

Evaluation of AMD Remediation System Performance and Design

AGO FY12 CWA §319 NPS Program
NPS1439
SEMI-ANNUAL REPORT
October 1, 2013 to March 31, 2014

Contact
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Narrative

FOC is awaiting a summary report of the geochemical analysis prepared by Skelly and Loy of the selected treatment systems. Once this is prepared, a final report of system performance can be drafted.

Before analyzing the data collected from the system evaluation, FOC invested time to review all data in the FOC database. Many sampling sites listed in the FOC database were found to have incorrect GPS coordinates. All sampling sites were systematically reviewed in ArcGIS and tagged as correct or incorrect. This was one of many important steps before the FOC database can be migrated into an MS Access database for storage and retrieval.

Also during the reporting period, Kevin Ryan attended an AMDtreat software training hosted by WV DEP and OSM as well as the 2014 West Virginia Mine Drainage Task Force Symposium. Both events provided relevant information to analyze and review system performance for acid mine drainage treatment.

Heather Luckas, the primary non-federal partner for this project provided a draft paper summarizing the results of her research concerning FOC's treatment system performance. The paper, entitled, "Passive Treatment of Acid Mine Drainage in West Virginia: A Framework to Explain Variability in Performance," outlined potential reasons for poor performance including:

- Hydro-geochemical uncertainties;
- Limits to knowledge at the time of system design; and,
- Funding constraints to more holistically understand passive treatment system performance.

The document summarizes system performance data including sources for area. Table 1 demonstrates the large variability in flow measurements for AMD sources at five of FOC project sites.

Table 1 - Influent water flow and chemistry for treatment systems

	N	Flow [gpm]		pH		Acidity [mg/L]		Aluminum [mg/L]		Iron [mg/L]	
		Av	SD	Av	SD	Av	SD	Av	SD	Av	SD
Upper Muddy	15	107	117	3.2	0.3	115	32	10	3	5	5
Jessop	6	41	35	2.8	0.1	247	79	17	3	6	5
DeAntonis	18	138	138	2.5	0.1	731	219	42	14	125	54
Pase	25	71	70	2.9	0.2	247	124	23	13	14	10
Dinkenburger	52	7	12	2.6	0.2	998	374	65	30	176	76

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Pollutant Reductions

No BMPs were planned for this project. No Pollutant reductions are available for reporting.

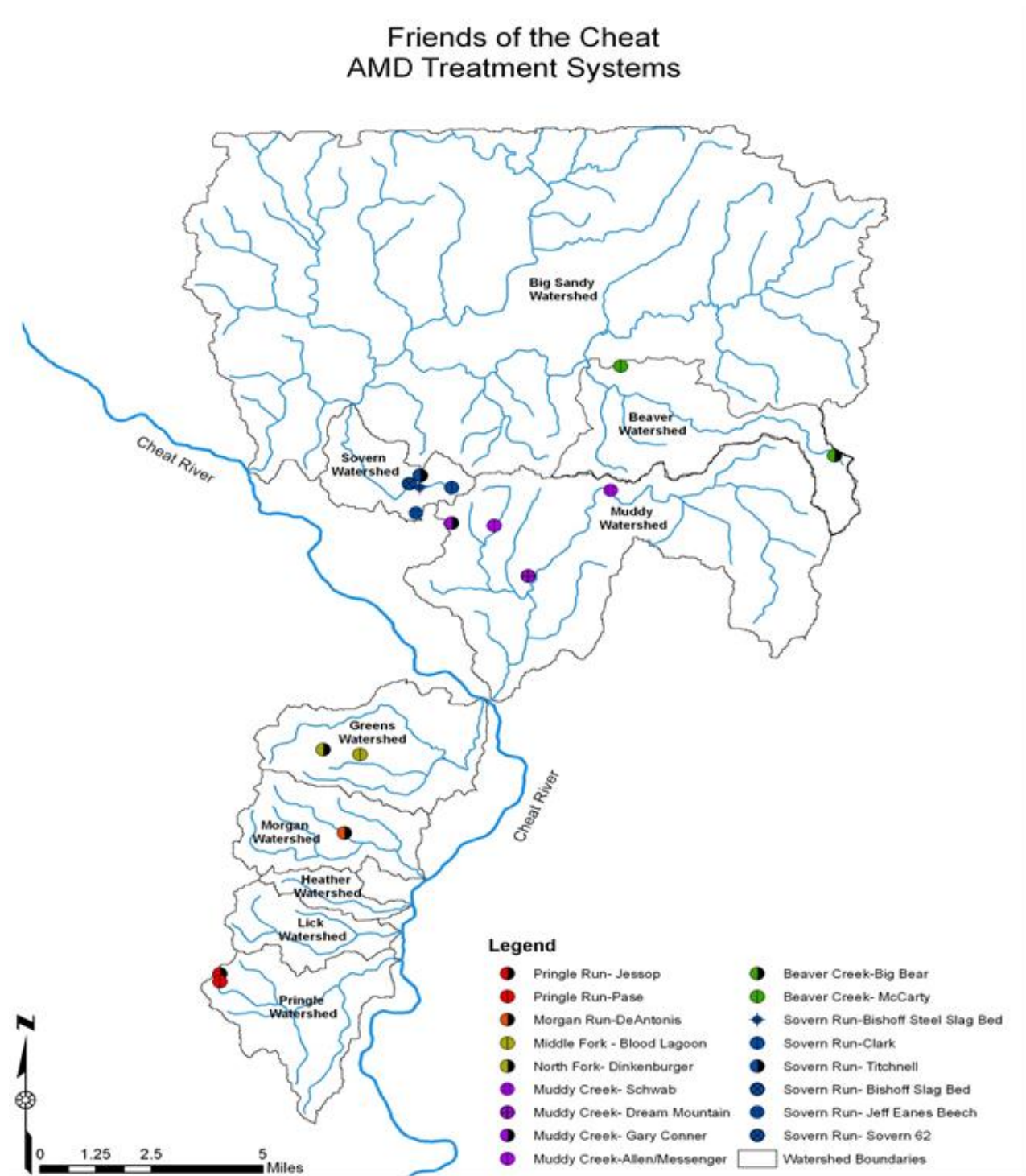


Figure 1 - FOC AMD Treatment Systems in the Lower Cheat River watershed.

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Milestone Schedule

Overall project status is on schedule.

Task/Milestone	2013												2014					%Complete		
	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J		A	S
Planning/Scheduling	X	X	X																	100%
Data Collection																				
Existing Underperforming Systems			X	X	X	X														100%
Untreated AMD Sites			X	X	X	X														100%
Follow Up Monitoring	Ongoing as needed																		90%	
Data Analysis							X	X	X											60%
Final Report Drafting and Review										X	X	X	X	X	X	X				20%
Education and Outreach Materials	X	X	X	X	X	X	X							X	X	X	X	X	X	10%
Re-assess Project Schedule														X						100%

Expenditures

Semi-Annual 319 Financial Report	
Project:	Evaluation of AMD Remediation System Performance and Designs
NPS #:	#1439 Phone: 304-329-3621
Fiscal Year:	FY2012 Fax: 304-329-3622
E-mail:	kevin@cheat.org
Grantee:	Friends of the Cheat
Contact:	Kevin Ryan
Reporting period:	To 10/1/13 From 3/31/14
319 Grant Funds Awarded: \$20,000	
Items for match	Match \$
	0.00
Totals	0.00
Request for reimbursement(s) during period	Spent \$
Personnel, benefits and travel	\$104
Benefits	\$9
Lab Fees	\$1,458
Travel	\$328
Subcontracts for Technical Assistance – Skelly and Loy	\$4,875
Totals	\$6,774
Remaining Total Balance	
	\$5,282