

CLEAN RIVERS PROGRAM MONITORING

THE MEADOWS CENTER FOR WATER AND THE ENVIRONMENT
AND WIMBERLEY VALLEY WATERSHED ASSOCIATION

Thursday, March 23, 2017

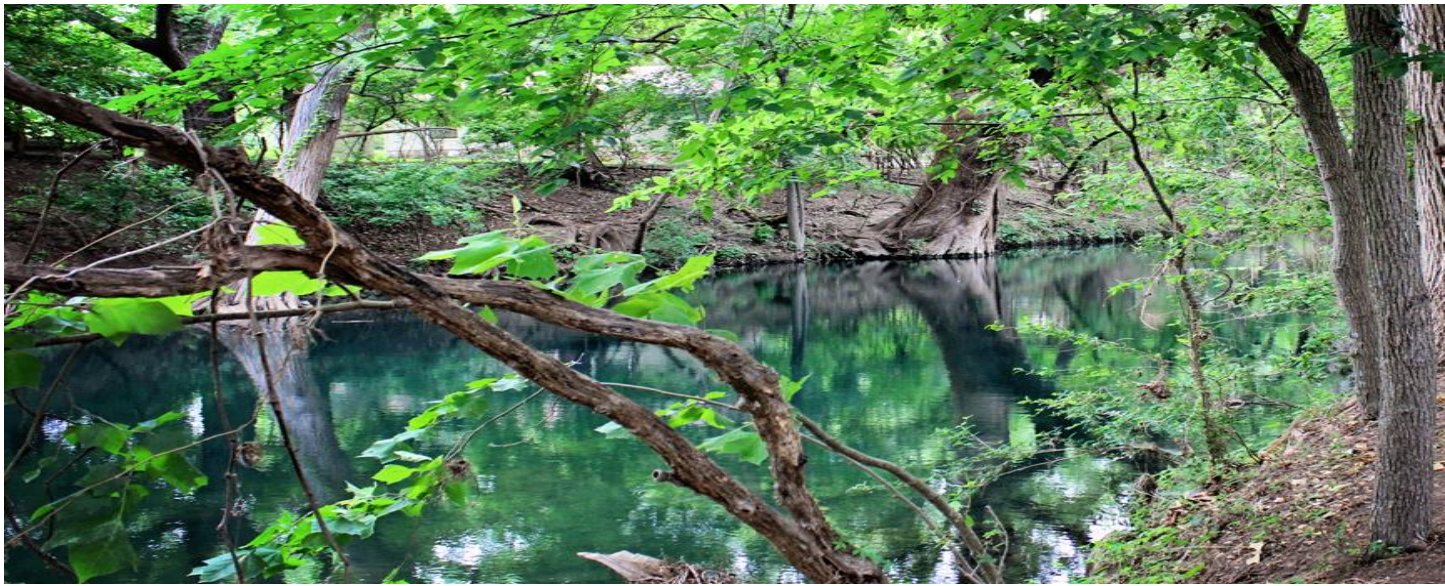
No natural resource is more important to our future than Water. Water is what we do.

RESEARCH | STEWARDSHIP | SERVICE | EDUCATION | SERVICE



THE MEADOWS CENTER
FOR WATER AND THE ENVIRONMENT

TEXAS STATE UNIVERSITY



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Fecal Coliform at Cypress Creek/Blanco River Confluence

- E. Coli values on Cypress Creek in downtown Wimberley are consistently higher than those upstream
- Highest numbers at the Cypress Creek/Blanco River confluence
- Data trends show a steady increase in fecal coliform in these locations

WIMBERLEY VALLEY WATERSHED ASSOCIATION

- Clean Rivers Partner with GBRA
- GBRA monitors one site on Cypress Creek
 - Site 12674 “Cypress Creek at RR 12 Downtown”
- Added 4 additional sites from Jacobs Well to Blanco River confluence
- WVWA supports CRP and additional Blanco monitoring
- Additional monitoring began at Deer Creek/Blanco River confluence in October 2016

WVWA CRP Cypress Creek Sites



12677-Cypress Creek at Jacobs Well

12676-Cypress Creek at RR12

12675-Cypress Creek at Blue Hole

12674-GBRA - Cypress Creek at RR12 Downtown

12673-Cypress Creek at Blanco River

Legend

-  CRP Sites
-  Stream
-  World Street Map

0 0.75 1.5 3 Miles

WVWA CRP Blanco River Sites



12665-Blanco River at Fischer Store Rd.



12661-Blanco River at RR12



21804-Blanco River at Deer Creek

12663-Blanco River at Pioneer Town



12660-Blanco River at CR174



Legend



CRP Sites

Stream

World Street Map

0

1.25

2.5

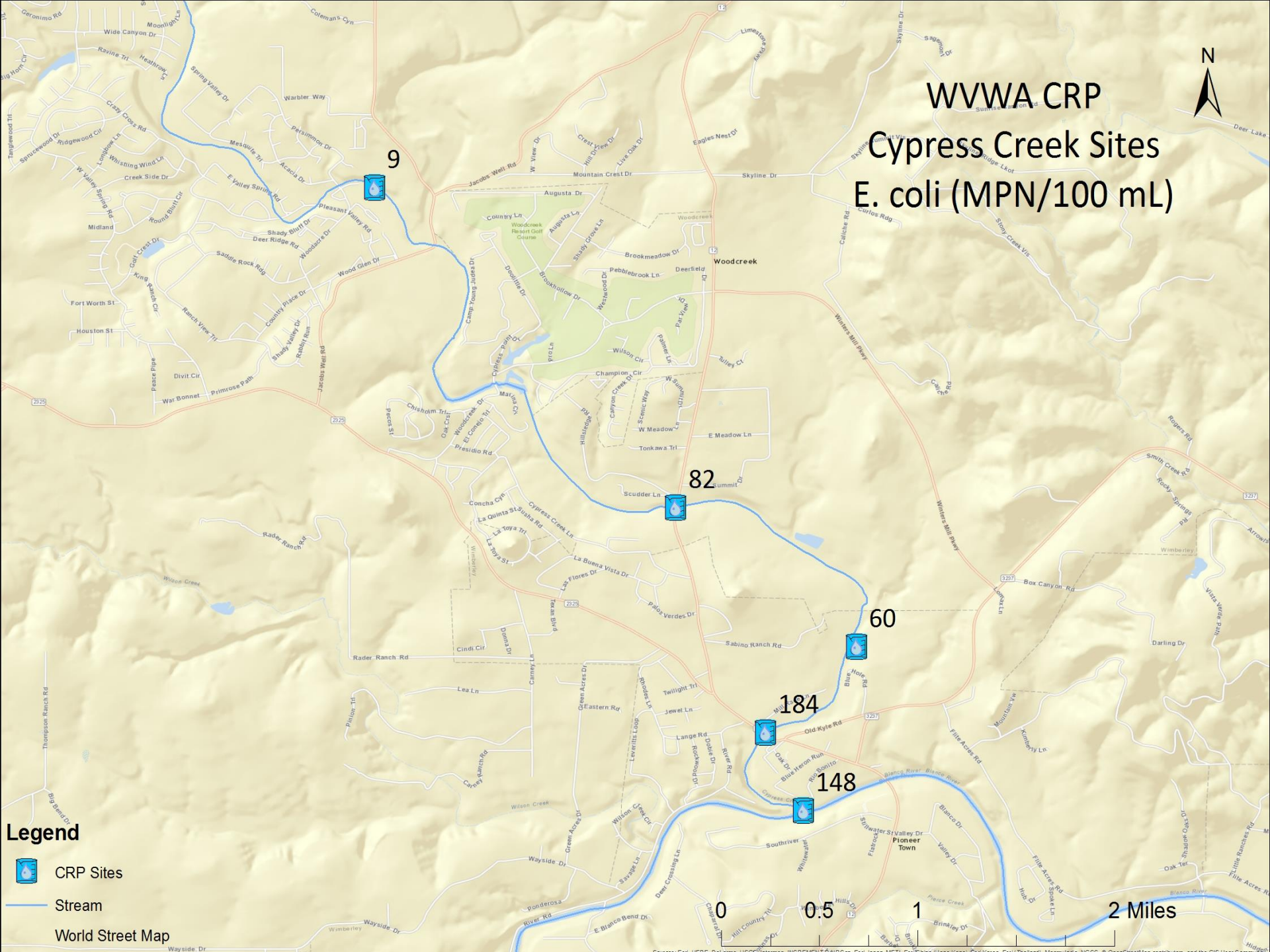
5 Miles

Cypress Creek Data

Cypress Creek Data 3/17/1998 – 1/11/2017				
Parameter	Number of Samples	Mean+StDev	Min	Max
Flow (CFS)	370	12.5 ± 54.8	0	957
DO (mg/L)	453	6.9 ± 2.0	0.7	12
Total Suspended Solids (mg/L)	434	2.5 ± 4.0	0.5	48.3
Conductivity µS/cm	464	560 ± 59	369	916
Temperature (°C)	474	20.8 ± 4.0	8.4	32.4
pH	447	7.5 ± 0.4	6.3	9
E. coli (MPN/100 mL)	445	62 (Geomean)	1	3800
Ammonia (mg/L)	425	0.09 ± 0.08	0.02	0.92
Nitrates (mg/L)	441	0.30 ± 0.30	0.02	1.73
Total Phosphorus (mg/L)	428	0.04 ± 0.04	0.005	0.6

Blanco River Data

Blanco River Data 1/13/1998 – 1/11/2017				
Parameter	Number of Samples	Mean+ StDev	Min	Max
Flow (CFS)	299	143.30 ± 492	2	4430
DO (mg/L)	353	8.79 ± 1.63	3.5	13.7
Total Suspended Solids (mg/L)	319	4.06 ± 6.69	0.5	49.7
Conductivity µS/cm	371	480 ± 61	341	838
Temperature (°C)	373	21.8 ± 6.1	9.1	36.5
pH	356	8.0 ± 0.3	6.8	9.3
E. coli (MPN/100 mL)	315	60 (Geomean)	2	4800
Ammonia (mg/L)	308	0.08 ± 0.06	0.02	0.3
Nitrates (mg/L)	317	0.28 ± 0.22	0.02	1.07
Total Phosphorus (mg/L)	313	0.04 ± 0.02	0.01	0.2



WVWA CRP

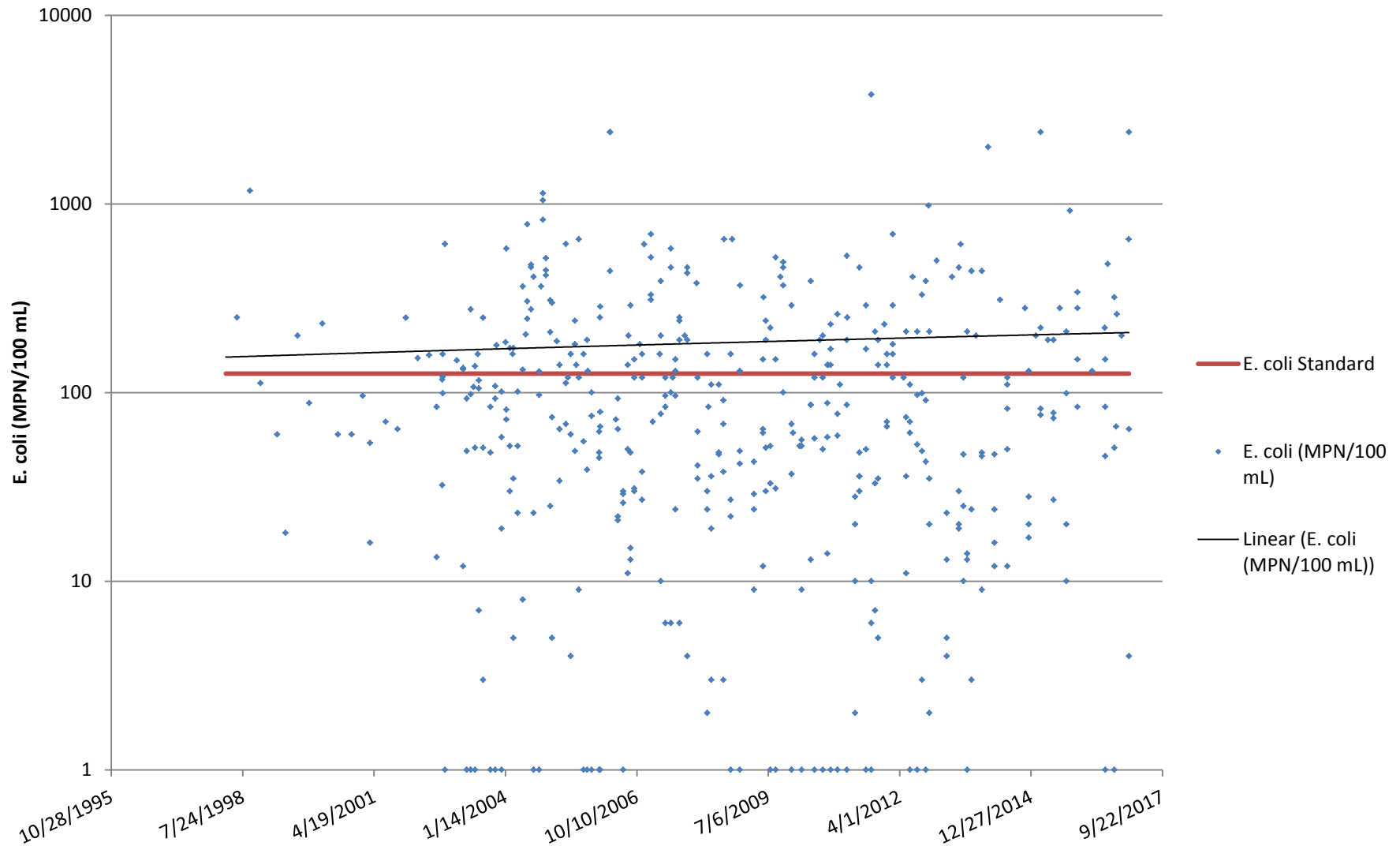
Cypress Creek Sites

E. coli (MPN/100 mL)

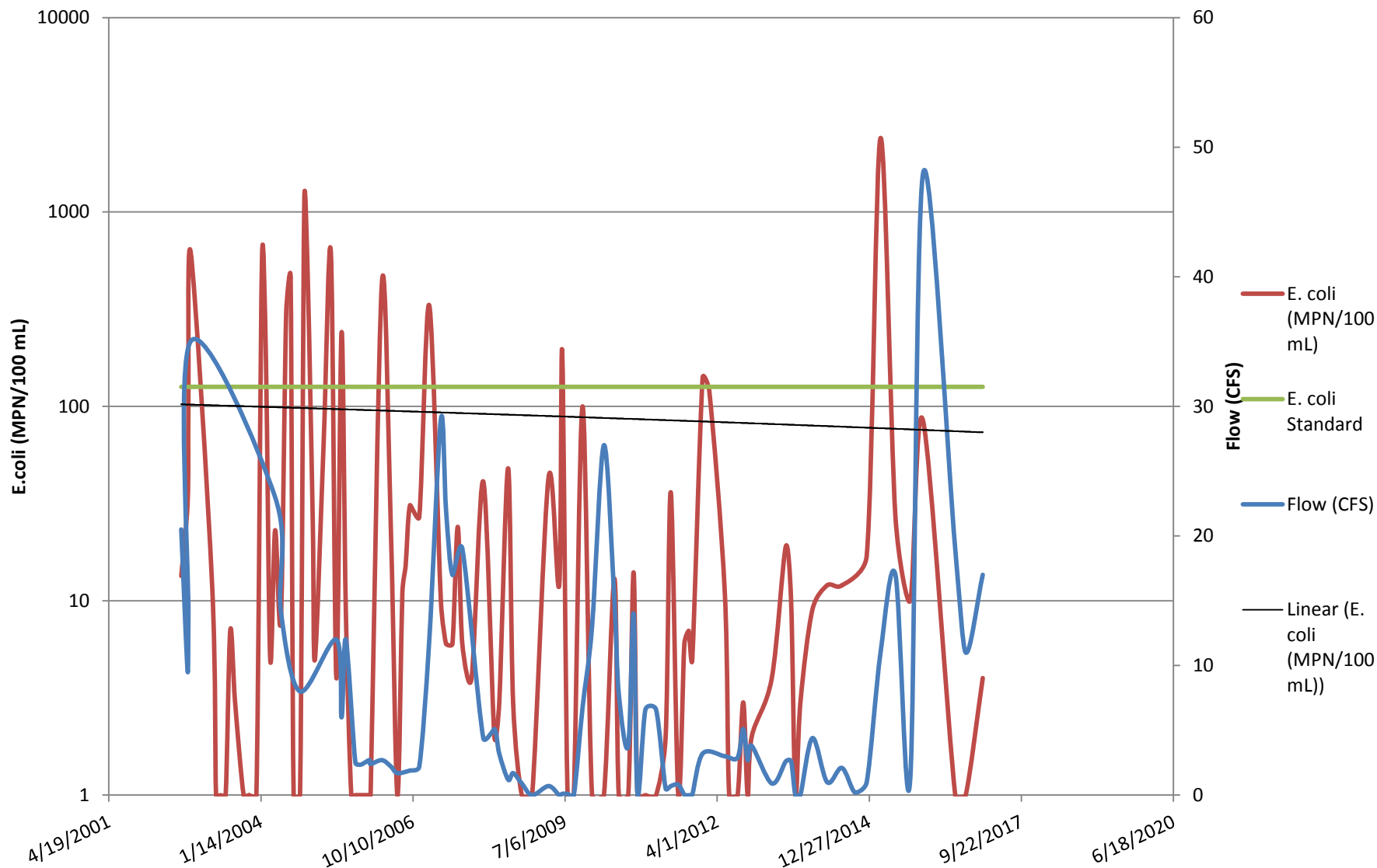


- Legend**
-  CRP Sites
 -  Stream
 -  World Street Map

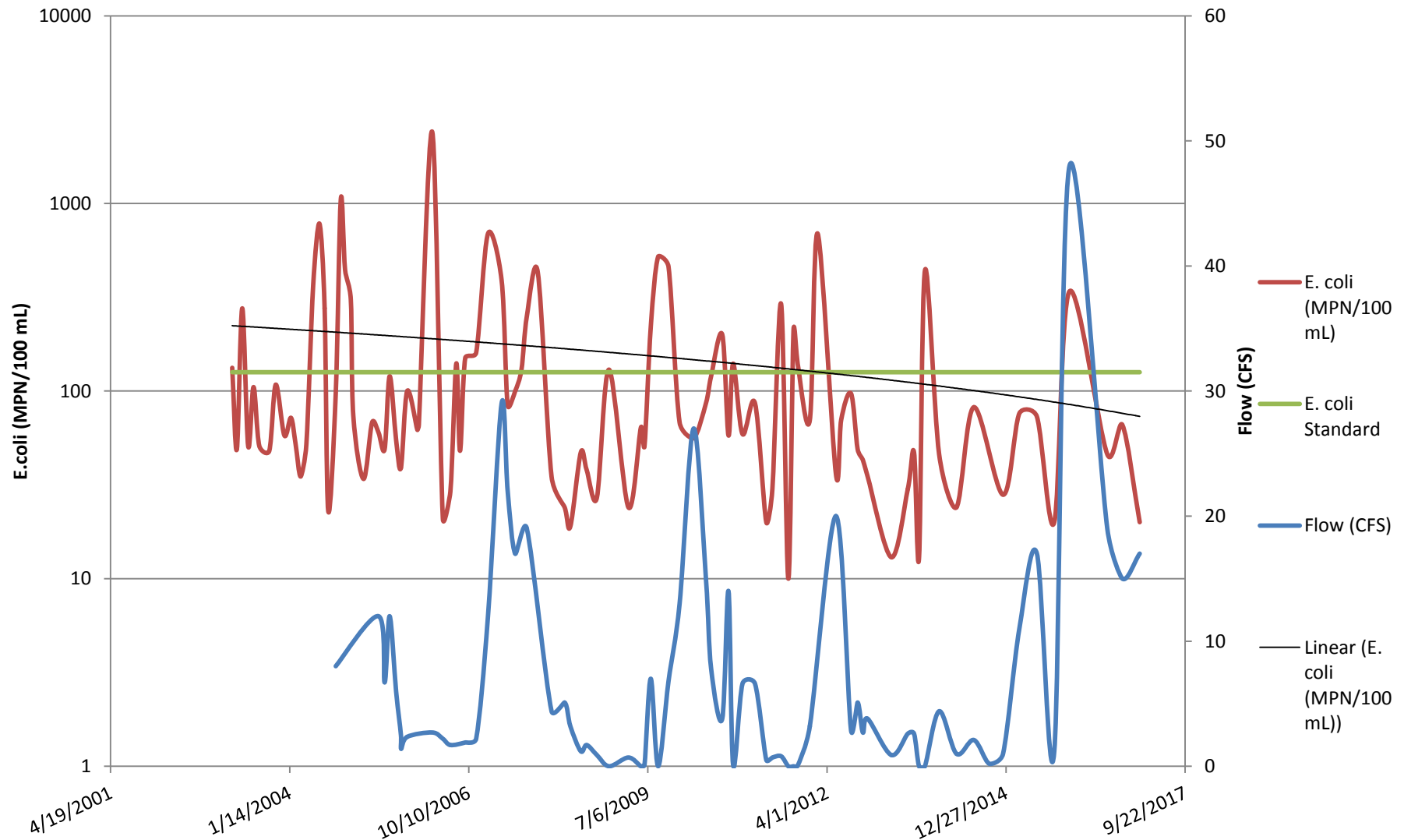
Fecal Coliform on Cypress Creek – Total



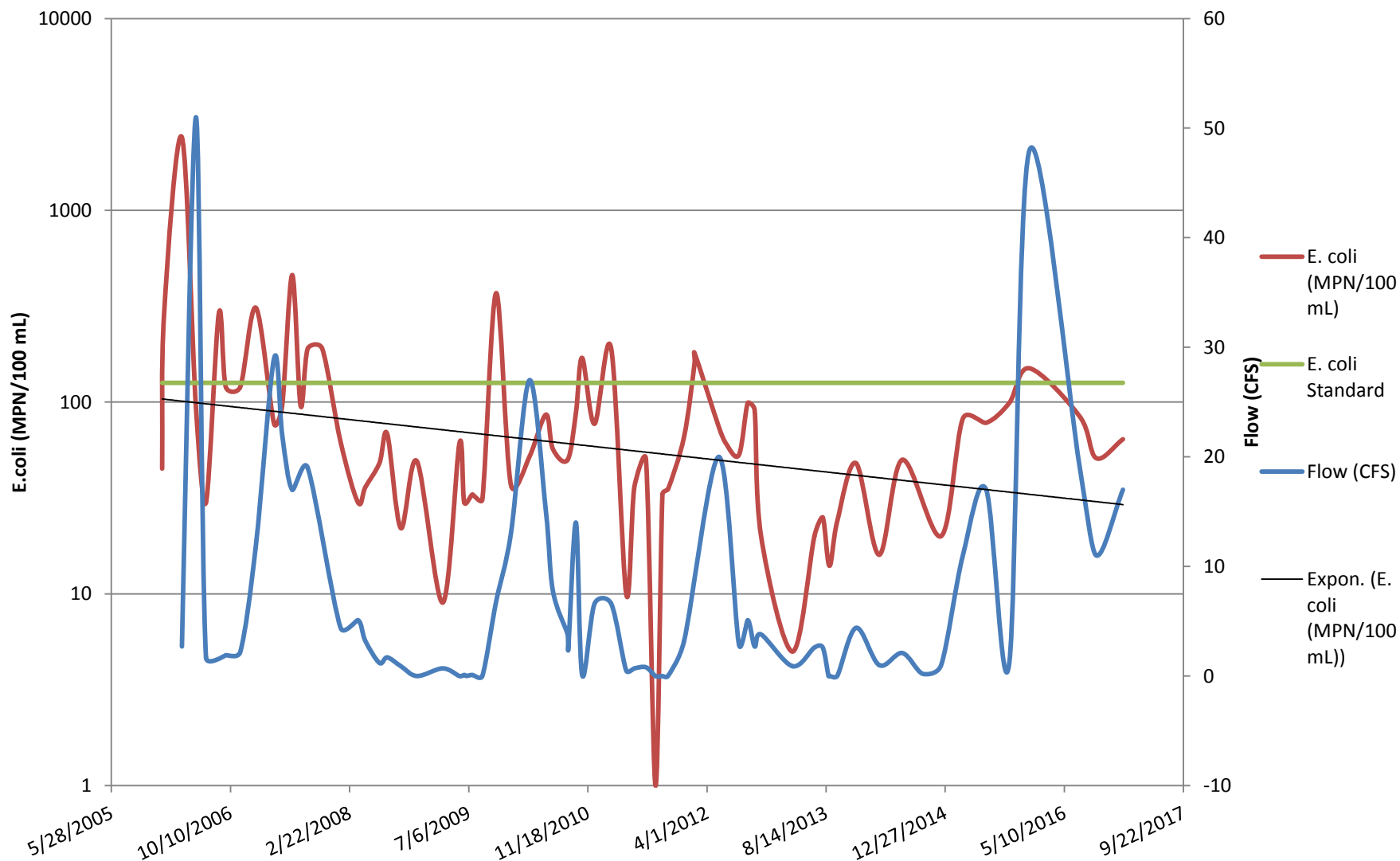
Fecal Coliform at Jacob's Well



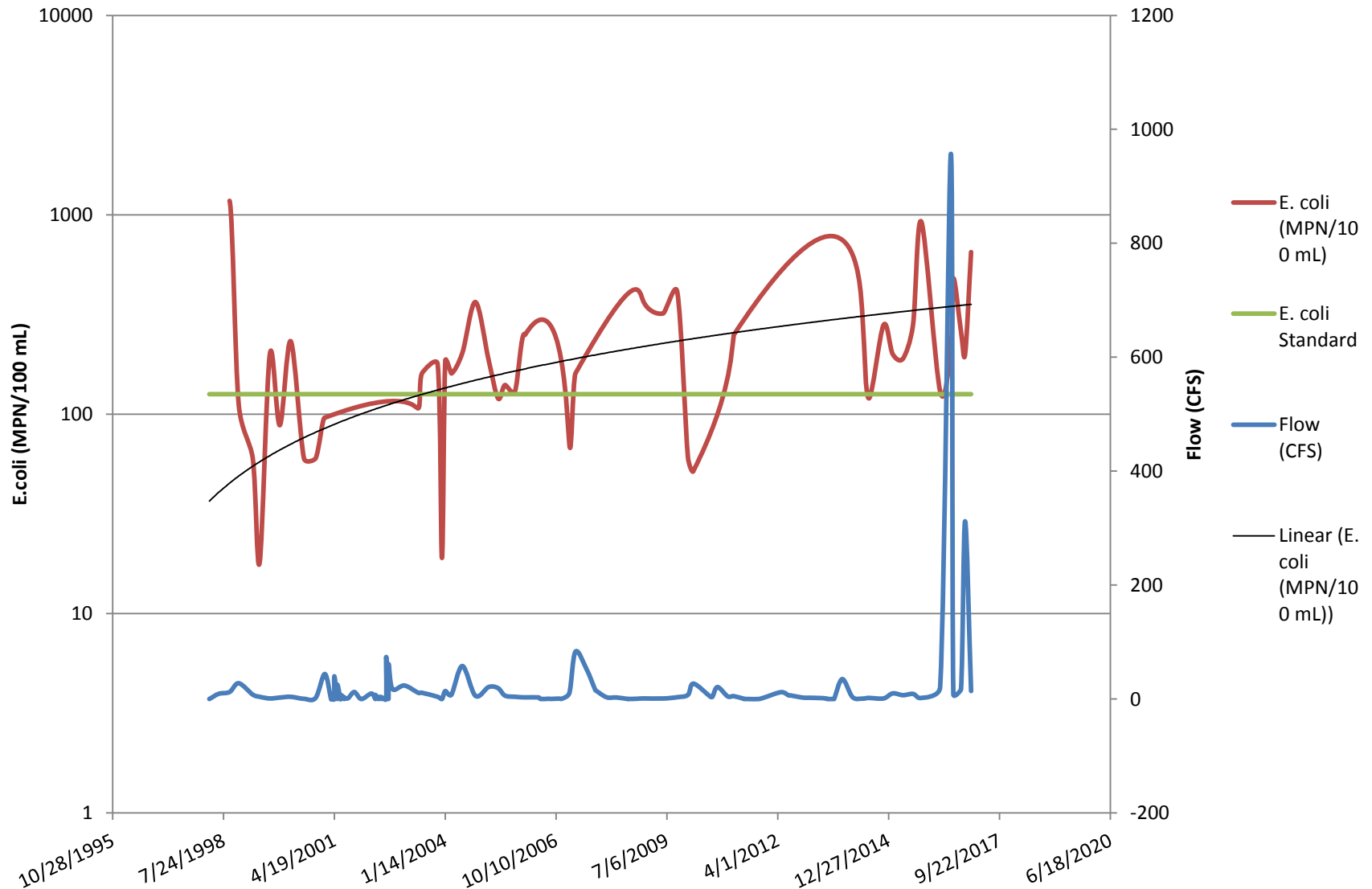
Fecal Coliform at Leeway Cottages (RR 12 Upstream)



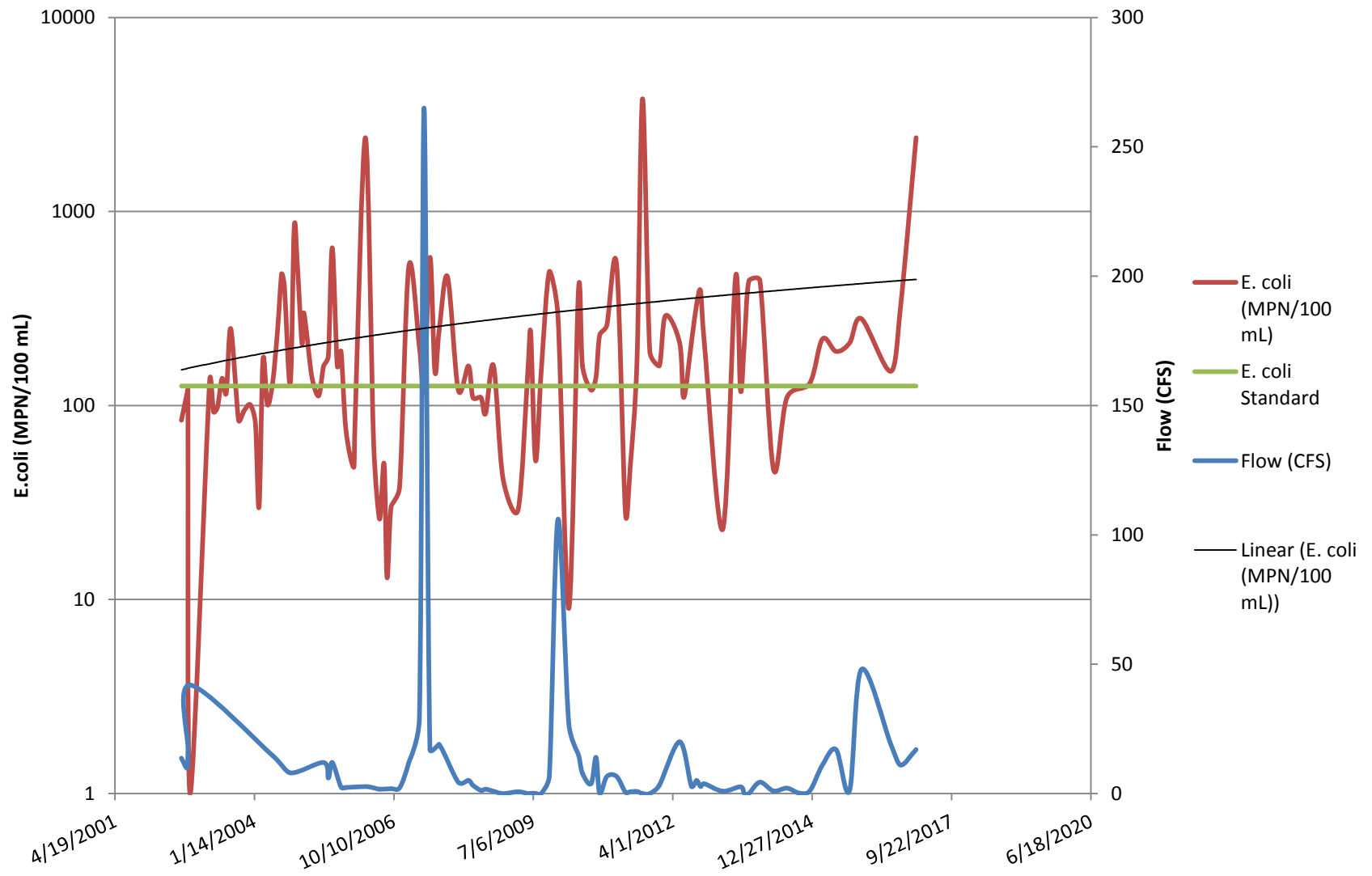
Fecal Coliform at Blue Hole



Fecal Coliform at Downtown Wimberley



Fecal Coliform at Cypress/Blanco Confluence



WVWA CRP Blanco River Sites E. coli (MPN/100 mL)



49



64



94



38

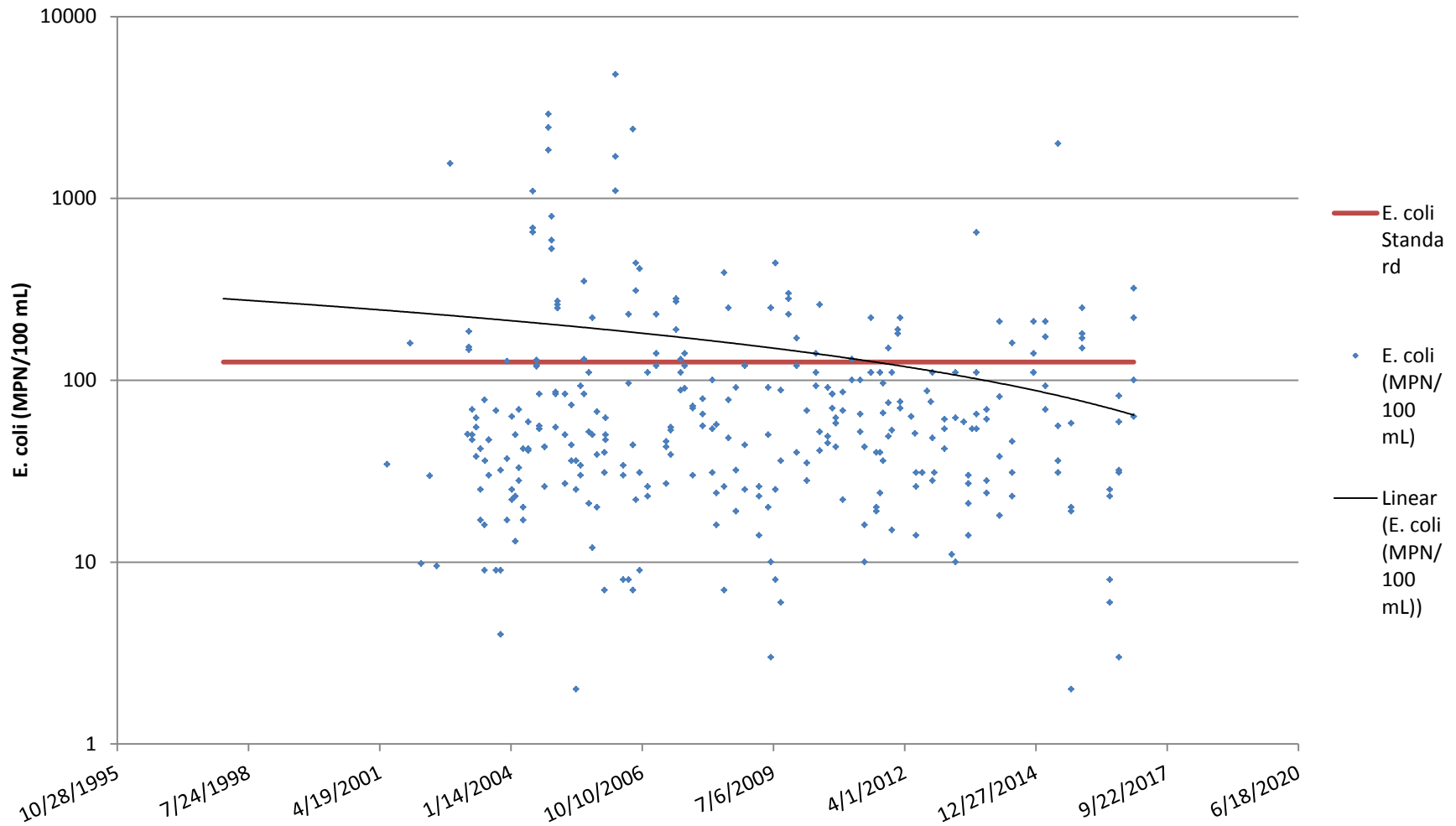


Legend

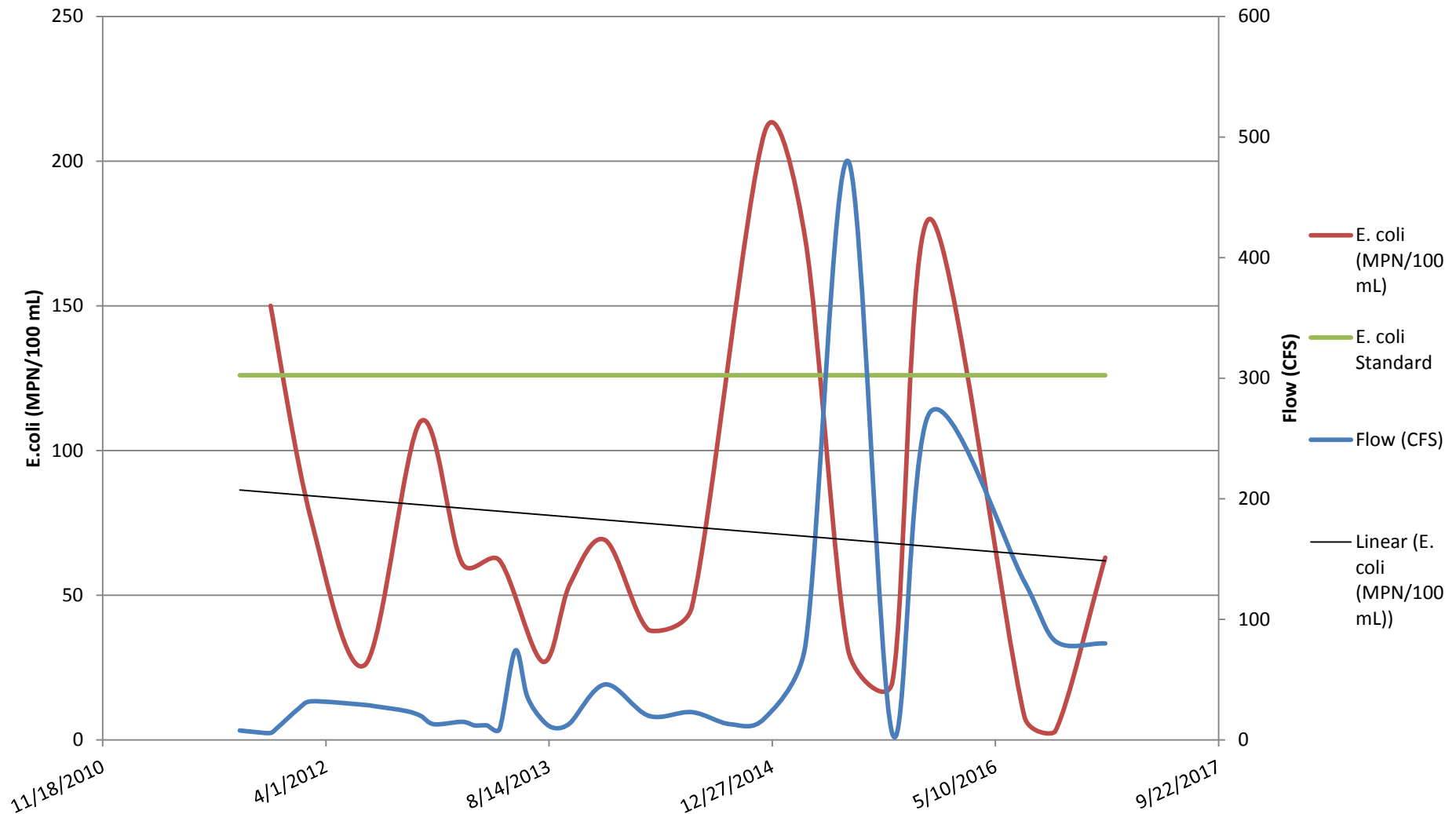
-  CRP Sites
-  Stream
-  World Street Map

0 1.25 2.5 5 Miles

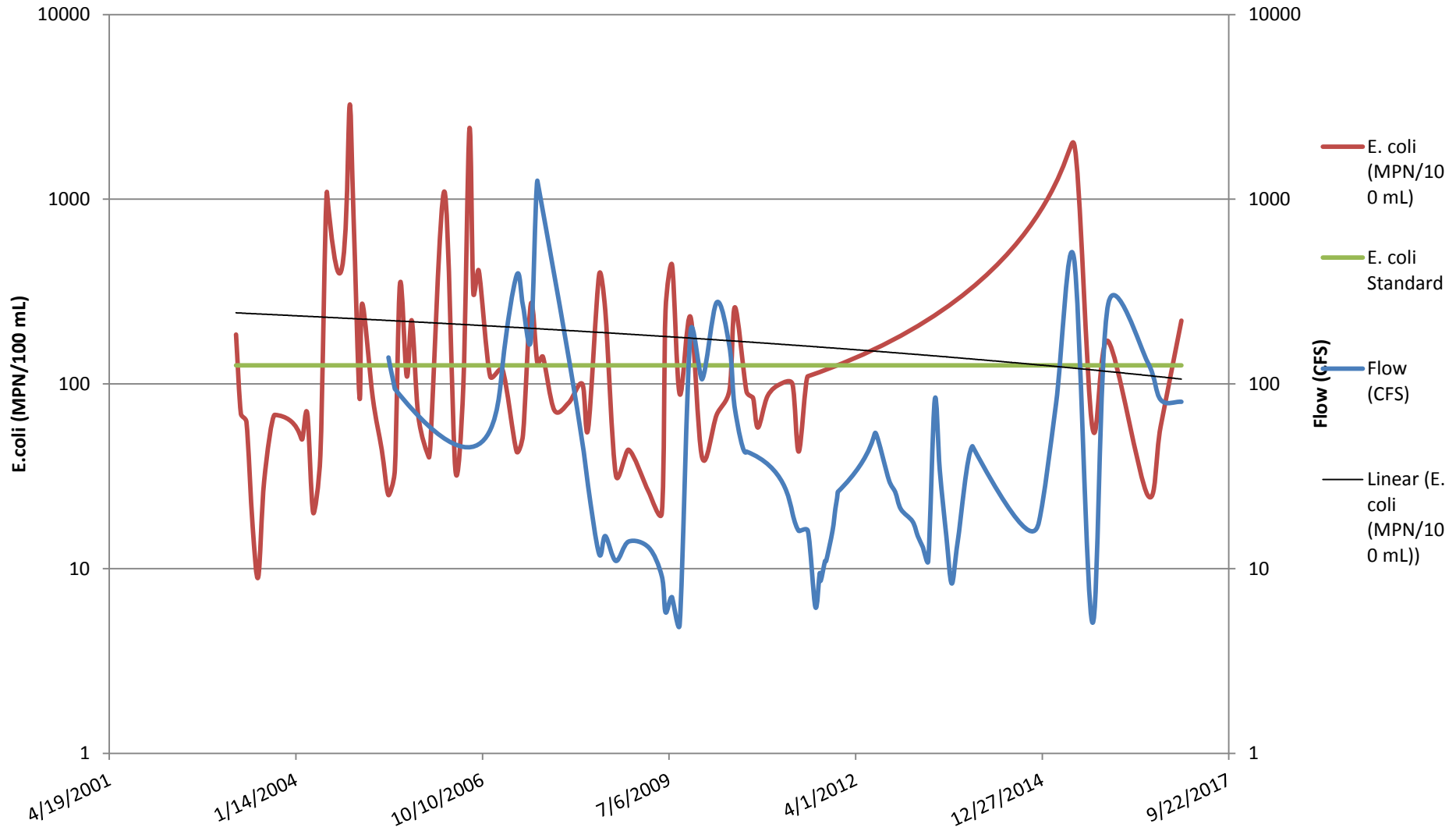
Fecal Coliform at Blanco River – Total



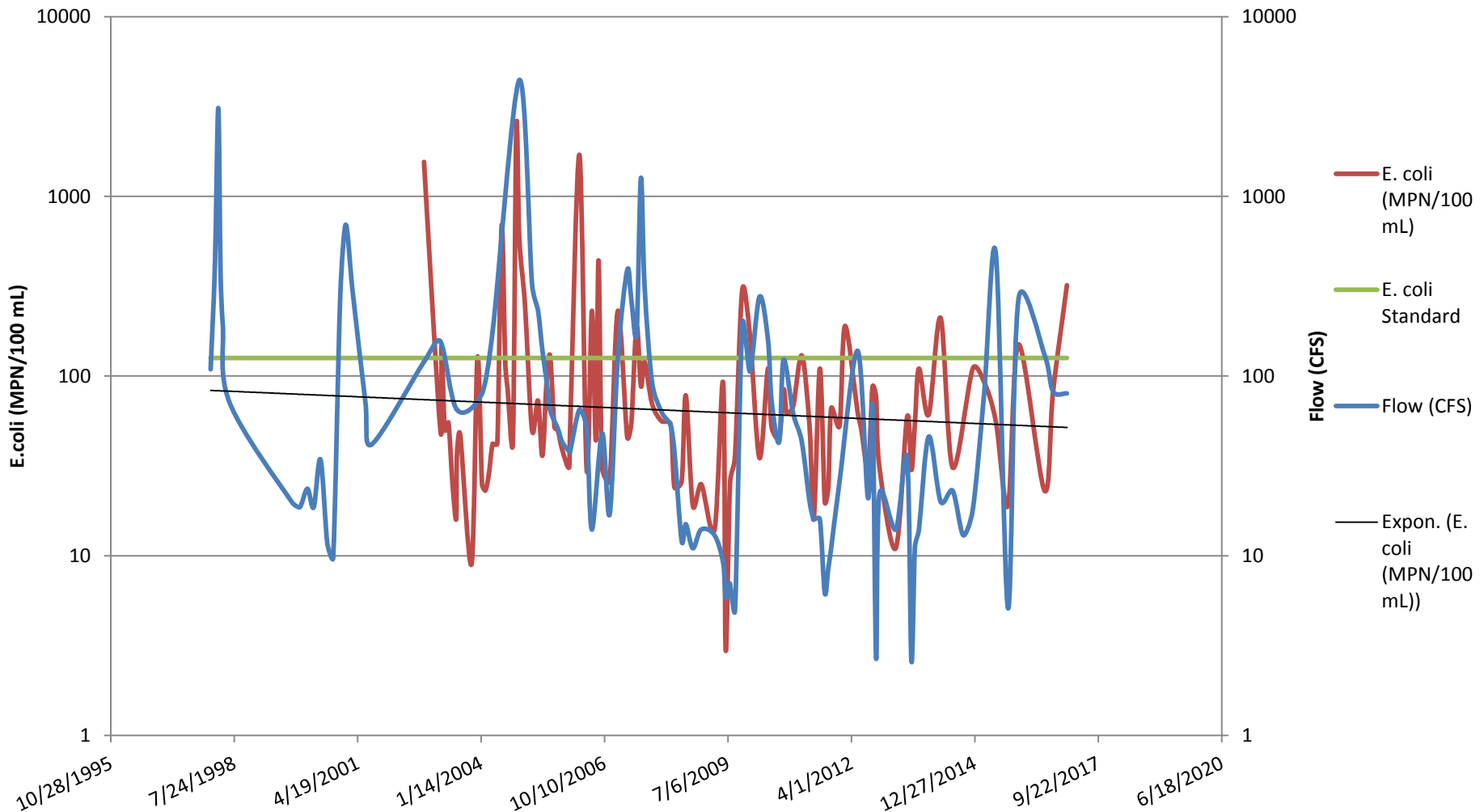
Fecal Coliform at Fischer Store Road



Fecal Coliform at Pioneer Town



Fecal Coliform at RR 12 Bridge



Data Trends and Analysis

- Large observed Fecal Coliform increases on Cypress Creek near downtown Wimberley and at Blanco River confluence
- Cypress Creek E. Coli increase likely has impact on nearby fecal coliform numbers of Blanco River site at RR 12
- However, Blanco River fecal coliform trends continue to decrease over time

Caveats

- Fecal coliform results are highly variable and are often heavily dependent on flow and rainfall times/totals
- Major spikes in flow levels on Blanco and Cypress post-floods
 - E. Coli levels often increased in short term along with increase in flow

Current and Future Monitoring Activities on Cypress Creek

- CRP Sampling
- City of Wimberley Data
- Texas Stream Team volunteer monitoring
- Future WPP monitoring between downtown and confluence as well as upstream of downtown
- Bacteria Source Testing
- Future comprehensive watershed data report

THANK YOU

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