.0000
Is the PT an SDI-12?	No
No calibration form necessary	Check to see if PT is working properly.

5096 ALERT2 PT Calibration


5096 ALERT2 PT Calibration

REPROGRAM TRANSMITTER TO BASE VALUES	(25.5,1023,0)
How many different values are being tested?	7
Stage 1	12.11
Raw Value 1	485.00
Stage 2	10.03
Raw Value 2	401.00
Stage 3	8.03
Raw Value 3	322.00
Stage 4	5.99
Raw Value 4	240.00
Stage 5	4.09
Raw Value 5	164.00

Station Maintenance Form

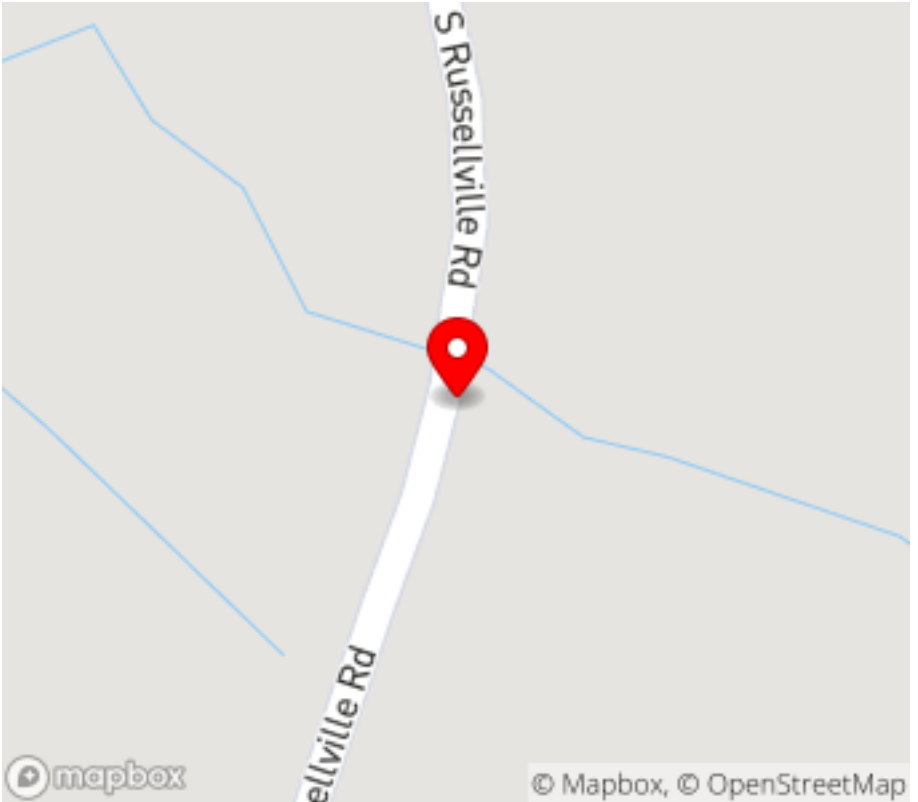
Stage 6	2.02
Raw Value 6	81.00
Stage 7	0.00
Raw Value 7	2.00
Multiplier	25.62702
Divisor	1023
Offset	-0.02731
NOTICE	If offset is greater than 0.5ft adjust ZERO screw in signal conditioning box.

Finishing Comments

Final Comments	Everything working well. Received test transmission.
Depart Time	02:12 PM (-6 GMT)
Photos	

Station Maintenance Form

Station Maintenance Form

Location	East Cherry Creek @ Russellville
Station_ID	10056
Technician(s)	ZJN
Date	06/09/2021
Time Arrive	01:50 PM (-6 GMT)
GPS Location	
	Lat: 39.2811862 Long: -104.6889712
Agency	Douglas County

Station Type

What type of station?	Stream
-----------------------	--------

Stream Station Maintenance

Stream Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Station Maintenance Form

Point ID	0
Tips During Calibration	13
Volume Added or Removed (mL)	-15.00
Error (%)	1.85
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	14.00
Charging Current (mA)	340.00
Battery Voltage Quiet (V)	13.75
Battery Voltage Transmitted (V)	13.65

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	4.25
Watts Reflected	0.25
Standing Wave Ratio	1.6404
Is the PT an SDI-12?	No
No calibration form necessary	Check to see if PT is working properly.

5096 ALERT2 PT Calibration


5096 ALERT2 PT Calibration

REPROGRAM TRANSMITTER TO BASE VALUES	(25.5,1023,0)
How many different values are being tested?	7
Stage 1	12.08
Raw Value 1	483.00
Stage 2	9.88
Raw Value 2	396.00
Stage 3	7.87
Raw Value 3	317.00
Stage 4	5.76
Raw Value 4	233.00
Stage 5	4.06
Raw Value 5	166.00

Station Maintenance Form

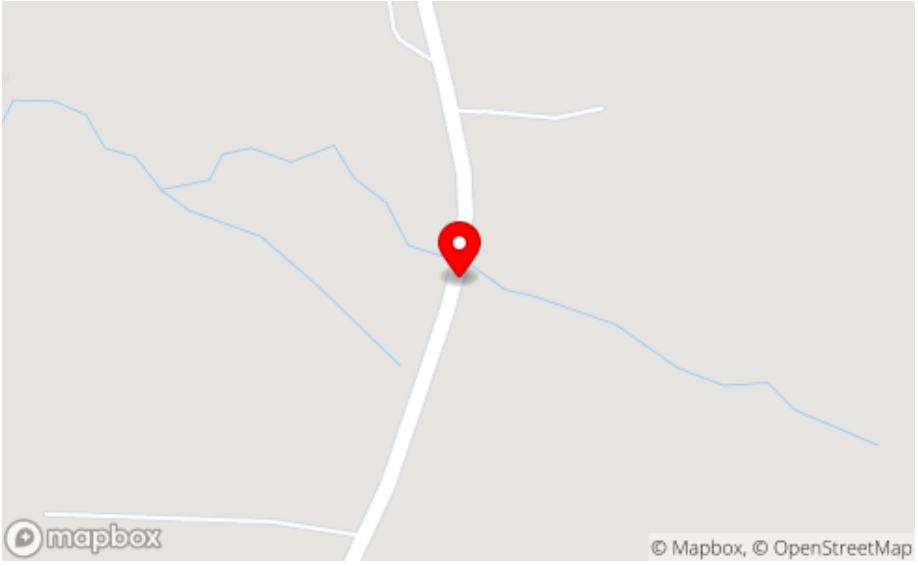
Stage 6	1.89
Raw Value 6	79.00
Stage 7	0.00
Raw Value 7	2.00
Multiplier	25.72697
Divisor	1023
Offset	-0.08700
NOTICE	If offset is greater than 0.5ft adjust ZERO screw in signal conditioning box.

Finishing Comments

Final Comments	Everything working well. Received test transmission.
Depart Time	02:34 PM (-6 GMT)
Photos	

Station Maintenance Form

Station Maintenance Form

Location	East Cherry Creek @ Russellville
Station_ID	10056
Technician(s)	ZJN
Date	08/25/2021
Time Arrive	01:55 PM (-6 GMT)
GPS Location	
	Lat: 39.281153 Long: -104.688994
Agency	Douglas County

Station Type

What type of station?	Stream
-----------------------	--------

Stream Station Maintenance

Stream Maintenance

Items Cleaned

Clean Checks	Funnel, Tipping_bucket, Solar_panel
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Point ID	0
Tips During Calibration	13
Volume Added or Removed (mL)	-9.00
Error (%)	1.22

Station Maintenance Form

Data Logger reads tips in both directions	checked
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Power System

Regulator Output Voltage (V)	13.94
Charging Current (mA)	295.00
Battery Voltage Quiet (V)	13.71
Battery Voltage Transmitted (V)	13.60

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	3.00
Watts Reflected	0.00
Standing Wave Ratio	1.0000

5096 ALERT2 PT Calibration

5096 ALERT2 PT Calibration

REPROGRAM TRANSMITTER TO BASE VALUES	(25.5,1023,0)
How many different values are being tested?	7
Stage 1	11.91
Raw Value 1	472.00
Stage 2	10.04
Raw Value 2	397.00
Stage 3	8.10
Raw Value 3	321.00
Stage 4	6.01
Raw Value 4	239.00
Stage 5	4.09
Raw Value 5	161.00
Stage 6	1.94
Raw Value 6	74.00
Stage 7	0.00
Raw Value 7	2.00
Multiplier	25.82176
Divisor	1023

Station Maintenance Form


Offset	0.00545
NOTICE	If offset is greater than 0.5ft adjust ZERO screw in signal conditioning box.

Finishing Comments

Final Comments	Everything working well. Received test transmission.
Depart Time	03:05 PM (-6 GMT)
Photos	

Station Maintenance Form

Station Maintenance Form

Location	Pine Cliff
Station_ID	10057
Technician(s)	ZJN
Date	04/01/2021
Time Arrive	11:21 AM (-6 GMT)
GPS Location	
	Lat: 39.3690804 Long: -104.9652503
Agency	Douglas County

Station Type

What type of station?	Stream
-----------------------	--------

Stream Station Maintenance

Stream Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Station Maintenance Form

Point ID	0
Tips During Calibration	13
Volume Added or Removed (mL)	-9.00
Error (%)	1.22
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	14.21
Charging Current (mA)	563.00
Battery Voltage Quiet (V)	12.65
Battery Voltage Transmitted (V)	12.54

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	4.25
Watts Reflected	0.10
Standing Wave Ratio	1.3624
No calibration form necessary	Check to see if PT is working properly.

Radar Calibration

Section 1

Calibration Time	11:46 AM (-6 GMT)
Wire-Weight Reading (ft)	1.59
Radar Reading (ft)	1.45
Adjustment amount	0.14
Comments	set radar to 1.59 ft

Finishing Comments

Final Comments	Everything working well. Received test transmission. Changed radar reading to match wire weight gage
Depart Time	12:08 PM (-6 GMT)


Station Maintenance Form

Photos



Station Maintenance Form

Station Maintenance Form

Location	Pine Cliff
Station_ID	10057
Technician(s)	ZJN
Date	06/08/2021
Time Arrive	02:00 PM (-6 GMT)
GPS Location	
	Lat: 39.3689871 Long: -104.9653787
Agency	Douglas County

Station Type

What type of station?	Stream
-----------------------	--------

Stream Station Maintenance

Stream Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Station Maintenance Form

Point ID	0
Tips During Calibration	13
Volume Added or Removed (mL)	-15.00
Error (%)	1.85
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	20.56
Charging Current (mA)	696.00
Battery Voltage Quiet (V)	13.18
Battery Voltage Transmitted (V)	13.10

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	5.00
Watts Reflected	0.00
Standing Wave Ratio	1.0000
No calibration form necessary	Check to see if PT is working properly.

Radar Calibration

Section 1

Calibration Time	02:06 PM (-6 GMT)
Wire-Weight Reading (ft)	2.09
Radar Reading (ft)	2.09

Finishing Comments

Final Comments	Everything working well. Received test transmission.
Depart Time	02:35 PM (-6 GMT)


Station Maintenance Form

Photos



Station Maintenance Form

Station Maintenance Form

Location	Pine Cliff
Station_ID	10057
Technician(s)	ZKN
Date	08/25/2021
Time Arrive	09:25 AM (-6 GMT)
GPS Location	
	Lat: 39.3690234 Long: -104.9653558
Agency	Douglas County

Station Type

What type of station?	Stream
-----------------------	--------

Stream Station Maintenance

Stream Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Station Maintenance Form

Point ID	0
Tips During Calibration	12
Volume Added or Removed (mL)	12.00
Error (%)	-1.00
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	20.32
Charging Current (mA)	177.00
Battery Voltage Quiet (V)	12.80
Battery Voltage Transmitted (V)	12.72

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	4.00
Watts Reflected	0.10
Standing Wave Ratio	1.3756

Radar Calibration

Section 1

Calibration Time	09:33 AM (-6 GMT)
Wire-Weight Reading (ft)	1.15
Radar Reading (ft)	1.12

Finishing Comments

Final Comments	Everything working well. Received test transmission
Depart Time	09:54 AM (-6 GMT)

Station Maintenance Form


Photos





Station Maintenance Form

Station Maintenance Form

Location	Happy Canyon @ Surrey Ridge
Station_ID	10059
Technician(s)	EJH/ZN
Date	03/19/2021
Time Arrive	09:15 AM (-6 GMT)
GPS Location	
	Lat: 39.5098182 Long: -104.8720459
Agency	Douglas County

Station Type

What type of station?	Stream
-----------------------	--------

Stream Station Maintenance

Stream Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Station Maintenance Form

Point ID	10059
Tips During Calibration	12
Volume Added or Removed (mL)	8.00
Error (%)	-0.58
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	14.51
Charging Current (mA)	99.00
Battery Voltage Quiet (V)	12.82
Battery Voltage Transmitted (V)	12.64

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	2.50
Watts Reflected	0.25
Standing Wave Ratio	1.9250
Is the PT an SDI-12?	No
No calibration form necessary	Check to see if PT is working properly.

5096 ALERT2 PT Calibration

5096 ALERT2 PT Calibration

REPROGRAM TRANSMITTER TO BASE VALUES	(25.5,1023,0)
How many different values are being tested?	7
Stage 1	12.00
Raw Value 1	504.00
Stage 2	10.00
Raw Value 2	427.00
Stage 3	8.00
Raw Value 3	350.00
Stage 4	6.00
Raw Value 4	273.00
Stage 5	4.00
Raw Value 5	196.00

Station Maintenance Form


Stage 6	2.00
Raw Value 6	119.00
Stage 7	0.00
Raw Value 7	39.00
Multiplier	26.46021
Divisor	1023
Offset	-1.05014
NOTICE	If offset is greater than 0.5ft adjust ZERO screw in signal conditioning box.

Finishing Comments

Final Comments	Cleaned and calibrated tipping bucket and top section Tested radio, battery, and solar-good Calibrated pt Replaced desiccant Reset tip count	
Depart Time	09:42 AM (-6 GMT)	
Photos		

Station Maintenance Form

Station Maintenance Form

Location	Happy Canyon
Station_ID	10059
Technician(s)	ZJN
Date	06/17/2021
Time Arrive	07:41 AM (-6 GMT)
GPS Location	
	Lat: 39.5097367 Long: -104.8721306
Agency	Douglas County

Station Type

What type of station?	Stream
-----------------------	--------

Stream Station Maintenance

Stream Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Station Maintenance Form

Point ID	0
Tips During Calibration	12
Volume Added or Removed (mL)	10.00
Error (%)	-0.79
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	14.09
Charging Current (mA)	18.00
Battery Voltage Quiet (V)	13.19
Battery Voltage Transmitted (V)	13.09

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	3.75
Watts Reflected	0.25
Standing Wave Ratio	1.6961

5096 ALERT2 PT Calibration


5096 ALERT2 PT Calibration

REPROGRAM TRANSMITTER TO BASE VALUES	(25.5,1023,0)
How many different values are being tested?	7
Stage 1	11.75
Raw Value 1	492.00
Stage 2	9.93
Raw Value 2	421.00
Stage 3	7.87
Raw Value 3	342.00
Stage 4	5.94
Raw Value 4	268.00
Stage 5	4.02
Raw Value 5	194.00
Stage 6	1.86
Raw Value 6	111.00

Station Maintenance Form


Stage 7	0.00
Raw Value 7	39.00
Multiplier	26.56862
Divisor	1023
Offset	-1.01691
NOTICE	If offset is greater than 0.5ft adjust ZERO screw in signal conditioning box.

Finishing Comments

Final Comments	Everything working well. Received test transmission.
Depart Time	08:27 AM (-6 GMT)
Photos	

Station Maintenance Form

Station Maintenance Form

Location	Happy Canyon
Station_ID	10059
Technician(s)	ZJN
Date	08/26/2021
Time Arrive	07:37 AM (-6 GMT)
GPS Location	
	Lat: 39.5097613 Long: -104.8721541
Agency	Douglas County

Station Type

What type of station?	Stream
-----------------------	--------

Stream Station Maintenance

Stream Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Station Maintenance Form

Point ID	0
Tips During Calibration	12
Volume Added or Removed (mL)	9.00
Error (%)	-0.68
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	14.30
Charging Current (mA)	169.00
Battery Voltage Quiet (V)	13.07
Battery Voltage Transmitted (V)	12.99

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	3.50
Watts Reflected	0.10
Standing Wave Ratio	1.4068

5096 ALERT2 PT Calibration


5096 ALERT2 PT Calibration

REPROGRAM TRANSMITTER TO BASE VALUES	(25.5,1023,0)
How many different values are being tested?	7
Stage 1	11.97
Raw Value 1	499.00
Stage 2	9.94
Raw Value 2	422.00
Stage 3	7.91
Raw Value 3	343.00
Stage 4	5.96
Raw Value 4	267.00
Stage 5	3.78
Raw Value 5	184.00
Stage 6	2.02
Raw Value 6	116.00

Station Maintenance Form


Stage 7	0.00
Raw Value 7	39.00
Multiplier	26.57590
Divisor	1023
Offset	-0.99994
NOTICE	If offset is greater than 0.5ft adjust ZERO screw in signal conditioning box.

Finishing Comments

Final Comments	Everything working well. Received test transmission.
Depart Time	08:20 AM (-6 GMT)
Photos	

Station Repair Form

Station Maintenance Form


Location	Tomah Rd
Station_ID	10065
Technician(s)	EJH
Date	01/11/2021
Time Arrive	12:05 PM (-7 GMT)
GPS Location	
	Lat: 39.2949609 Long: -104.9229675
Agency	Douglas County

Repair Comments

Item Replaced	reprogrammed rf, sent multiple transmissions and verified reception at base station
Depart Time	01:13 PM (-7 GMT)

Station Maintenance Form

Station Maintenance Form

Location	Tomah Rd
Station_ID	10065
Technician(s)	ZJN,JDP
Date	03/31/2021
Time Arrive	03:00 PM (-6 GMT)
GPS Location	
	Lat: 39.2949439 Long: -104.9227618
Agency	Douglas County

Station Type

What type of station?	Weather
-----------------------	---------

Stream Station Maintenance

No calibration form necessary	Check to see if PT is working properly.
-------------------------------	---

Weather Station Maintenance

Weather Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Station Maintenance Form

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Point ID	0
Tips During Calibration	12
Volume Added or Removed (mL)	1.00
Error (%)	0.16
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	14.36
Charging Current (mA)	304.00
Battery Voltage Quiet (V)	13.36
Battery Voltage Transmitted (V)	13.27

Sensor Verification

Temperature (°C)	10.50
Relative Humidity (%)	15.00
Barometric Pressure (mBar)	989.20
Wind Speed (mph)	1.50
Temperature (°C)	10.50
Relative Humidity (%)	25.50
Barometric Pressure (mBar)	799.40
Wind Speed (mph)	2.40

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	3.75
Watts Reflected	0.10
Standing Wave Ratio	1.3903
Does the station have a stage sensor?	No

Finishing Comments

Final Comments	Everything working well. Received test transmission.
Depart Time	03:30 PM (-6 GMT)


Station Maintenance Form

Photos



Station Maintenance Form

Station Maintenance Form

Location	Tomah Rd
Station_ID	10065
Technician(s)	ZJN
Date	06/09/2021
Time Arrive	09:35 AM (-6 GMT)
GPS Location	
	Lat: 39.2949261 Long: -104.9228337
Agency	Douglas County

Station Type

What type of station?	Weather
-----------------------	---------

Stream Station Maintenance

No calibration form necessary	Check to see if PT is working properly.
-------------------------------	---

Weather Station Maintenance

Weather Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Station Maintenance Form

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Point ID	0
Tips During Calibration	13
Volume Added or Removed (mL)	-4.00
Error (%)	0.69
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	13.96
Charging Current (mA)	39.00
Battery Voltage Quiet (V)	13.02
Battery Voltage Transmitted (V)	12.93

Sensor Verification

Temperature (°C)	25.00
Relative Humidity (%)	24.00
Barometric Pressure (mBar)	999.30
Wind Speed (mph)	1.00
Temperature (°C)	23.00
Relative Humidity (%)	31.50
Barometric Pressure (mBar)	798.50
Wind Speed (mph)	1.10

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	4.00
Watts Reflected	0.10
Standing Wave Ratio	1.3756
Does the station have a stage sensor?	No

Finishing Comments

Final Comments	Everything working well. Received test transmission.
Depart Time	09:59 AM (-6 GMT)


Station Maintenance Form

Photos



Station Maintenance Form

Station Maintenance Form

Location	Tomah Rd
Station_ID	10065
Technician(s)	ZJN
Date	08/26/2021
Time Arrive	09:22 AM (-6 GMT)
GPS Location	
	Lat: 39.29503 Long: -104.9228528
Agency	Douglas County

Station Type

What type of station?	Weather
-----------------------	---------

Weather Station Maintenance

Weather Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Station Maintenance Form

Point ID	0
Tips During Calibration	12
Volume Added or Removed (mL)	1.00
Error (%)	0.16
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	14.65
Charging Current (mA)	28.00
Battery Voltage Quiet (V)	13.06
Battery Voltage Transmitted (V)	12.98

Sensor Verification

Temperature (°C)	25.90
Relative Humidity (%)	36.00
Barometric Pressure (mBar)	987.90
Wind Speed (mph)	0.00
Temperature (°C)	24.90
Relative Humidity (%)	41.10
Barometric Pressure (mBar)	797.50
Wind Speed (mph)	0.00

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	3.25
Watts Reflected	0.25
Standing Wave Ratio	1.7676

Finishing Comments

Final Comments	Everything working well. Received test transmission.
Depart Time	09:39 AM (-6 GMT)


Station Maintenance Form

Photos



Station Maintenance Form

Station Maintenance Form

Location	Tomah Rd
Station_ID	10065
Technician(s)	ZJN
Date	11/16/2021
Time Arrive	02:47 PM (-7 GMT)
GPS Location	
	Lat: 39.2949787 Long: -104.9228197
Agency	Douglas County

Station Type

What type of station?	Weather
-----------------------	---------

Weather Station Maintenance

Weather Maintenance

Items Cleaned

Clean Checks	Solar_panel
--------------	-------------

Rain Gage Calibration

Error (%)	0.27
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Power System

Regulator Output Voltage (V)	19.82
Charging Current (mA)	130.00
Battery Voltage Quiet (V)	13.40
Battery Voltage Transmitted (V)	13.29

Sensor Verification

Station Maintenance Form

Temperature (°C)	18.40
Relative Humidity (%)	7.00
Barometric Pressure (mBar)	975.20
Wind Speed (mph)	4.50
Temperature (°C)	18.90
Relative Humidity (%)	14.10
Barometric Pressure (mBar)	785.00
Wind Speed (mph)	3.80


Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio


Watts Forward	4.50
Watts Reflected	0.25
Standing Wave Ratio	1.6168

Finishing Comments

Final Comments	Covered tipping bucket for winter. Everything working well. Received test transmission.
Depart Time	03:10 PM (-7 GMT)
Photos	

Station Maintenance Form

Station Maintenance Form

Location	Sulphur Gulch
Station_ID	10066
Technician(s)	ZJN
Date	04/02/2021
Time Arrive	01:24 PM (-6 GMT)
GPS Location	
	Lat: 39.5169294 Long: -104.7459515
Agency	Douglas County

Station Type

What type of station?	Stream
-----------------------	--------

Stream Station Maintenance

Stream Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Station Maintenance Form

Point ID	0
Tips During Calibration	13
Volume Added or Removed (mL)	-1.00
Error (%)	0.37
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	20.49
Charging Current (mA)	291.00
Battery Voltage Quiet (V)	12.97
Battery Voltage Transmitted (V)	12.87

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	4.50
Watts Reflected	0.10
Standing Wave Ratio	1.3504
Is the PT an SDI-12?	No
No calibration form necessary	Check to see if PT is working properly.

5096 ALERT2 PT Calibration

5096 ALERT2 PT Calibration

REPROGRAM TRANSMITTER TO BASE VALUES	(25.5,1023,0)
How many different values are being tested?	7
Stage 1	12.00
Raw Value 1	530.00
Stage 2	10.09
Raw Value 2	447.00
Stage 3	8.03
Raw Value 3	356.00
Stage 4	5.98
Raw Value 4	266.00
Stage 5	3.95
Raw Value 5	175.00

Station Maintenance Form

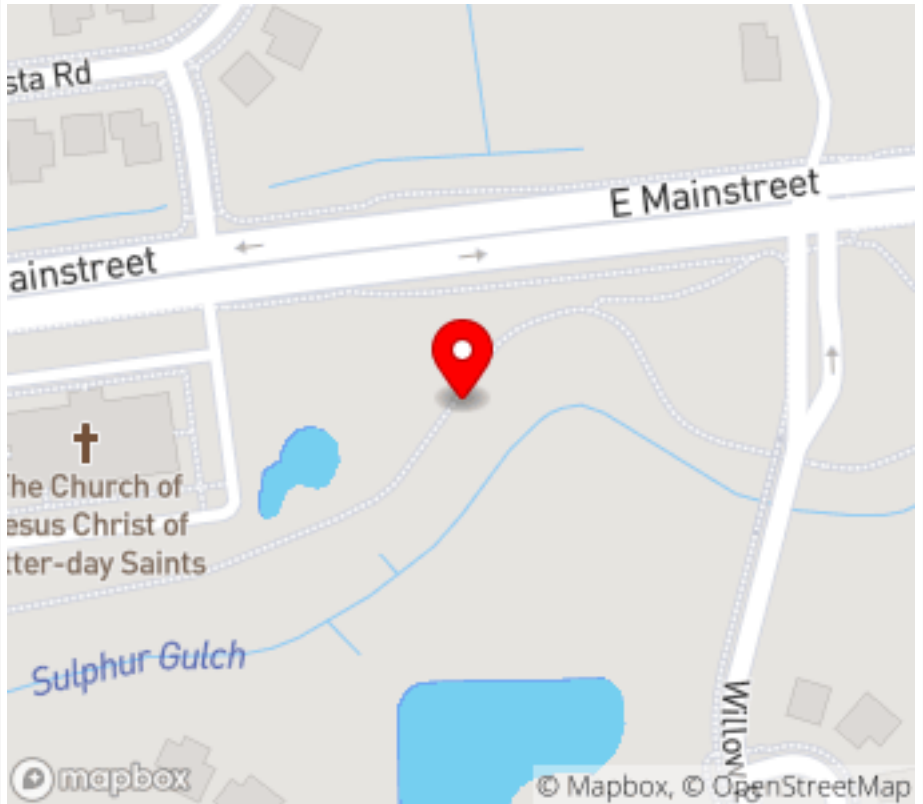
Stage 6	2.02
Raw Value 6	89.00
Stage 7	0.00
Raw Value 7	1.00
Multiplier	23.15291
Divisor	1023
Offset	-0.01668
NOTICE	If offset is greater than 0.5ft adjust ZERO screw in signal conditioning box.

Finishing Comments

Final Comments	Everything working well. Received test transmission.
Depart Time	02:32 PM (-6 GMT)
Photos	

Station Maintenance Form

Station Maintenance Form

Location	Sulphur Gulch
Station_ID	10066
Technician(s)	ZJN
Date	06/17/2021
Time Arrive	10:13 AM (-6 GMT)
GPS Location	
	Lat: 39.5169384 Long: -104.7460001
Agency	Douglas County

Station Type

What type of station?	Stream
-----------------------	--------

Stream Station Maintenance

Stream Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Station Maintenance Form

Point ID	0
Tips During Calibration	12
Volume Added or Removed (mL)	4.00
Error (%)	-0.15
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	14.41
Charging Current (mA)	234.00
Battery Voltage Quiet (V)	13.56
Battery Voltage Transmitted (V)	13.45

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	4.75
Watts Reflected	0.25
Standing Wave Ratio	1.5954

5096 ALERT2 PT Calibration


5096 ALERT2 PT Calibration

REPROGRAM TRANSMITTER TO BASE VALUES	(25.5,1023,0)
How many different values are being tested?	7
Stage 1	12.18
Raw Value 1	538.00
Stage 2	10.17
Raw Value 2	450.00
Stage 3	8.30
Raw Value 3	368.00
Stage 4	6.21
Raw Value 4	275.00
Stage 5	3.97
Raw Value 5	176.00
Stage 6	2.00
Raw Value 6	89.00

Station Maintenance Form


Stage 7	0.00
Raw Value 7	0.00
Multiplier	23.15029
Divisor	1023
Offset	-0.01087
NOTICE	If offset is greater than 0.5ft adjust ZERO screw in signal conditioning box.

Finishing Comments

Final Comments	Everything working well. Received test transmission.
Depart Time	11:06 AM (-6 GMT)
Photos	

Station Maintenance Form

Station Maintenance Form

Location	Sulphur Gulch
Station_ID	10066
Technician(s)	EJH
Date	08/30/2021
Time Arrive	02:20 PM (-6 GMT)
GPS Location	
	Lat: 39.5169839 Long: -104.7458982
Agency	Douglas County

Station Type

What type of station?	Stream
-----------------------	--------

Stream Station Maintenance

Stream Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Station Maintenance Form

Point ID	10066
Tips During Calibration	13
Volume Added or Removed (mL)	-2.00
Error (%)	0.48
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	13.77
Charging Current (mA)	154.00
Battery Voltage Quiet (V)	14.04
Battery Voltage Transmitted (V)	13.93

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	4.50
Watts Reflected	0.20
Standing Wave Ratio	1.5343

5096 ALERT2 PT Calibration



5096 ALERT2 PT Calibration

REPROGRAM TRANSMITTER TO BASE VALUES	(25.5,1023,0)
How many different values are being tested?	7
Stage 1	12.00
Raw Value 1	525.00
Stage 2	10.00
Raw Value 2	439.00
Stage 3	8.00
Raw Value 3	354.00
Stage 4	6.00
Raw Value 4	266.00
Stage 5	4.00
Raw Value 5	177.00
Stage 6	2.00
Raw Value 6	88.00

Station Maintenance Form


Stage 7	0.00
Raw Value 7	0.00
Multiplier	23.34308
Divisor	1023
Offset	-0.02728
NOTICE	If offset is greater than 0.5ft adjust ZERO screw in signal conditioning box.

Finishing Comments

Final Comments	Everything working well. Received test transmission. Installed door kit on standpipe	
Depart Time	03:50 PM (-6 GMT)	
Photos		
		

Station Maintenance Form

Station Maintenance Form

Location	Tallman Park
Station_ID	10067
Technician(s)	ZJN,EJH
Date	03/19/2021
Time Arrive	12:29 PM (-6 GMT)
GPS Location	
	Lat: 39.4931296 Long: -104.7344427
Agency	Douglas County

Station Type

What type of station?	Stream
-----------------------	--------

Stream Station Maintenance

Stream Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Station Maintenance Form

Point ID	0
Tips During Calibration	13
Volume Added or Removed (mL)	-2.00
Error (%)	0.48
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	14.24
Charging Current (mA)	135.00
Battery Voltage Quiet (V)	12.71
Battery Voltage Transmitted (V)	12.61

Transmitter

Transmitter Checks	Desiccant, Program, Bucket, Time
--------------------	----------------------------------

Radio

Watts Forward	6.00
Watts Reflected	0.10
Standing Wave Ratio	1.2965
Is the PT an SDI-12?	No
No calibration form necessary	Check to see if PT is working properly.

5096 ALERT2 PT Calibration



5096 ALERT2 PT Calibration

REPROGRAM TRANSMITTER TO BASE VALUES	(25.5,1023,0)
How many different values are being tested?	7
Stage 1	12.02
Raw Value 1	478.00
Stage 2	10.02
Raw Value 2	398.00
Stage 3	8.03
Raw Value 3	320.00
Stage 4	6.03
Raw Value 4	240.00
Stage 5	4.02
Raw Value 5	160.00

Station Maintenance Form

Stage 6	2.00
Raw Value 6	79.00
Stage 7	0.00
Raw Value 7	2.00
Multiplier	25.78587
Divisor	1023
Offset	-0.02152
NOTICE	If offset is greater than 0.5ft adjust ZERO screw in signal conditioning box.

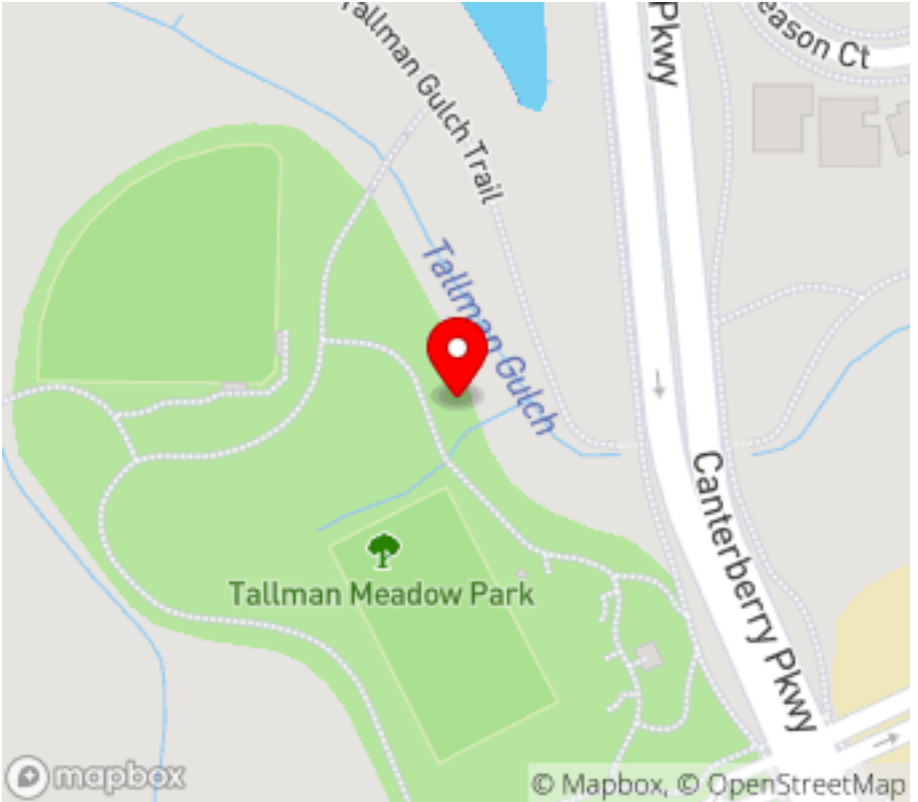
Finishing Comments

Final Comments	Everything working well. Received test transmission.
Depart Time	01:03 PM (-6 GMT)
Photos	
	



Station Repair Form

Station Maintenance Form

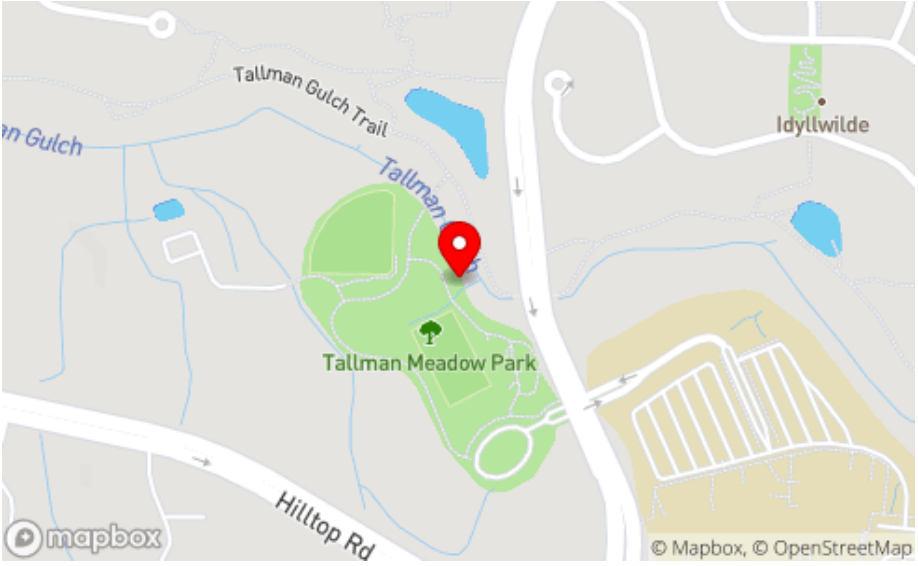
Location	Tallman Park
Station_ID	10067
Technician(s)	ZJN
Date	04/28/2021
Time Arrive	02:09 PM (-6 GMT)
GPS Location	
	Lat: 39.4931117 Long: -104.7344485
Agency	Douglas County

Repair Comments

Note for next visit	station was not recording tips. military connector was loose. tightened and tipped bucket multiple times each way and was working. sent test transmission
Depart Time	02:23 PM (-6 GMT)

Station Maintenance Form

Station Maintenance Form

Location	Tallman Park
Station_ID	10067
Technician(s)	ZJN
Date	06/17/2021
Time Arrive	09:08 AM (-6 GMT)
GPS Location	
	Lat: 39.4931097 Long: -104.7344143
Agency	Douglas County

Station Type

What type of station?	Stream
-----------------------	--------

Stream Station Maintenance

Stream Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Point ID	0
Tips During Calibration	12
Volume Added or Removed (mL)	4.00
Error (%)	-0.15

Station Maintenance Form

Data Logger reads tips in both directions	checked
---	---------

Power System

Regulator Output Voltage (V)	13.94
Charging Current (mA)	13.00
Battery Voltage Quiet (V)	13.07
Battery Voltage Transmitted (V)	12.95

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	5.00
Watts Reflected	0.00
Standing Wave Ratio	1.0000

5096 ALERT2 PT Calibration

5096 ALERT2 PT Calibration

REPROGRAM TRANSMITTER TO BASE VALUES	(25.5,1023,0)
How many different values are being tested?	5
Stage 1	7.98
Raw Value 1	309.00
Stage 2	6.07
Raw Value 2	233.00
Stage 3	3.96
Raw Value 3	148.00
Stage 4	1.96
Raw Value 4	68.00
Stage 5	0.00
Raw Value 5	2.00
Multiplier	26.32396
Divisor	1023
Offset	0.08272
NOTICE	If offset is greater than 0.5ft adjust ZERO screw in signal conditioning box.

Finishing Comments

Final Comments	Needs new PT. Calibration is only correct at high values. Calibrated from 8 ft Everything else working well. Received test transmission.
----------------	--


Station Maintenance Form

Depart Time	10:00 AM (-6 GMT)
Photos	



Station Maintenance Form

Station Maintenance Form

Location	Tallman Gulch
Station_ID	10067
Technician(s)	ZJN
Date	08/27/2021
Time Arrive	08:55 AM (-6 GMT)
GPS Location	
	Lat: 39.4931449 Long: -104.7344694
Agency	Douglas County

Station Type

What type of station?	Stream
-----------------------	--------

Stream Station Maintenance

Stream Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Station Maintenance Form

Point ID	0
Tips During Calibration	12
Volume Added or Removed (mL)	2.00
Error (%)	0.06
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	14.13
Charging Current (mA)	31.00
Battery Voltage Quiet (V)	12.82
Battery Voltage Transmitted (V)	12.73

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	4.00
Watts Reflected	0.00
Standing Wave Ratio	1.0000

5096 ALERT2 PT Calibration

5096 ALERT2 PT Calibration

REPROGRAM TRANSMITTER TO BASE VALUES	(25.5,1023,0)
How many different values are being tested?	7
Stage 1	12.31
Raw Value 1	482.00
Stage 2	10.08
Raw Value 2	394.00
Stage 3	8.02
Raw Value 3	312.00
Stage 4	6.06
Raw Value 4	235.00
Stage 5	4.20
Raw Value 5	161.00
Stage 6	2.00
Raw Value 6	74.00

Station Maintenance Form


Stage 7	0.00
Raw Value 7	2.00
Multiplier	26.09131
Divisor	1023
Offset	0.04746
NOTICE	If offset is greater than 0.5ft adjust ZERO screw in signal conditioning box.

Finishing Comments

Final Comments	Everything working well. Received test transmission.
Depart Time	09:40 AM (-6 GMT)
Photos	

Station Maintenance Form

Station Maintenance Form

Location	Antelope Creek
Station_ID	10068
Technician(s)	ZJN,JDP
Date	03/31/2021
Time Arrive	12:13 PM (-6 GMT)
GPS Location	
	Lat: 39.2638539 Long: -104.7159549
Agency	Douglas County

Station Type

What type of station?	Stream
-----------------------	--------

Stream Station Maintenance

Stream Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Station Maintenance Form

Point ID	0
Tips During Calibration	13
Volume Added or Removed (mL)	-1.00
Error (%)	0.27
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	13.64
Charging Current (mA)	89.00
Battery Voltage Quiet (V)	12.86
Battery Voltage Transmitted (V)	12.76

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	4.00
Watts Reflected	0.00
Standing Wave Ratio	1.0000
Is the PT an SDI-12?	No
No calibration form necessary	Check to see if PT is working properly.

5096 ALERT2 PT Calibration

5096 ALERT2 PT Calibration

REPROGRAM TRANSMITTER TO BASE VALUES	(25.5,1023,0)
How many different values are being tested?	7
Stage 1	11.95
Raw Value 1	482.00
Stage 2	9.92
Raw Value 2	402.00
Stage 3	8.02
Raw Value 3	327.00
Stage 4	6.07
Raw Value 4	250.00
Stage 5	4.06
Raw Value 5	172.00

Station Maintenance Form

Stage 6	2.13
Raw Value 6	95.00
Stage 7	0.00
Raw Value 7	11.00
Multiplier	25.96865
Divisor	1023
Offset	-0.28488
NOTICE	If offset is greater than 0.5ft adjust ZERO screw in signal conditioning box.


Finishing Comments

Final Comments	Everything working well. Received test transmission.
Depart Time	12:58 PM (-6 GMT)
Photos	



Station Maintenance Form

Station Maintenance Form

Location	Antelope Creek
Station_ID	10068
Technician(s)	ZJN
Date	06/09/2021
Time Arrive	01:01 PM (-6 GMT)
GPS Location	
	Lat: 39.2637817 Long: -104.7159849
Agency	Douglas County

Station Type

What type of station?	Stream
-----------------------	--------

Stream Station Maintenance

Stream Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Station Maintenance Form

Point ID	0
Tips During Calibration	13
Volume Added or Removed (mL)	-6.00
Error (%)	0.90
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	13.62
Charging Current (mA)	33.00
Battery Voltage Quiet (V)	13.18
Battery Voltage Transmitted (V)	13.08

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	5.00
Watts Reflected	0.75
Standing Wave Ratio	2.2642
Is the PT an SDI-12?	No
No calibration form necessary	Check to see if PT is working properly.

5096 ALERT2 PT Calibration

5096 ALERT2 PT Calibration

REPROGRAM TRANSMITTER TO BASE VALUES	(25.5,1023,0)
How many different values are being tested?	7
Stage 1	12.21
Raw Value 1	489.00
Stage 2	9.86
Raw Value 2	398.00
Stage 3	8.20
Raw Value 3	333.00
Stage 4	6.05
Raw Value 4	250.00
Stage 5	4.01
Raw Value 5	170.00

Station Maintenance Form


Stage 6	2.04
Raw Value 6	92.00
Stage 7	0.00
Raw Value 7	6.00
Multiplier	25.96702
Divisor	1023
Offset	-0.24943
NOTICE	If offset is greater than 0.5ft adjust ZERO screw in signal conditioning box.

Finishing Comments

Final Comments	Everything working well. Received test transmission.
Depart Time	01:42 PM (-6 GMT)
Photos	

Station Maintenance Form

Station Maintenance Form

Location	Antelope Creek
Station_ID	10068
Technician(s)	ZJN
Date	08/25/2021
Time Arrive	03:14 PM (-6 GMT)
GPS Location	
	Lat: 39.2637545 Long: -104.7159955
Agency	Douglas County

Station Type

What type of station?	Stream
-----------------------	--------

Stream Station Maintenance

Stream Maintenance

Items Cleaned

Clean Checks	Solar_panel, Tipping_bucket, Funnel
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Station Maintenance Form

Point ID	0
Tips During Calibration	13
Volume Added or Removed (mL)	-5.00
Error (%)	0.80
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	13.60
Charging Current (mA)	20.00
Battery Voltage Quiet (V)	13.27
Battery Voltage Transmitted (V)	13.17

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	4.00
Watts Reflected	0.00
Standing Wave Ratio	1.0000

5096 ALERT2 PT Calibration

5096 ALERT2 PT Calibration

REPROGRAM TRANSMITTER TO BASE VALUES	(25.5,1023,0)
How many different values are being tested?	7
Stage 1	11.81
Raw Value 1	466.00
Stage 2	9.78
Raw Value 2	385.00
Stage 3	7.76
Raw Value 3	306.00
Stage 4	5.79
Raw Value 4	228.00
Stage 5	3.93
Raw Value 5	156.00
Stage 6	1.92
Raw Value 6	77.00

Station Maintenance Form


Stage 7	0.00
Raw Value 7	2.00
Multiplier	26.06210
Divisor	1023
Offset	-0.04019
NOTICE	If offset is greater than 0.5ft adjust ZERO screw in signal conditioning box.

Finishing Comments

Final Comments	Everything working well. Received test transmission
Depart Time	03:50 PM (-6 GMT)
Photos	

Station Maintenance Form

Station Maintenance Form

Location	Baldwin Gulch Dam
Station_ID	10077
Technician(s)	ZJN
Date	04/05/2021
Time Arrive	01:48 PM (-6 GMT)
GPS Location	
	Lat: 39.5337181 Long: -104.7472178
Agency	Douglas County

Station Type

What type of station?	Stream
-----------------------	--------

Stream Station Maintenance

Stream Maintenance

Items Cleaned

Clean Checks	Tipping_bucket, Funnel, Solar_panel
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Station Maintenance Form

Error (%)	0.27
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	20.40
Charging Current (mA)	361.00
Battery Voltage Quiet (V)	13.45
Battery Voltage Transmitted (V)	13.36


Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio


Watts Forward	5.00
Watts Reflected	0.28
Standing Wave Ratio	1.6200
Is the PT an SDI-12?	Yes
No calibration form necessary	Check to see if PT is working properly.

Finishing Comments

Final Comments	Everything working well. Received test transmission. Tested both sides of tipping bucket to 4.6ml. Set GPS ID to 10.
Depart Time	02:23 PM (-6 GMT)
Photos	

Station Maintenance Form

Station Maintenance Form

Location	Baldwin Gulch Dam
Station_ID	10077
Technician(s)	ZJN
Date	06/17/2021
Time Arrive	11:55 AM (-6 GMT)
GPS Location	
	Lat: 39.5336162 Long: -104.7471306
Agency	Douglas County

Station Type

What type of station?	Stream
-----------------------	--------

Stream Station Maintenance

Stream Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Station Maintenance Form

Error (%)	0.27
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	20.41
Charging Current (mA)	461.00
Battery Voltage Quiet (V)	13.19
Battery Voltage Transmitted (V)	13.10

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio


Watts Forward	5.00
Watts Reflected	0.28
Standing Wave Ratio	1.6200

Finishing Comments

Final Comments	Everything working well. Received test transmission. Tipped both ways
Depart Time	12:27 PM (-6 GMT)
Photos	

Station Maintenance Form

Station Maintenance Form

Location	Baldwin Gulch
Station_ID	10077
Technician(s)	ZJN,EJH
Date	09/07/2021
Time Arrive	10:32 AM (-6 GMT)
GPS Location	
	Lat: 39.533617 Long: -104.7471518
Agency	Douglas County

Station Type

What type of station?	Precipitation
-----------------------	---------------

Precipitation Station Maintenance

Precipitation Maintenance

Items Cleaned

Clean Checks	Funnel, Tipping_bucket, Solar_panel
--------------	-------------------------------------

Rain Gage Calibration

Point ID	0
Error (%)	0.27
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	14.14
Charging Current (mA)	279.00
Battery Voltage Quiet (V)	13.26

Station Maintenance Form

Battery Voltage Transmitted (V)	13.16
---------------------------------	-------


Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio


Watts Forward	4.50
Watts Reflected	0.00
Standing Wave Ratio	1.0000

Finishing Comments

Final Comments	Removed riser pipe and PT for construction. Will reinstall when they are done. Everything working well. Received test transmission.
Depart Time	11:40 AM (-6 GMT)
Photos	

Station Maintenance Form

Station Maintenance Form

Location	WCC-7
Station_ID	10080
Technician(s)	ZJN
Date	04/05/2021
Time Arrive	09:18 AM (-6 GMT)
GPS Location	
	Lat: 39.1419085 Long: -104.771616
Agency	Douglas County

Station Type

What type of station?	Stream
-----------------------	--------

Stream Station Maintenance

Stream Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Station Maintenance Form

Point ID	0
Error (%)	0.27
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	21.37
Charging Current (mA)	118.00
Battery Voltage Quiet (V)	13.91
Battery Voltage Transmitted (V)	13.82


Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio


Watts Forward	4.25
Watts Reflected	0.00
Standing Wave Ratio	1.0000
Is the PT an SDI-12?	Yes
No calibration form necessary	Check to see if PT is working properly.

Finishing Comments

Final Comments	Checked calibration on each bucket to 4.6ml. Everything working well. Received test transmission.
Depart Time	10:18 AM (-6 GMT)
Photos	

Station Maintenance Form

Station Maintenance Form

Location	WCC-7 Dam
Station_ID	10080
Technician(s)	ZJN
Date	06/09/2021
Time Arrive	10:33 AM (-6 GMT)
GPS Location	
	Lat: 39.1419163 Long: -104.7716008
Agency	Douglas County

Station Type

What type of station?	Stream
-----------------------	--------

Stream Station Maintenance

Stream Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Station Maintenance Form

Error (%)	0.27
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	20.34
Charging Current (mA)	260.00
Battery Voltage Quiet (V)	13.65
Battery Voltage Transmitted (V)	13.54


Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio


Watts Forward	5.00
Watts Reflected	0.00
Standing Wave Ratio	1.0000
Is the PT an SDI-12?	Yes
No calibration form necessary	Check to see if PT is working properly.

Finishing Comments

Final Comments	Everything working well. Received test transmission. Tipping bucket tipped both ways. Moved solar panel to face south	
Depart Time	10:59 AM (-6 GMT)	
Photos		

Station Maintenance Form

Station Maintenance Form

Location	WCC-7
Station_ID	10080
Technician(s)	ZJN
Date	08/25/2021
Time Arrive	11:56 AM (-6 GMT)
GPS Location	
	Lat: 39.1418867 Long: -104.7715901
Agency	Douglas County

Station Type

What type of station?	Stream
-----------------------	--------

Stream Station Maintenance

Stream Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Station Maintenance Form

Point ID	0
Error (%)	0.27
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	20.75
Charging Current (mA)	643.00
Battery Voltage Quiet (V)	13.35
Battery Voltage Transmitted (V)	13.26


Transmitter

Transmitter Checks	Desiccant, Time, Program, Bucket
--------------------	----------------------------------






Radio

Watts Forward	4.50
Watts Reflected	0.00
Standing Wave Ratio	1.0000

Finishing Comments


Final Comments	<p>Everything working well. Received test transmission. Tipping bucket calibrated and tipped both ways.</p> <p>They are working on expanding the spillway</p>
Depart Time	12:29 PM (-6 GMT)
Photos	

Station Maintenance Form

Station Maintenance Form

Station Maintenance Form

Location	FP-P1 Dam
Station_ID	10081
Technician(s)	ZJN
Date	04/05/2021
Time Arrive	12:55 PM (-6 GMT)
GPS Location	
	Lat: 39.5223547 Long: -104.7511657
Agency	Douglas County

Station Type

What type of station?	Stream
-----------------------	--------

Stream Station Maintenance

Stream Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Station Maintenance Form

Error (%)	0.27
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	20.98
Charging Current (mA)	322.00
Battery Voltage Quiet (V)	13.37
Battery Voltage Transmitted (V)	13.29


Transmitter

Transmitter Checks	Program, Bucket, Time, Desiccant
--------------------	----------------------------------

Radio


Watts Forward	4.25
Watts Reflected	0.00
Standing Wave Ratio	1.0000
Is the PT an SDI-12?	Yes
No calibration form necessary	Check to see if PT is working properly.

Finishing Comments

Final Comments	Everything working well. Received test transmission. Tested both sides of tipping bucket to 4.6ml. Set GPS ID to 10
Depart Time	01:33 PM (-6 GMT)
Photos	

Station Maintenance Form

Station Maintenance Form

Location	FP-P1 Dam
Station_ID	10081
Technician(s)	ZJN
Date	06/17/2021
Time Arrive	11:15 AM (-6 GMT)
GPS Location	
	Lat: 39.5228033 Long: -104.7513367
Agency	Douglas County

Station Type

What type of station?	Stream
-----------------------	--------

Stream Station Maintenance

Stream Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Station Maintenance Form

Error (%)	0.27
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	20.54
Charging Current (mA)	526.00
Battery Voltage Quiet (V)	13.17
Battery Voltage Transmitted (V)	13.08

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	5.00
Watts Reflected	0.00
Standing Wave Ratio	1.0000

Finishing Comments

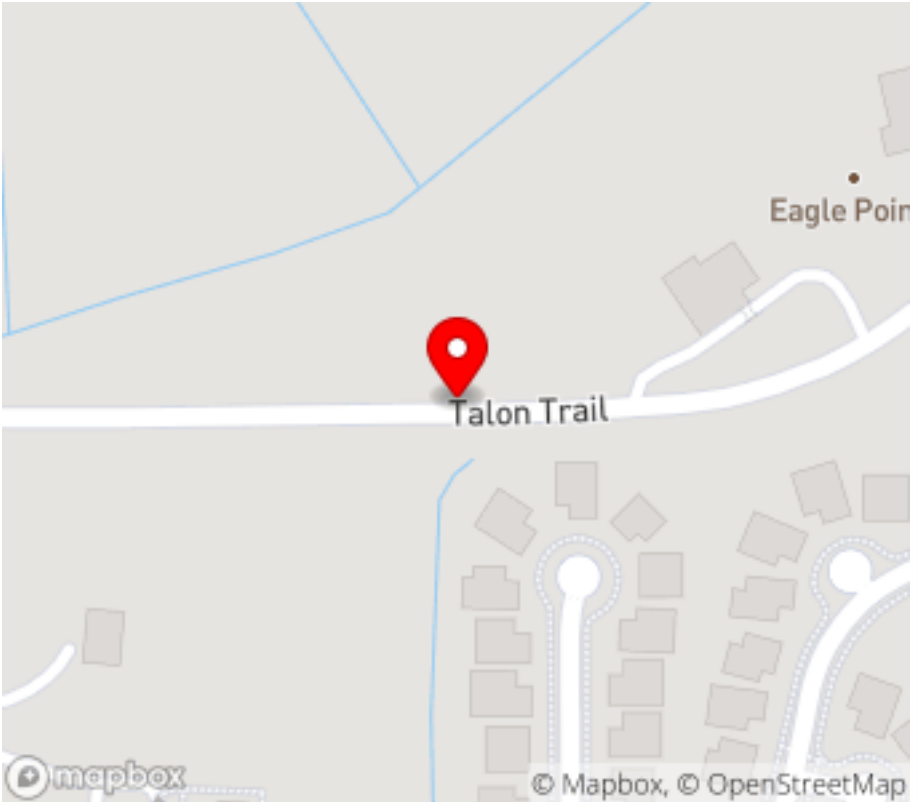
Final Comments	Everything working well. Received test transmission.
Depart Time	11:45 AM (-6 GMT)

Photos



Station Maintenance Form

Station Maintenance Form

Location	FP-P1 Dam
Station_ID	10081
Technician(s)	ZJN
Date	08/27/2021
Time Arrive	09:50 AM (-6 GMT)
GPS Location	
	Lat: 39.5223707 Long: -104.7509935
Agency	Douglas County

Station Type

What type of station?	Stream
-----------------------	--------

Stream Station Maintenance

Stream Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Station Maintenance Form

Point ID	0
Error (%)	0.27
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	20.93
Charging Current (mA)	392.00
Battery Voltage Quiet (V)	13.33
Battery Voltage Transmitted (V)	13.22


Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio


Watts Forward	4.00
Watts Reflected	0.10
Standing Wave Ratio	1.3756

Finishing Comments

Final Comments	Everything working well. Received test transmission. Tipping bucket tipped both ways and is calibrated.
Depart Time	10:15 AM (-6 GMT)
Photos	

Station Maintenance Form

Station Maintenance Form

Location	FP-S1 Dam
Station_ID	10082
Technician(s)	ZJN
Date	04/05/2021
Time Arrive	11:08 AM (-6 GMT)
GPS Location	 <p>Franktown Parker FPS- 1 Reservoir</p> <p>mapbox © Mapbox, © OpenStreetMap</p>
	Lat: 39.4807473 Long: -104.7465549
Agency	Douglas County

Station Type

What type of station?	Stream
-----------------------	--------

Stream Station Maintenance

Stream Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Station Maintenance Form

Error (%)	0.27
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	21.39
Charging Current (mA)	194.00
Battery Voltage Quiet (V)	13.46
Battery Voltage Transmitted (V)	13.38

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	4.25
Watts Reflected	0.00
Standing Wave Ratio	1.0000
Is the PT an SDI-12?	Yes
No calibration form necessary	Check to see if PT is working properly.

Finishing Comments

Note for next visit	bring new al200
Final Comments	Recalibrated PT. Got an offset of -0.75. Offset keeps getting worse. PT may need to go in for calibration. Everything working well. Received test transmission. Checked tipping bucket to 4.6ml on each side. Station not getting GPS. Tested with current GPS and truck GPS. May be al200 that's bad
Depart Time	12:42 PM (-6 GMT)

Station Maintenance Form

Photos

11:38 4G 83%

Book


fx

	A	B	C	D	E	F
5		meas	stage	pt reading	stage ft	
6		1	138	12.13		11.5
7		2	127.5	10.45	9.79166667	
8		3	94.5	8.57	7.875	
9		4	73.85	6.7	5.926833333	
10		5	47.47	4.74	3.955833333	
11		6	23.61	2.8	1.9675	
12		7	0	0.9	0	
13				6.612857143	5.865833333	
14						
15						
16		meas	difference			
17		1		-0.63		
18		2		-0.65833333		
19		3		-0.695		
20		4		-0.72816667		
21		5		-0.78416667		
22		6		-0.8325		
23		7		-0.9		
24		average		-0.74702381		
25						
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37						
38						
39						
40						



Station Repair Form

Station Maintenance Form

Location	FP-S1 Dam
Station_ID	10082
Technician(s)	ZJN
Date	05/14/2021
Time Arrive	10:26 AM (-6 GMT)
GPS Location	 <p>Franktown Parker FPS- 1 Reservoir</p> <p>mapbox © Mapbox, © OpenStreetMap</p>
	Lat: 39.4805271 Long: -104.746715
Agency	Douglas County

Repair Comments

Item Replaced	AL200
Comments	Replaced AL200 with new AL200 (SN2451) due to not getting GPS lock. Received lock and test transmissions. Reported lock at base
Depart Time	11:03 AM (-6 GMT)


Station Repair Form

Photos



Station Maintenance Form

Station Maintenance Form

Location	FP-S1 Dam
Station_ID	10082
Technician(s)	ZJN
Date	06/16/2021
Time Arrive	12:49 PM (-6 GMT)
GPS Location	 <p>Franktown Parker FPS- 1 Reservoir</p> <p>© mapbox © Mapbox, © OpenStreetMap</p>
	Lat: 39.4806346 Long: -104.7465021
Agency	Douglas County

Station Type

What type of station?	Stream
-----------------------	--------

Stream Station Maintenance

Stream Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
--------------	-------------------------------------

Rain Sensor

Does the station have a rain sensor?	Yes
--------------------------------------	-----

Rain Gage Calibration

Station Maintenance Form

Error (%)	0.27
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	20.55
Charging Current (mA)	470.00
Battery Voltage Quiet (V)	13.18
Battery Voltage Transmitted (V)	13.10

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	5.00
Watts Reflected	0.00
Standing Wave Ratio	1.0000

Finishing Comments

Final Comments	Station needs new pt. Input offset of -0.82. Not linear calibration. Everything else working well. Received test. Tipped both ways
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Depart Time	01:25 PM (-6 GMT)
-------------	-------------------


Photos

4					
5		stage	stage ft	pt reading ft	difference
6		146.1	12.175	12.83	-0.655
7		121.31	10.10917	10.79	-0.68083
8		94.42	7.868333	8.62	-0.75167
9		69.01	5.750833	6.55	-0.79917
10		45.34	3.778333	4.65	-0.87167
11		23.08	1.923333	2.87	-0.94667
12		0	0	1.06	-1.06
13				average	-0.82357
14					



Station Maintenance Form

Station Maintenance Form

Location	FP-S1 Dam
Station_ID	10082
Technician(s)	ZJN
Date	08/26/2021
Time Arrive	03:29 PM (-6 GMT)
GPS Location	 <p>Franktown Parker FPS- 1 Reservoir</p> <p>© Mapbox, © OpenStreetMap</p>
	Lat: 39.4807447 Long: -104.7464576
Agency	Douglas County

Station Type

What type of station?	Stream
-----------------------	--------

Stream Station Maintenance

Stream Maintenance

Items Cleaned

Clean Checks	Funnel, Solar_panel, Tipping_bucket
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Rain Sensor

Does the station have a rain sensor?	Yes
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Rain Gage Calibration

Station Maintenance Form

Point ID	0
Error (%)	0.27
Data Logger reads tips in both directions	checked

Power System

Regulator Output Voltage (V)	20.06
Charging Current (mA)	142.00
Battery Voltage Quiet (V)	13.24
Battery Voltage Transmitted (V)	13.15

Transmitter

Transmitter Checks	Desiccant, Program, Time, Bucket
--------------------	----------------------------------

Radio

Watts Forward	4.75
Watts Reflected	0.10
Standing Wave Ratio	1.3394

Finishing Comments

Final Comments	Everything working well. Received test transmission. Tipping bucket tipped both ways. Calibrated PT with an offset of -0.65. Pt is still jumping around with calibration
Depart Time	04:15 PM (-6 GMT)
Photos	

8. APPENDIX B. DETAILED INVENTORY OF SPARE EQUIPMENT

Detailed inventory of spare Equipment

Asset	Accounted For	Date Inspected	Location of asset	Make/ Model Number	Serial Number	Notes
500 mA Wall Charger	X	12/7/2021	WET	D1730	12BC0500D-1	Removed from West creek
5096 Board	X	12/7/2021	WET	Hydrolynx 5096	6434	
ALERT 2 Encoder Board	X	12/7/2021	WET	Hydrolynx A2 Encoder Board	105	Good condition, but needs firmware upgrade
Antenna Cable	X	12/7/2021	WET	WET Antenna Cable	1	N (m) to UHF (M)
Antenna Cable	X	12/7/2021	WET	WET Antenna Cable	2	N (M) to N (M)
Antenna Cable	X	12/7/2021	WET	WET Antenna Cable	3	N (M) to N (M) 3.5'
Antenna Cable	X	12/7/2021	WET	WET Antenna Cable	4	N (M) to UHF (M)
Antenna Cable	X	12/7/2021	WET	WET Antenna Cable	5	N (M) to UHF (M)
Antenna Cable	X	12/7/2021	WET	WET Sutron Cable	1	Sutron
Antenna Top Section	X	12/7/2021	WET	N/A	N/A	Top section with antenna
Antenna Top Section	X	12/7/2021	WET	N/A	N/A	Top section with antenna
Antenna Top Section	X	12/7/2021	WET	N/A	N/A	Top section with antenna
Antenna Top Section	X	12/7/2021	WET	N/A	N/A	Top section with antenna
Antenna Top Section	X	12/7/2021	WET	N/A	N/A	Top section with antenna
Battery	X	12/7/2021	WET	Interstate 12V 12AH	N/A	Life strength (Weak)
GPS	X	12/7/2021	WET	N/A	N/A	Magnetic GPS

Lateral Antenna	X	12/7/2021	WET	N/A	N/A	
Lateral Antenna	X	12/7/2021	WET	N/A	N/A	
Lateral Antenna	X	12/7/2021	WET	N/A	N/A	
MasterLock	X	12/7/2021	WET	Masterlock	N/A	3210 keys
MasterLock	X	12/7/2021	WET	Masterlock	N/A	3210 keys
MasterLock	X	12/7/2021	WET	Masterlock	N/A	3210 keys
Misc. Wind Sensor parts	X	12/7/2021	WET	N/A	N/A	
Pressure Transducer	X	12/7/2021	WET	Keller Acculevel	106647	
Pressure Transducer	X	12/7/2021	WET	Keller Acculevel	151191	
Programmed Maxon VHF Radio	X	12/7/2021	WET	Maxon SD125EL V2	k171200385	New. Programmed with all frequencies
Programmed Maxon VHF Radio	X	12/7/2021	WET	Maxon SD125EL V2	k171200386	New. Programmed with all frequencies
Programmed Maxon VHF Radio	X	12/7/2021	WET	Maxon SD125EL V2	k171200382	New. Programmed with all frequencies
Programmed Maxon VHF Radio	X	12/7/2021	WET	Maxon SD125EL V2	k171200384	New. Programmed with all frequencies
Programmed Maxon VHF Radio	X	12/7/2021	WET	Maxon SD125EL V2	k171200381	New. Programmed with all frequencies
Programmed Maxon VHF Radio	X	12/7/2021	WET	Maxon SD125EL V2	030303312	Fair Condion (3Watts Forward, 0 Watts Reflected)
Radio Amplifier	X	12/7/2021	WET	PA3-1AB-HL	40005	

Repeater	X	12/7/2021	WET	Hydrolynx 50386	5026	Ritron Radio is installed
Repeater	X	12/7/2021	WET	Hydrolynx 50386	21269	ALERT 2 Encoder board (SN: 756RR), A2 Demodulator board, 2 ritron radios, and a maxon radio are installed in this transmitter.
Ritron Radio	X	12/7/2021	WET	Ritron DTX-145	A13925	Programmed
Signal Conditioning Board	X	12/7/2021	WET	Hydrolynx 6694V0	0545	
Signal Conditioning Board	X	12/7/2021	WET	Hydrolynx 6694V0	1019	
Signal Conditioning Box	X	12/7/2021	WET	Hydrolynx	N/A	
Signal Conditioning Box	X	12/7/2021	WET	Hydrolynx	N/A	
Signal Conditioning Box	X	12/7/2021	WET	Hydrolynx	N/A	
Signal Conditioning Box	X	12/7/2021	WET	High Sierra	N/A	
Signal Conditioning Box	X	12/7/2021	WET	High Sierra	N/A	
Solar panel	X	12/7/2021	WET	5W 21.6V	AP0910-SMS-003	
Solar Panel	X	12/7/2021	WET	Shell ST5	021445R1220478679	
Solar Panel	X	12/7/2021	WET	BP Solar SX310M	C1071008545258	Used but good condition
Solar panel	X	12/7/2021	WET	Solartech SPM010P	140725010440	
Solar Panel	X	12/7/2021	WET	Solarland SLP020-12U	N/A	

Solar Panel Mount for Standpipe	X	12/7/2021	WET	Hydrolynx	N/A	
Solar Regulator	X	12/7/2021	WET	Morningstar Sunguard	N/A	
Solar Regulator	X	12/7/2021	WET	Protech	N/A	
Tipping Bucket	X	12/7/2021	WET	Campbell Scientific TR525USW	41322-609	
Tipping Bucket	X	12/7/2021	WET	Hydrolynx 5050P-MS	N/A	With top section as well
Tipping Bucket	X	12/7/2021	WET	Hydrolynx 5050P-MS	N/A	Used but good condition
Tipping Bucket Metal Screen Set	X	12/7/2021	WET	Hydrolynx	N/A	
Tipping Bucket Metal Screen Set	X	12/7/2021	WET	Hydrolynx	N/A	
Tipping Bucket Metal Screen Set	X	12/7/2021	WET	Hydrolynx	N/A	
Tipping Bucket Metal Screen Set	X	12/7/2021	WET	Hydrolynx	N/A	
Transmitter	X	12/7/2021	WET	Hydrolynx 5096	7462	
Transmitter	X	12/7/2021	WET	Hydrolynx 5096	1001	ALERT 2 Encoder board (SN: 11) installed in transmitter
VHF Polyphaser	X	12/7/2021	WET	Polyphaser IS-B50LN-C2-MA	N/A	
VHF Polyphaser	X	12/7/2021	WET	Polyphaser IS-B50LN-C2-MA	N/A	
VHF Polyphaser	X	12/7/2021	WET	Polyphaser IS-B50LN-C2-MA	N/A	
VHF Polyphaser	X	12/7/2021	WET	Polyphaser IS-B50LN-C2-MA	N/A	

ALERT2 Upgrade Kit	X	12/7/2021	WET	Hydrolynx G2012 Encoder	N/A	Contains A2 encoder board, GPS antenna, GPS polyphaser, cables and mounting kit
ALERT2 Upgrade Kit	X	12/7/2021	WET	Hydrolynx G2012 Encoder	N/A	Contains A2 encoder board, GPS antenna, GPS polyphaser, cables and mounting kit

9. APPENDIX C. DETAILED INVENTORY OF DEPLOYED EQUIPMENT

Station ID	Station Location	Asset	Accounted For	Date Inspected	Make/ Model Number	Serial Number
2710	Highlands Ranch WTP WX	Standpipe	X	11/12/2019	Hydrolynx Standpipe	
		Solar Panel	X	11/12/2019	Solarland	
		Transmitter	X	11/12/2019	Hydrolynx 5096	
		Radio	X	11/12/2019	Maxon SD125EL V2	
		Antenna	X	11/12/2019	N/A	
		Temp/RH Sensor	X	11/12/2019	Vaisala	
		Wind Sensor	X	11/12/2019	Young	
		Tipping Bucket	X	11/12/2019	High Sierra 2400 Tipping Bucket	
2730	Salisbury Park WX	Standpipe	X	11/12/2019	High Sierra Standpipe	
		Solar Panel	X	11/12/2019	Solarland	
		Transmitter	X	11/12/2019	Hydrolynx 5096	
		Radio	X	11/12/2019	Maxon SD125EL V2	
		Antenna	X	11/12/2019	N/A	
		PT/ Radar	X	11/12/2019	N/A	
		Tipping Bucket	X	11/12/2019	High Sierra 2400 Tipping Bucket	
2750	Castle Rock WX	Enclosure	X	11/12/2019	Nema	
		Solar Panel	X	11/12/2019	Solarland	
		Transmitter	X	11/12/2019	Hydrolynx 5096	
		Radio	X	11/12/2019	Maxon SD125EL V2	
		Antenna	X	11/12/2019	N/A	
		Temp/RH Sensor	X	11/12/2019	Vaisala	
		Wind Sensor	X	11/12/2019	Young	
		Tipping Bucket	X	11/12/2019	Hydrolynx 5050P-MS	
10068	Antelope Creek	Standpipe	X	10/9/2019	High Sierra Standpipe	
		Solar Panel	X	10/9/2019	Solarland	
		Transmitter	X	10/9/2019	Hydrolynx 5096	5775

		ALERT 2 Board	X	10/9/2019	Hydrolynx A2 Encoder Board	A18021068
		Radio	X	10/9/2019	Maxon SD125EL V2	
		Antenna	X	10/9/2019	N/A	
		PT/ Radar	X	10/9/2019	Keller Acculevel	
		Tipping Bucket	X	10/9/2019	High Sierra 2400 Tipping Bucket	
2790	West Cherry Creek WX	Standpipe	X	10/9/2019	High Sierra Standpipe	
		Solar Panel	X	10/9/2019	Solarland	
		Transmitter	X	10/9/2019	Hydrolynx 5096	
		Radio	X	10/9/2019	Maxon SD125EL V2	
		Antenna	X	10/9/2019	N/A	
		PT/ Radar	X	8/30/2021	Keller Acculevel	
2810/10057	Pine Cliff	Standpipe	X	10/9/2019	Hydrolynx Standpipe	
		Solar Panel	X	10/9/2019	Solarland	
		Transmitter	X	10/9/2019	Campbell Scientific AL200	1897
		Radio	X	10/9/2019	Maxon SD125EL V2	
		Antenna	X	10/9/2019	N/A	
		PT/ Radar	X	10/9/2019	Campbell Radar	
		Tipping Bucket	X	10/9/2019	High Sierra 2400 Tipping Bucket	
2820/10094	Haskins Gulch	Standpipe	X	10/15/2019	Hydrolynx Standpipe	
		Solar Panel	X	10/15/2019	Solarland	
		Transmitter	X	10/15/2019	Hydrolynx 5096	6642
		Radio	X	10/15/2019	Maxon SD125EL V2	
		ALERT2 Board	X	9/7/2021	Hydrolynx A2 Encoder Board	
		Antenna	X	10/15/2019	N/A	
		PT/ Radar	X	10/15/2019	N/A	
		Tipping Bucket	X	10/15/2019	Hydrolynx 5050P-MS	
2840/10066	Sulphur Gulch	Standpipe	X	10/9/2019	High Sierra Standpipe	
		Solar Panel	X	10/9/2019	Solarland	
		Transmitter	X	10/9/2019	5096	6338
		ALERT 2 Board	X	10/9/2019	Hydrolynx A2 Encoder Board	788

		Radio	X	10/9/2019	Maxon SD125EL V2	
		Antenna	X	10/9/2019	N/A	
		PT/ Radar	X	10/9/2019	Druck	
		Tipping Bucket	X	10/9/2019	High Sierra 2400 Tipping Bucket	
2850/10092	Cherry Creek @ Bayou Gulch	Standpipe	X	10/9/2019	High Sierra Standpipe	
		Solar Panel	X	10/9/2019	Solarland	
		Transmitter	X	10/9/2019	Hydrolynx 5096	7871
		Radio	X	10/9/2019	Maxon SD125EL V2	
		ALERT2 Encoder	X	9/2/2021	Hydrolynx A2 Encoder Board	
		Antenna	X	10/9/2019	N/A	
		PT/ Radar	X	10/9/2019	Keller Acculevel	
		Tipping Bucket	X	10/9/2019	High Sierra 2400 Tipping Bucket	
2860	Cherry Creek @ Stroh Road	Standpipe	X	10/9/2019	High Sierra Standpipe	
		Solar Panel	X	10/9/2019	Solarland	
		Transmitter	X	10/9/2019	Hydrolynx 5096	6665
		Radio	X	10/9/2019	Maxon SD125EL V2	
		Antenna	X	10/9/2019	N/A	
		PT/ Radar	X	10/9/2019	Keller Acculevel	
		Tipping Bucket	X	10/9/2019	High Sierra 2400 Tipping Bucket	
2870	Cherry Creek @ Cottonwood	Standpipe	X	10/9/2019	High Sierra Standpipe	
		Solar Panel	X	10/9/2019	Solarland	
		Transmitter	X	10/9/2019	Hydrolynx 5096	6796
		Radio	X	10/9/2019	Maxon SD125EL V2	
		Antenna	X	10/9/2019	N/A	
		PT/ Radar	X	10/9/2019	Druck	
		Tipping Bucket	X	10/9/2019	High Sierra 2400 Tipping Bucket	
2880/10059	Happy Canyon Creek	Standpipe	X	10/9/2019	Hydrolynx Standpipe	
		Solar Panel	X	10/9/2019	Solarland	
		Transmitter	X	10/9/2019	Hydrolynx 5096	6667
		ALERT 2 Board	X	10/9/2019	Hydrolynx A2 Encoder Board	A18021028

		Radio	X	10/9/2019	Maxon SD125EL V2	
		Antenna	X	10/9/2019	N/A	
		PT/ Radar	X	10/9/2019	Keller Acculevel	
		Tipping Bucket	X	10/9/2019	Hydrolynx 5050P-MS	
2890/10093	Spruce Mountain Open Space	Standpipe	X	10/9/2019	Hydrolynx Standpipe	
		Solar Panel	X	10/9/2019	Solarland	
		Transmitter	X	10/9/2019	Hydrolynx 5096	5317
		ALERT2 Encoder	X	9/2/2021	Hydrolynx A2 Encoder Board	
		Radio	X	10/9/2019	Maxon SD125EL V2	
		Antenna	X	10/9/2019	N/A	
		PT/ Radar	X	10/9/2019	N/A	
		Tipping Bucket	X	10/9/2019	Hydrolynx 5050P-MS	
2900	Russellville Gulch	Standpipe	X	10/9/2019	Hydrolynx Standpipe	
		Solar Panel	X	10/9/2019	Solarland	
		Transmitter	X	10/9/2019	Hydrolynx 5096	8097
		Radio	X	10/9/2019	Maxon SD125EL V2	
		Amplifier	X	10/9/2019	Mirage B-34	BA2008120101
		Antenna	X	10/9/2019	N/A	
		PT/ Radar	X	10/9/2019	N/A	
		Tipping Bucket	X	10/9/2019	Hydrolynx 5050P-MS	
2910	East Cherry Creek	Standpipe	X	10/9/2019	Hydrolynx Standpipe	
		Solar Panel	X	10/9/2019	Solarland	
		Transmitter	X	10/9/2019	Hydrolynx 5096	8099
		Radio	X	10/9/2019	Maxon SD125EL V2	
		Antenna	X	10/9/2019	N/A	
		PT/ Radar	X	10/9/2019	N/A	
		Tipping Bucket	X	10/9/2019	Hydrolynx 5050P-MS	
2920	West Cherry Head	Standpipe	X	10/9/2019	Hydrolynx Standpipe	
		Solar Panel	N/A	N/A	N/A	
		Transmitter	X	10/9/2019	Hydrolynx 5096	6878

		Radio	X	10/9/2019	Maxon SD125EL V2	
		Antenna	X	10/9/2019	N/A	
		PT/ Radar	X	10/9/2019	N/A	
		Tipping Bucket	X	10/9/2019	Hydrolynx 5050P-MS	
2930	Spring Valley Road WX	Standpipe	X	11/12/2019	High Sierra Standpipe	
		Solar Panel	X	11/12/2019	Solarland	
		Transmitter	X	11/12/2019	Hydrolynx 5096	
		Radio	X	11/12/2019	Maxon SD125EL V2	
		Antenna	X	11/12/2019	N/A	
		Temp/RH Sensor	X	11/12/2019	Vailsala	
		Wind Sensor	X	11/12/2019	Young	
		Tipping Bucket	X	11/12/2019	High Sierra 2400 Tipping Bucket	
2940	Willow Creek	Standpipe	X	10/9/2019	Hydrolynx Standpipe	
		Solar Panel	X	10/9/2019	Solarland	
		Transmitter	X	10/9/2019	Hydrolynx 5096	7870
		Radio	X	10/9/2019	Maxon SD125EL V2	
		Antenna	X	10/9/2019	N/A	
		PT/ Radar	X	10/9/2019	N/A	
		Tipping Bucket	X	10/9/2019	Hydrolynx 5050P-MS	
2950	DC Public Works	Standpipe	X	10/15/2019	Hydrolynx Standpipe	
		Solar Panel	X	10/15/2019	Solarland	
		Transmitter	X	10/15/2019	Hydrolynx 5096	8100
		Radio	X	10/15/2019	Maxon SD125EL V2	
		Antenna	X	10/15/2019	N/A	
		PT/ Radar	X	10/15/2019	N/A	
		Tipping Bucket	X	10/15/2019	Hydrolynx 5050P-MS	
2960	Indian Creek	Standpipe	X	10/15/2019	Hydrolynx Standpipe	
		Solar Panel	X	10/15/2019	Solarland	
		Transmitter	X	10/15/2019	Hydrolynx 5096	8093

		Radio	X	10/15/2019	Maxon SD125EL V2	
		Antenna	X	10/15/2019	N/A	
		PT/ Radar	X	10/15/2019	N/A	
		Tipping Bucket	X	10/15/2019	Hydrolynx 5050P-MS	
2970	Rampart Range Road	Standpipe	X	10/15/2019	Hydrolynx Standpipe	
		Solar Panel	X	10/15/2019	Solarland	
		Transmitter	X	10/15/2019	Campbell Scientific CR800	23629
		Solar Regulator	X	10/15/2019	Campbell Scientific CH100	8519
		Radio	X	10/15/2019	Quake Q1000-RLM (Sutron)	1120-5004
		Antenna	X	10/15/2019	N/A	
		PT/ Radar	X	10/15/2019	N/A	
		Tipping Bucket	X	10/15/2019	Hydrolynx 5050P-MS	
2980	Dakan Road	Standpipe	X	10/15/2019	Hydrolynx Standpipe	
		Solar Panel	X	10/15/2019	Solarland	
		Transmitter	X	10/15/2019	Hydrolynx 5096	
		Radio	X	10/15/2019	Maxon SD125EL V2	
		Antenna	X	10/15/2019	N/A	
		PT/ Radar	X	10/15/2019	Druck	
		Tipping Bucket	X	10/15/2019	Hydrolynx 5050P-MS	
2990/10065	Tomah Road	Standpipe	X	10/15/2019	Hydrolynx Standpipe	
		Solar Panel	X	10/15/2019	Solarland	
		Transmitter	X	10/15/2019	Hydrolynx 5096	
		ALERT2 Encoder	X	5/19/2020	Hydrolynx ALERT2 Encoder Board	
		Radio	X	10/15/2019	Maxon SD125EL V2	
		Antenna	X	10/15/2019	N/A	
		PT/ Radar	X	10/15/2019	N/A	
		Tipping Bucket	X	10/15/2019	Hydrolynx 5050P-MS	
3010	East Plum Creek @ HWY 105 WX	Enclosure	X	11/12/2019	Nema	
		Solar Panel	X	11/12/2019	Solarland	

		Transmitter	X	11/12/2019	Campbell CR1000	
		Radio	X	11/12/2019	Maxon SD125EL V2	
		Antenna	X	11/12/2019	N/A	
		Temp/RH Sensor	X	11/12/2019	Vaisala	
		Wind Sensor	X	11/12/2019	Young	
		PT/ Radar	X	11/12/2019	Campbell Scientific PT	
		Tipping Bucket	X	11/12/2019	Hydrolynx 5050P-MS	
3030	Bingham Lake Park WX	Standpipe	X	11/12/2019	Hydrolynx Standpipe	
		Solar Panel	X	11/12/2019	Solarland	
		Transmitter	X	11/12/2019	Hydrolynx 5096	
		Radio	X	11/12/2019	Maxon SD125EL V2	
		Antenna	X	11/12/2019	N/A	
		Temp/RH Sensor	X	11/12/2019	Vaisala	
		Wind Sensor	X	11/12/2019	Young	
3040/10056	East Cherry Creek @ Russellville Road	Tipping Bucket	X	11/12/2019	Hydrolynx 5050P-MS	
		Standpipe	X	10/15/2019	Hydrolynx Standpipe	
		Solar Panel	X	10/15/2019	Solarland	
		Transmitter	X	10/15/2019	Hydrolynx 5096	8098
		ALERT 2 Board	X	10/15/2019	Hydrolynx A2 Encoder Board	787
		Radio	X	10/15/2019	Maxon SD125EL V2	
		Antenna	X	10/15/2019	N/A	
3070/10055	Newlin Gulch @ Jordan Road	PT/ Radar	X	10/15/2019	Keller Acculevel	
		Tipping Bucket	X	10/15/2019	Hydrolynx 5050P-MS	
		Standpipe	X	10/9/2019	Hydrolynx Standpipe	
		Solar Panel	X	10/9/2019	Solarland	
		Transmitter	X	10/9/2019	Campbell Scientific CR800	20943
		ALERT 2 Encoder	X	10/9/2019	Campbell Scientific AL200	

		Radio	X	10/9/2019	Ritron DTX-145	
		Radio	X	10/9/2019	Campbell Scientific RF450	8787724
		Antenna	X	10/9/2019	N/A	
		PT/ Radar	X	10/9/2019	Campbell Scientific PT	
		Tipping Bucket	X	10/9/2019	Hydrolynx 5050P-MS	
3080/10067	Tallman Gulch @ Heritage Regional	Standpipe	X	10/9/2019	Hydrolynx Standpipe	
		Solar Panel	X	10/9/2019	Solarland	
		Transmitter	X	10/9/2019	Hydrolynx 5096	1018
		ALERT 2 Board	X	10/9/2019	Hydrolynx A2 Encoder Board	A18021099
		Radio	X	10/9/2019	Maxon SD125EL V2	
		Antenna	X	10/9/2019	N/A	
		PT/ Radar	X	10/9/2019	Keller Acculevel	
		Tipping Bucket	X	10/9/2019	Hydrolynx 5050P-MS	
3090/ 10054	Big Dry Creek @ Heritage Regional	Standpipe	X	10/9/2019	Hydrolynx Standpipe	
		Solar Panel	X	10/9/2019	Solarland	
		Transmitter	X	10/9/2019	Hydrolynx 5096	1420
		ALERT 2 Board	X	10/9/2019	Hydrolynx A2 Encoder Board	828
		Radio	X	10/9/2019	Maxon SD125EL V2	
		Antenna	X	10/9/2019	N/A	
		PT/ Radar	X	10/9/2019	Keller Acculevel	
		Tipping Bucket	X	10/9/2019	Hydrolynx 5050P-MS	
3100	Castle Rock Repeater	Enclosure	X	10/15/2019	Nema	
		Solar Panel	X	10/15/2019	Solarland	
		Transmitter	X	10/15/2019	5096	
		Radio	X	10/15/2019	Maxon SD125EL V2	
		Antenna	X	10/15/2019	N/A	
		PT/ Radar	X	10/15/2019	N/A	
		Tipping Bucket	X	10/15/2019	Hydrolynx 5050P-MS	
10014	Upper Sellers Gulch	Standpipe	X	10/9/2019	Hydrolynx Standpipe	
		Solar Panel	X	10/9/2019	Solarland	

		Transmitter	X	10/9/2019	Hydrolynx 5096	1203
		ALERT 2 Board	X	10/9/2019	Hydrolynx A2 Encoder Board	11
		Radio	X	10/9/2019	Maxon SD125EL V2	
		Antenna	X	10/9/2019	N/A	
		PT/ Radar	X	10/9/2019	N/A	
		Tipping Bucket	X	10/9/2019	Hydrolynx 5050P-MS	
10015	Sellers Gulch at Haystack	Standpipe	X	10/9/2019	Hydrolynx Standpipe	
		Solar Panel	X	10/9/2019	Solarland	
		Transmitter	X	10/9/2019	Hydrolynx 5096	1201
		ALERT 2 Board	X	10/9/2019	Hydrolynx A2 Encoder Board	5
		Radio	X	10/9/2019	Maxon SD125EL V2	
		Antenna	X	10/9/2019	N/A	
		PT/ Radar	X	10/9/2019	Druck	
		Tipping Bucket	X	10/9/2019	Hydrolynx 5050P-MS	
10029	Plum Creek @ Sedalia	Standpipe	X	10/15/2019	Hydrolynx Standpipe	
		Solar Panel	X	10/15/2019	Solarland	
		Transmitter	X	10/15/2019	Hydrolynx 5096	6648
		Radio	X	10/15/2019	Maxon SD125EL V2	
		Antenna	X	10/15/2019	N/A	
		PT/ Radar	X	10/15/2019	Sniffer	
		Tipping Bucket	X	10/15/2019	Hydrolynx 5050P-MS	
10039	Fire Station #47	Standpipe	X	10/15/2019	Hydrolynx Standpipe	
		Solar Panel	X	10/15/2019	Solarland	
		Transmitter	X	10/15/2019	Hydrolynx 5096	6681
		ALERT 2 Board	X	10/15/2019	Hydrolynx A2 Encoder Board	570
		Radio	X	10/15/2019	Maxon SD125EL V2	
		Antenna	X	10/15/2019	N/A	
		PT/ Radar	X	10/15/2019	N/A	
		Tipping Bucket	X	10/15/2019	Hydrolynx 5050P-MS	
10044		Standpipe	X	10/9/2019	Hydrolynx Standpipe	

	East Plum Creek @ Columbine Open Space	Solar Panel	X	10/9/2019	Solarland	
		Transmitter	X	10/9/2019	Hydrolynx 50386	21185
		ALERT 2 Board	X	10/9/2019	Hydrolynx A2 Encoder Board	544
		Radio	X	10/9/2019	Maxon SD125EL V2	
		Antenna	X	10/9/2019	N/A	
		PT/ Radar	X	10/9/2019	Campbell Scientific Radar	
		Tipping Bucket	X	10/9/2019	Hydrolynx 5050P-MS	
10045	East/West Trailhead	Standpipe	X	10/15/2019	Hydrolynx Standpipe	
		Solar Panel	X	10/15/2019	Solarland	
		Transmitter	X	10/15/2019	Hydrolynx 5096	8096
		ALERT 2 Board	X	10/15/2019	Hydrolynx A2 Encoder Board	752
		Radio	X	10/15/2019	Maxon SD125EL V2	
		Antenna	X	10/15/2019	N/A	
		PT/ Radar	X	10/15/2019	N/A	
		Tipping Bucket	X	10/15/2019	Hydrolynx 5050P-MS	
10077	Baldwin Gulch Dam	Enclosure	X	8/6/2019	NEMA	
		Solar Panel	X	8/6/2019	Solarland	
		Transmitter	X	8/6/2019	Campbell AL200	
		Radio	X	8/6/2019	Maxon SD125EL V2	
		Antenna	X	8/6/2019	N/A	
		Tipping Bucket	X	8/6/2019	Campbell Scientific	TE525MM-L
		PT	X	8/6/2019	Campbell CS451	
		Battery	X	8/6/2019	18 AH Interstate Battery	
10080	WCC-7 Dam	Enclosure	X	11/8/2019	NEMA	
		Solar Panel	X	11/8/2019	Solarland	
		Transmitter	X	11/8/2019	Campbell AL200	
		Radio	X	11/8/2019	Maxon SD125EL V2	
		Antenna	X	11/8/2019	N/A	
		Tipping Bucket	X	11/8/2019	Campbell Scientific	TE525MM-L
		PT	X	11/8/2019	Campbell CS451	

		Battery	X	11/8/2019	18 AH Interstate Battery	
10081	FP-P1 Dam	Enclosure	X	11/7/2019	NEMA	
		Solar Panel	X	11/7/2019	Solarland	
		Transmitter	X	11/7/2019	Campbell AL200	
		Radio	X	11/7/2019	Maxon SD125EL V2	
		Antenna	X	11/7/2019	N/A	
		Tipping Bucket	X	11/7/2019	Campbell Scientific	TE525MM-L
		PT	X	11/7/2019	Campbell CS451	
		Battery	X	11/7/2019	18 AH Interstate Battery	
10082	FP-S1 Dam	Enclosure	X	11/7/2019	NEMA	
		Solar Panel	X	11/7/2019	Solarland	
		Transmitter	X	11/7/2019	Campbell AL200	
		Radio	X	11/7/2019	Maxon SD125EL V2	
		Antenna	X	11/7/2019	N/A	
		Tipping Bucket	X	11/7/2019	Campbell Scientific	TE525MM-L
		PT	X	11/7/2019	Campbell CS451	
		Battery	X	11/7/2019	18 AH Interstate Battery	