

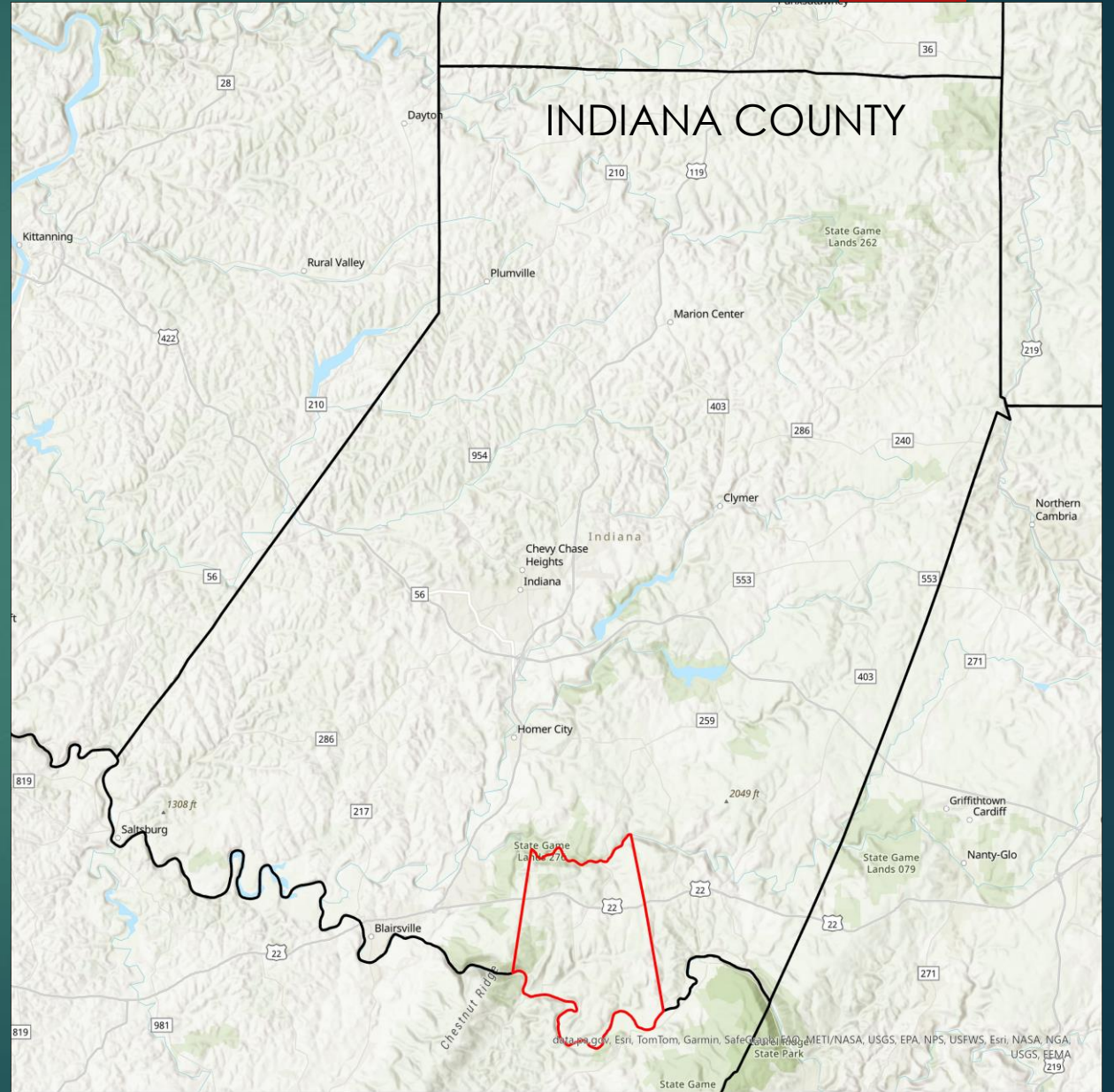
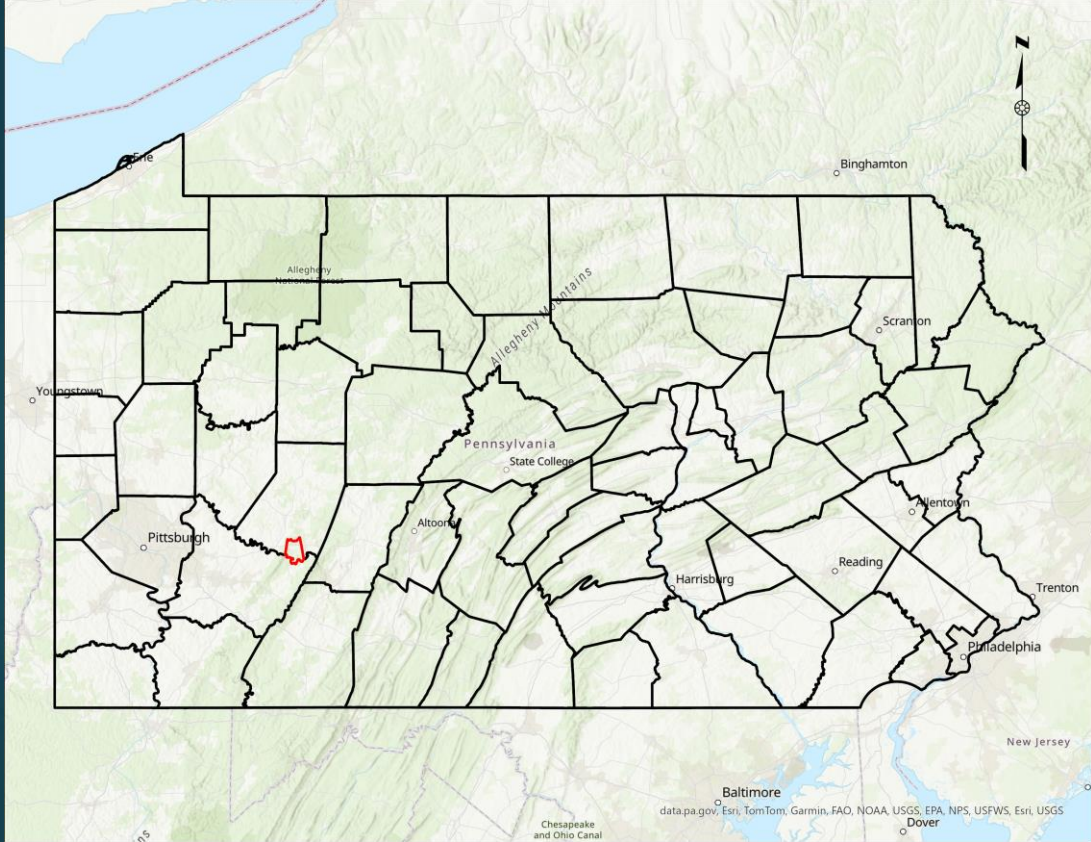
3RQ Roundtable

February 1, 2024

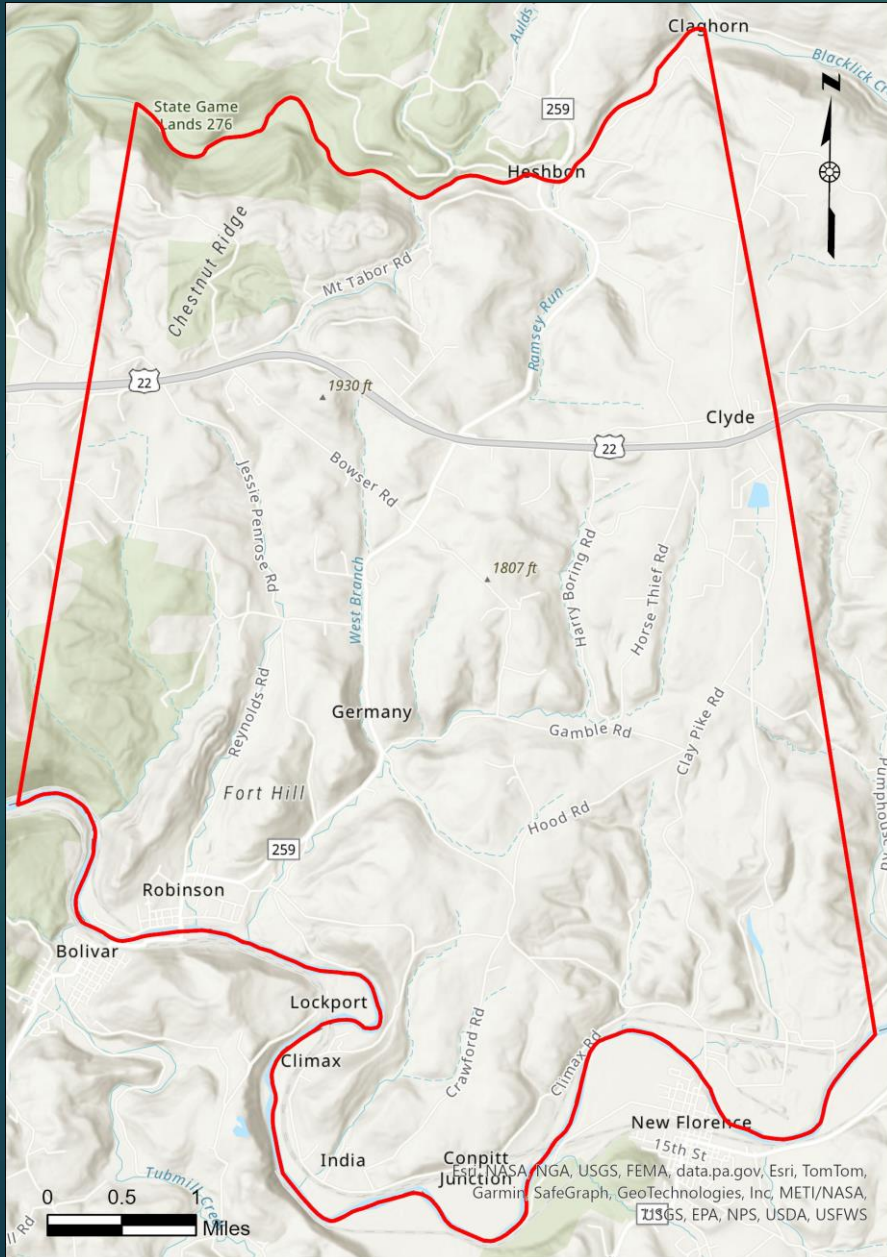
West Wheatfield Township AMD/AML Assessment

PRESENTED BY: SHAUN L. BUSLER, GISP, BIOLOGIST

West Wheatfield Township

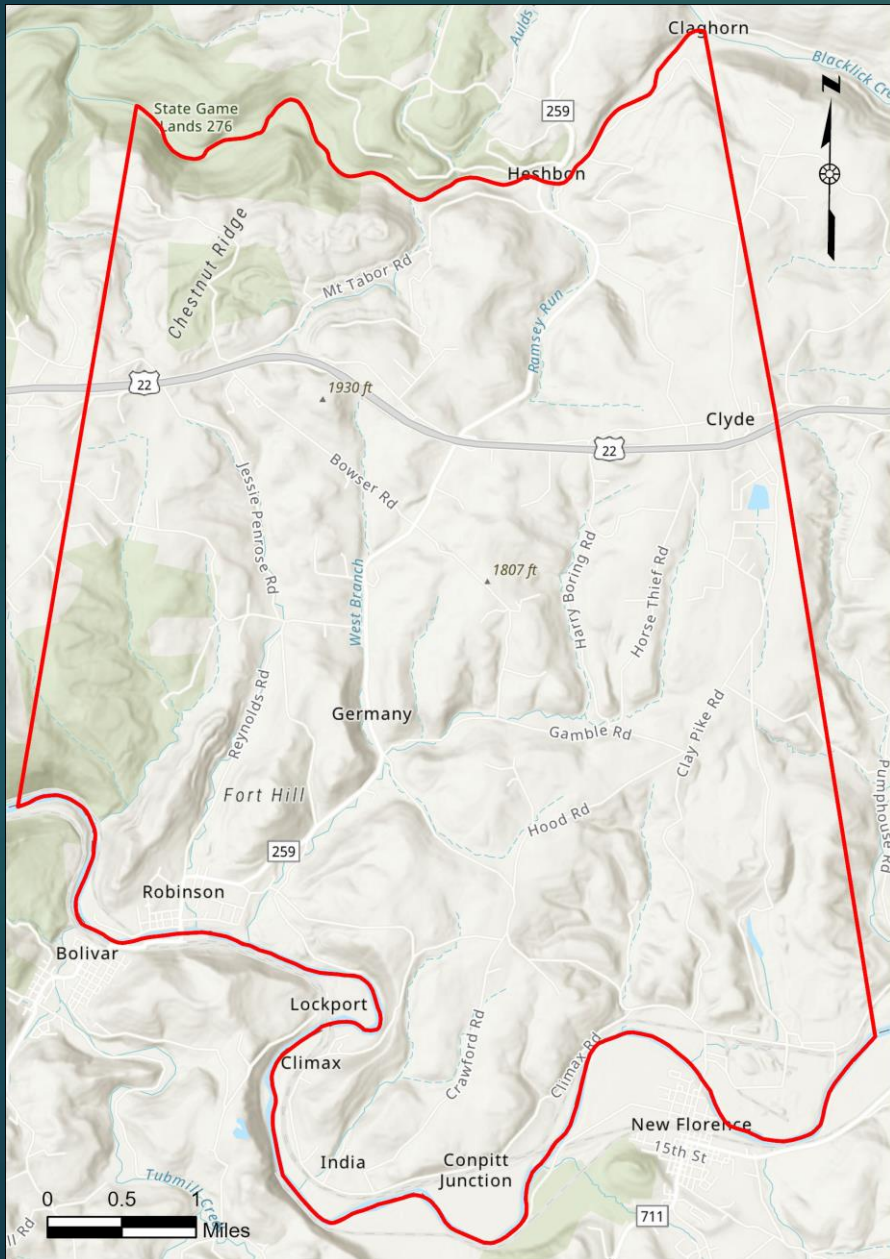


West Wheatfield Township



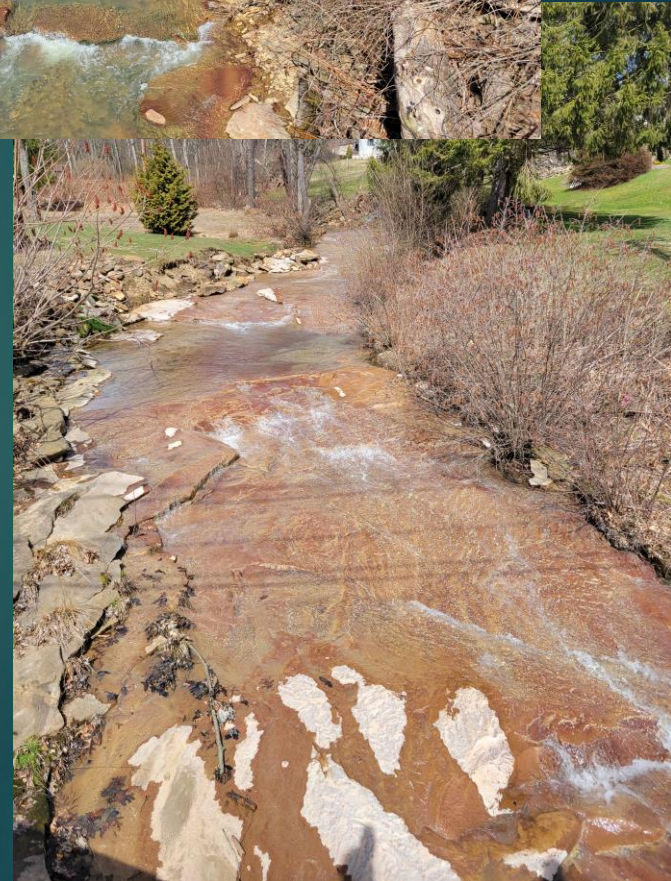
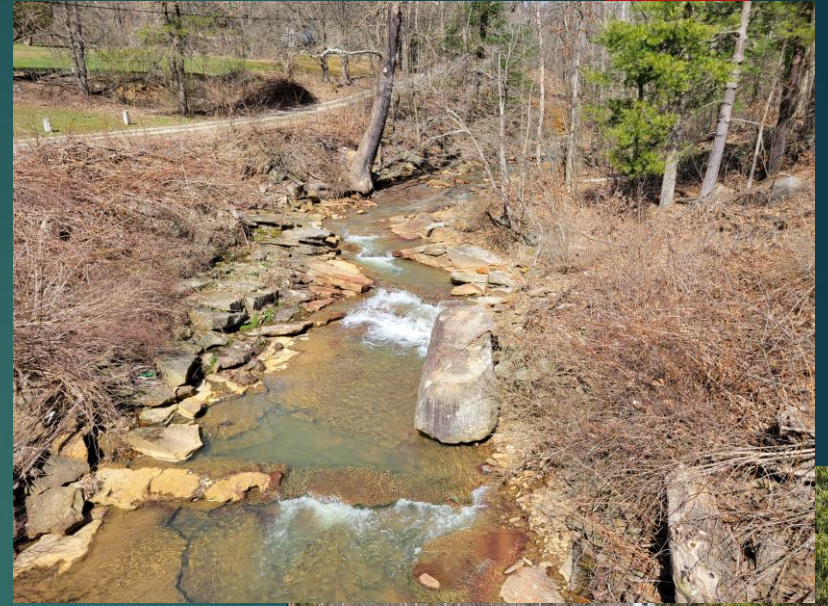
- ▶ 31-square miles in size
- ▶ Location:
 - ▶ Between Blacklick Creek and Conemaugh River
 - ▶ Between Chestnut Ridge and Laurel Ridge
- ▶ Towns in township include Robinson, Heshbon, Clyde, Climax, India, and Germany
- ▶ SGL153

West Wheatfield Township

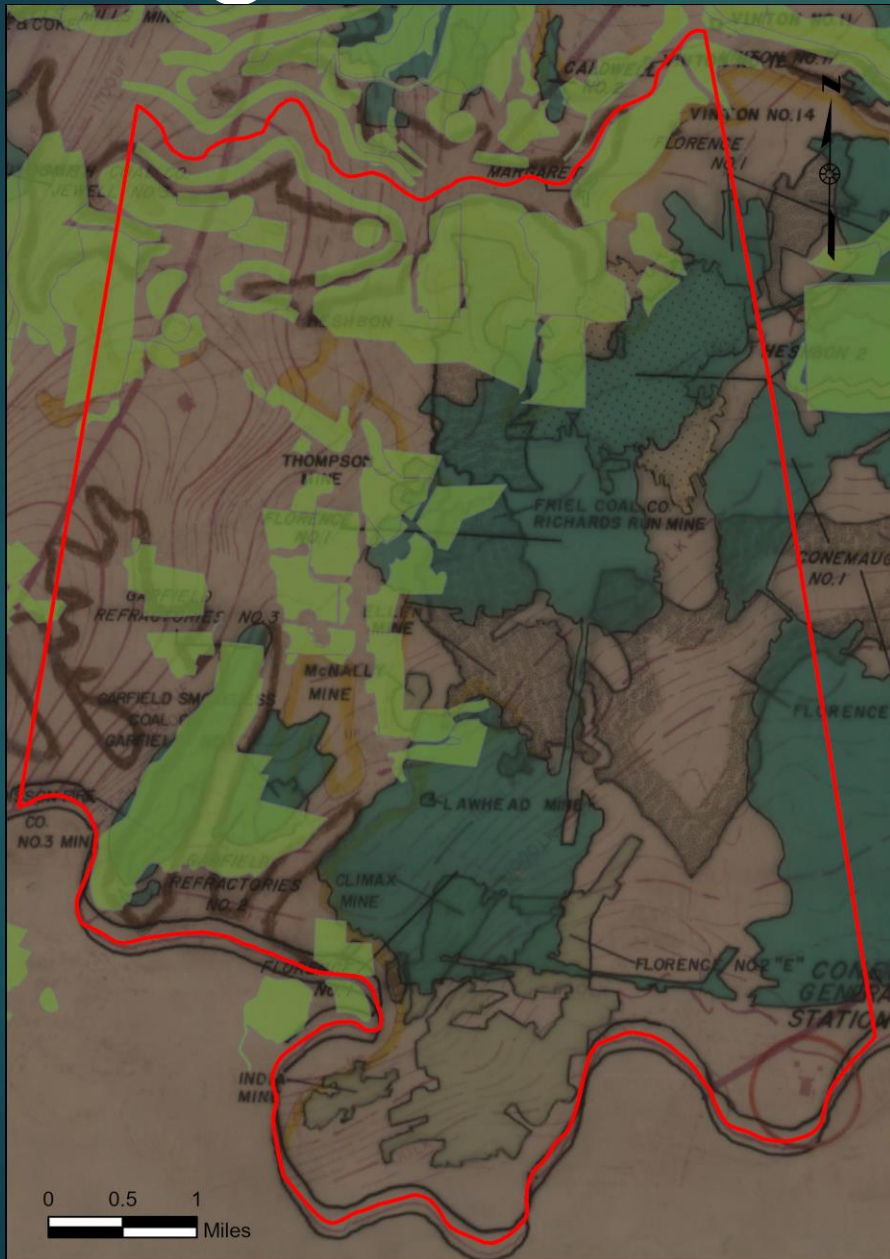


- ▶ Biggest town in township – Robinson
 - ▶ Located on the Conemaugh River
 - ▶ Located next to Packsaddle Gap, the gorge that cuts through Chestnut Ridge
 - ▶ Once a prosperous town with multiple mines and brick plants
- ▶ High poverty rate – 22% according to PA DEP Environmental Justice data
- ▶ Township supervisors are actively engaging in improving their municipality
 - ▶ Increase recreational opportunities = jobs

Robinson



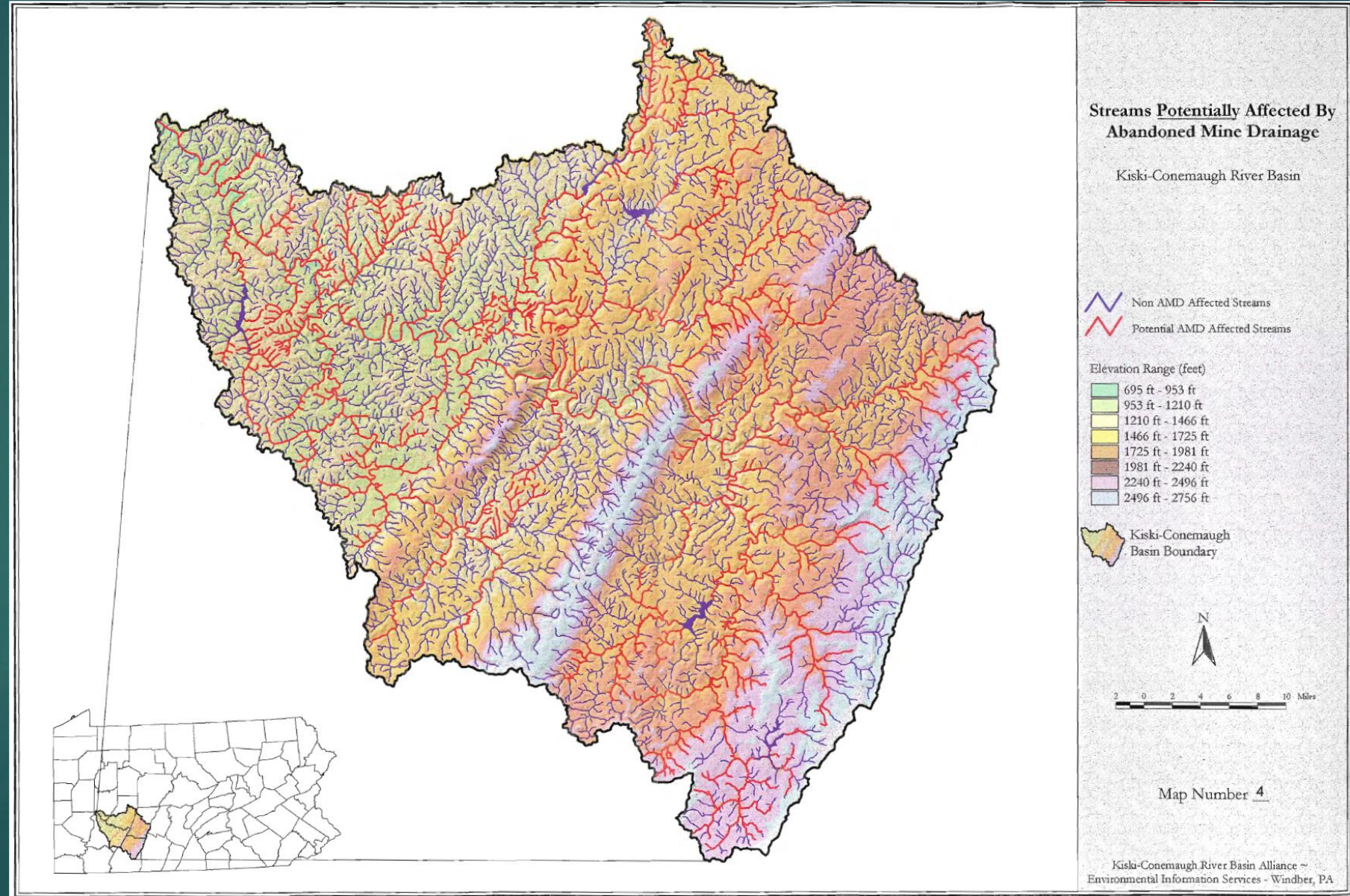
Mining in the Township



- ▶ Approximately three-quarters of the township has been mined
 - ▶ 17 underground mines
 - ▶ Mine-mouth power plant
 - ▶ 7.6 square miles have been surface mined
 - ▶ 42 surface mines

Water Quality

- ▶ Due to the polluted condition of the Conemaugh River and Blacklick Creek, there was little momentum to treat water

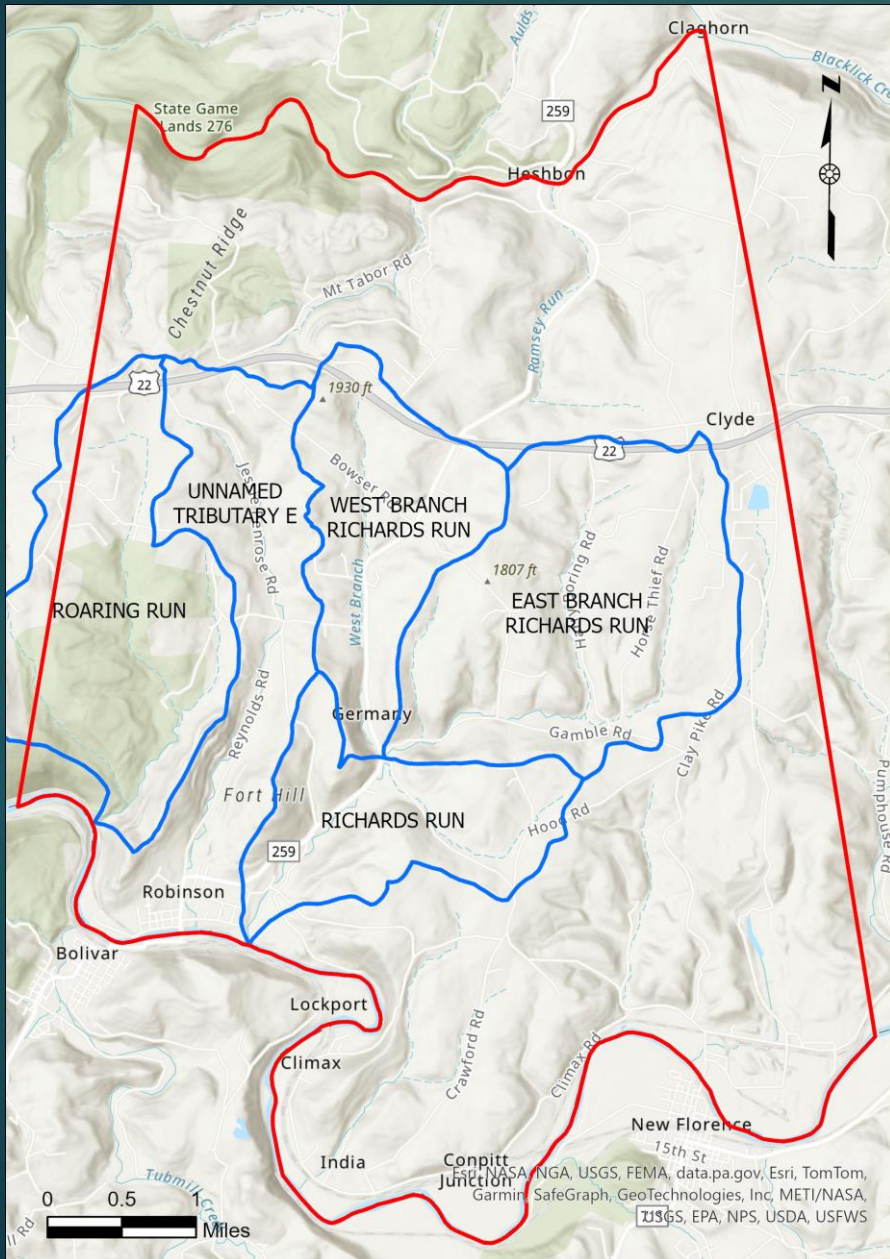


Water Quality

- ▶ Many treatment systems have been constructed since 1999
- ▶ St. Michael Active Treatment Plant went online in 2013

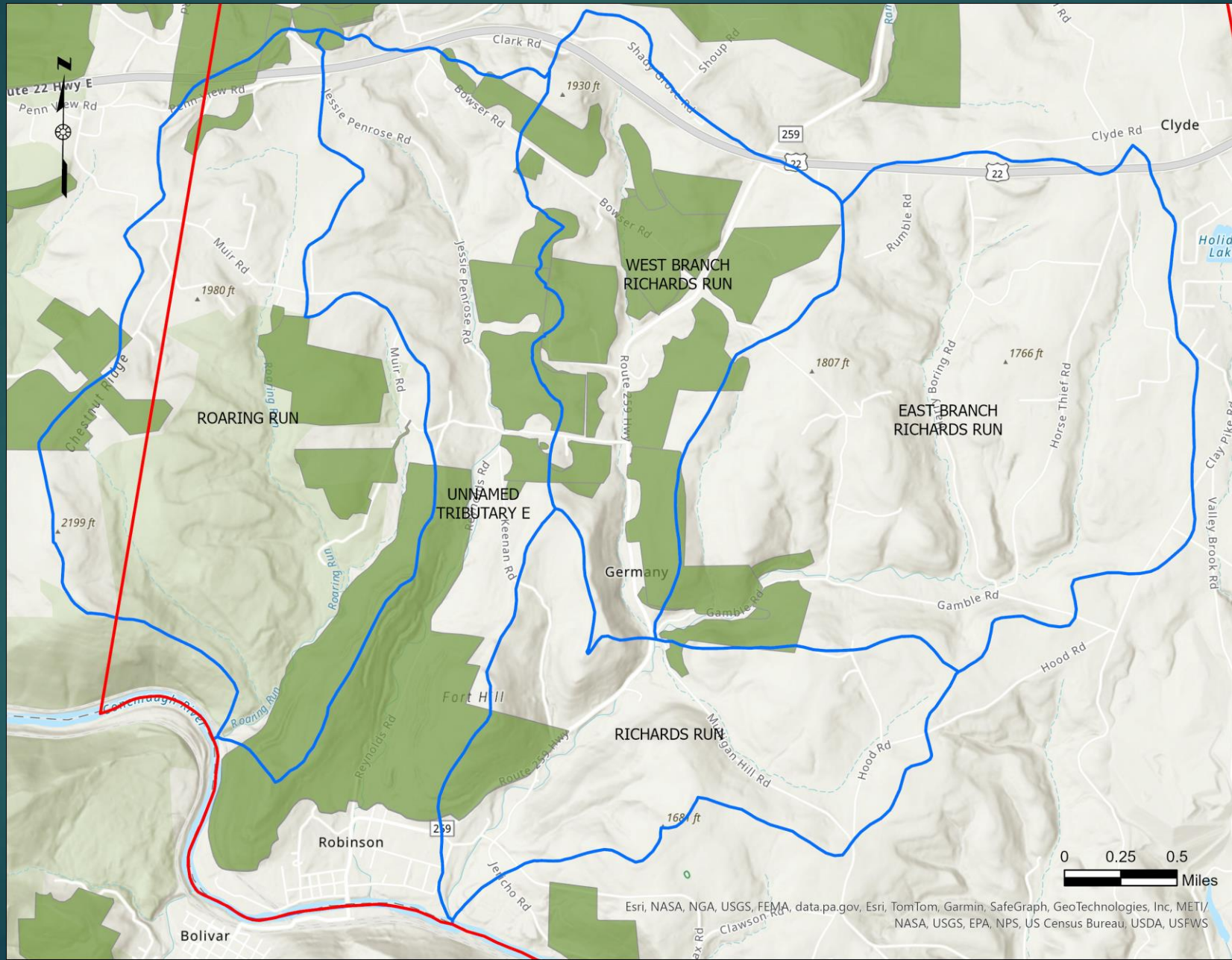


Watersheds

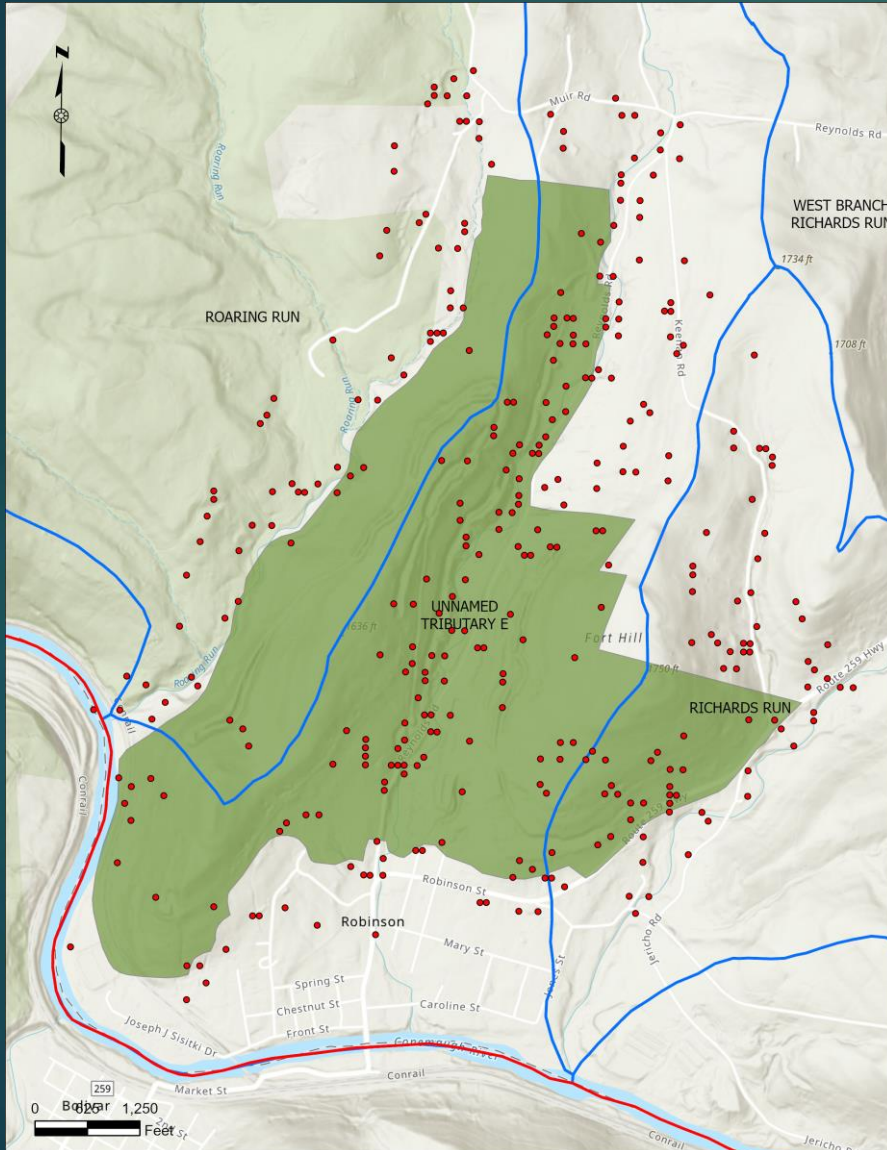


- ▶ Focused assessment on:
 - ▶ Richards Run
 - ▶ Roaring Run
 - ▶ Unnamed Tributary E

Watersheds

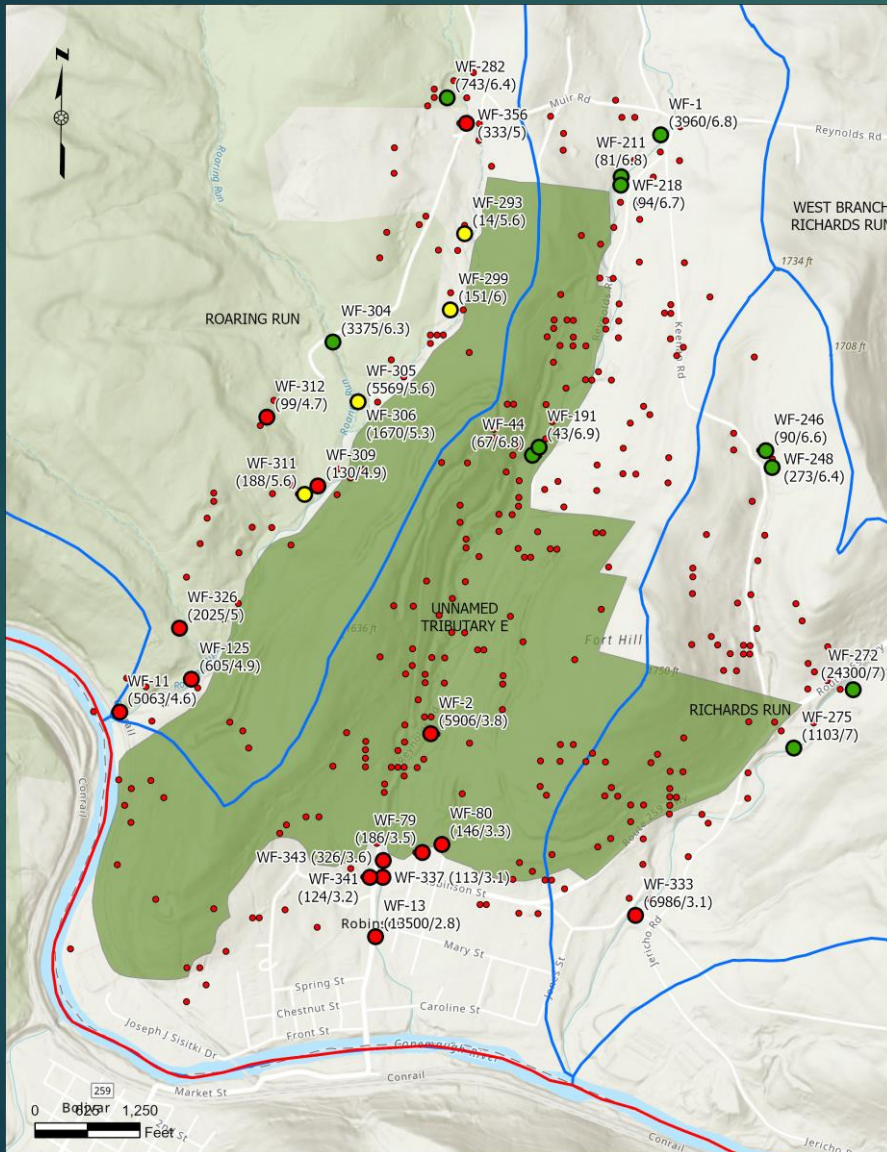


Wheatfield Operation



- ▶ Tracked down data from the PA DEP
 - ▶ PDF copies of original permit application
 - ▶ Issued in 2004
 - ▶ Hydrologic study of area
 - ▶ 360 sample points!!
 - ▶ Background
 - ▶ Monitoring
 - ▶ 50 Subchapter F Points

Streams



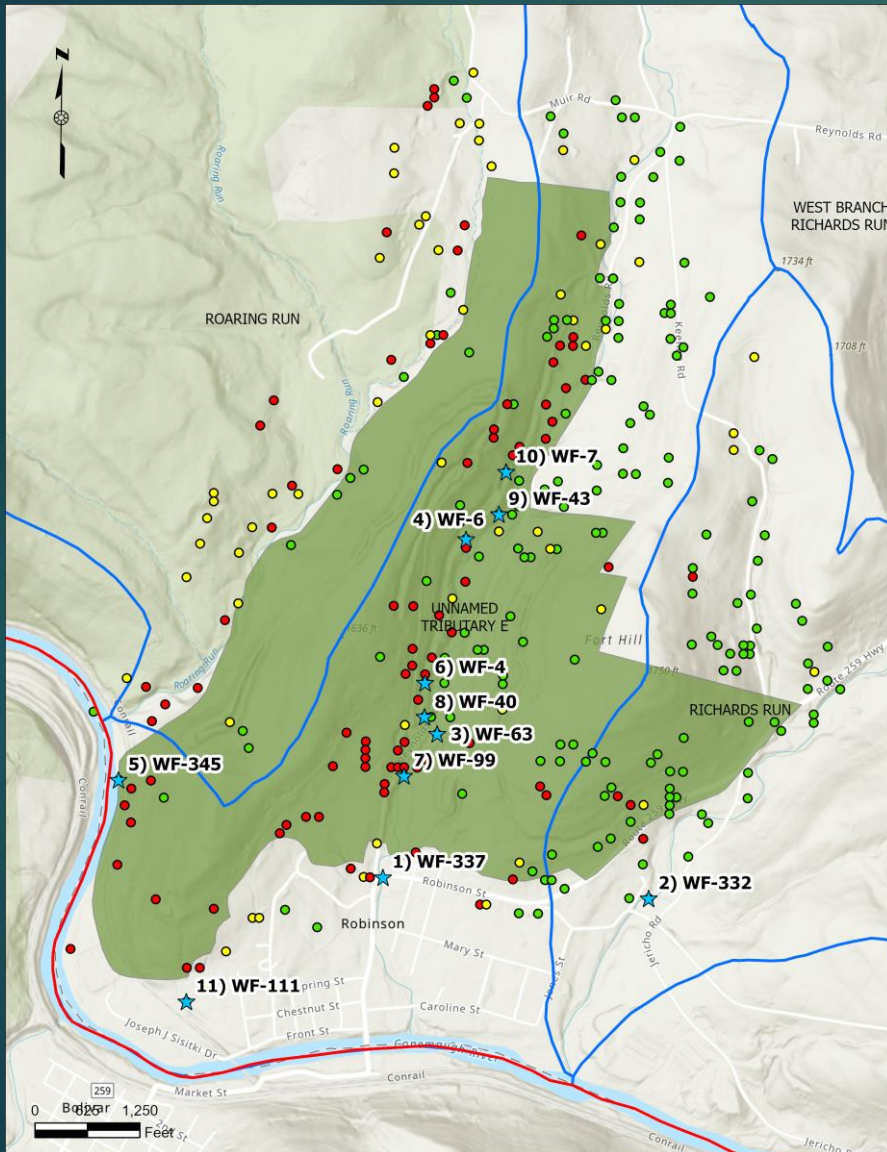
- ▶ After a lot of digitizing...
 - ▶ Created a master table of points

E362 =COUNTIF(E2:E361, "Yes")

	A	B	C	D	E	F	G	J	K
	SAMPLE POINT ID	ID	MAX FLOW (GPM)	MIN pH	Subchapter F	Stream	DESCRIPTION	LATITUDE	LONGITUDE
1	WF-1	1	3960.0	6.8	No	Yes	UT-E to Conemaugh River, upstream	40.428611	-79.128611
2	WF-2	2	5906.0	3.8	No	Yes	UT-E to Conemaugh River	40.408889	-79.138056
3	WF-3	3	69.0	2.5	Yes	No	deep mine discharge	40.410000	-79.138611
4	WF-4	4	95.0	2.7	Yes	No	deep mine discharge	40.410556	-79.138333
5	WF-5	5	97.0	3.0	Yes	No	highwall pit impoundment discharge	40.411389	-79.138056
6	WF-6	6	238.0	2.7	Yes	No	highwall pit impoundment discharge	40.415278	-79.136667
7	WF-7	7	36.0	2.5	Yes	No	highwall pit impoundment discharge	40.417500	-79.135000
8	WF-8	8	105.0	7.3	No	No	spring	40.419722	-79.134722
9	WF-9	9	20.0	2.9	Yes	No	toe of highwall spring	40.413056	-79.139722
10	WF-10	10	Ponded	3.9	No	No	highwall pit impoundment	40.417778	-79.136667
11	WF-11	11	5063.0	4.6	No	Yes	Roaring Run, downstream	40.409444	-79.151389
12	WF-12	12	95.0	2.5	Yes	No	deep mine discharge	40.407222	-79.150000
13	WF-13	13	13500.0	2.8	No	Yes	UT-E to Conemaugh River, downstream	40.402222	-79.140278
14	WF-14	14	Ponded	2.6	No	No	highwall pit impoundment	40.408333	-79.139444
15	WF-15	15	5.1	3.3	Yes	No	spring	40.407778	-79.140833
16	WF-16	16	2.7	3.5	Yes	No	spring	40.408056	-79.140833
17	WF-17	17	0.8	3.2	Yes	No	spring	40.408333	-79.140833
18	WF-18	18	7.4	3.5	Yes	No	spring	40.408611	-79.140833

- ▶ Able to understand data more easily
- ▶ Color coded:
 - ▶ ≤5 = Red
 - ▶ >5 and ≤6 = Yellow
 - ▶ >6 = Green

Discharges, Springs, and Wells



▶ Color coded:

▶ ≤ 5 = Red

▶ > 5 and ≤ 6 = Yellow

▶ > 6 = Green

▶ Selected Top 10 discharges based on loading

▶ #1 – WF-337

▶ 577 lb/day of acidity

▶ 148 lb/day of metals

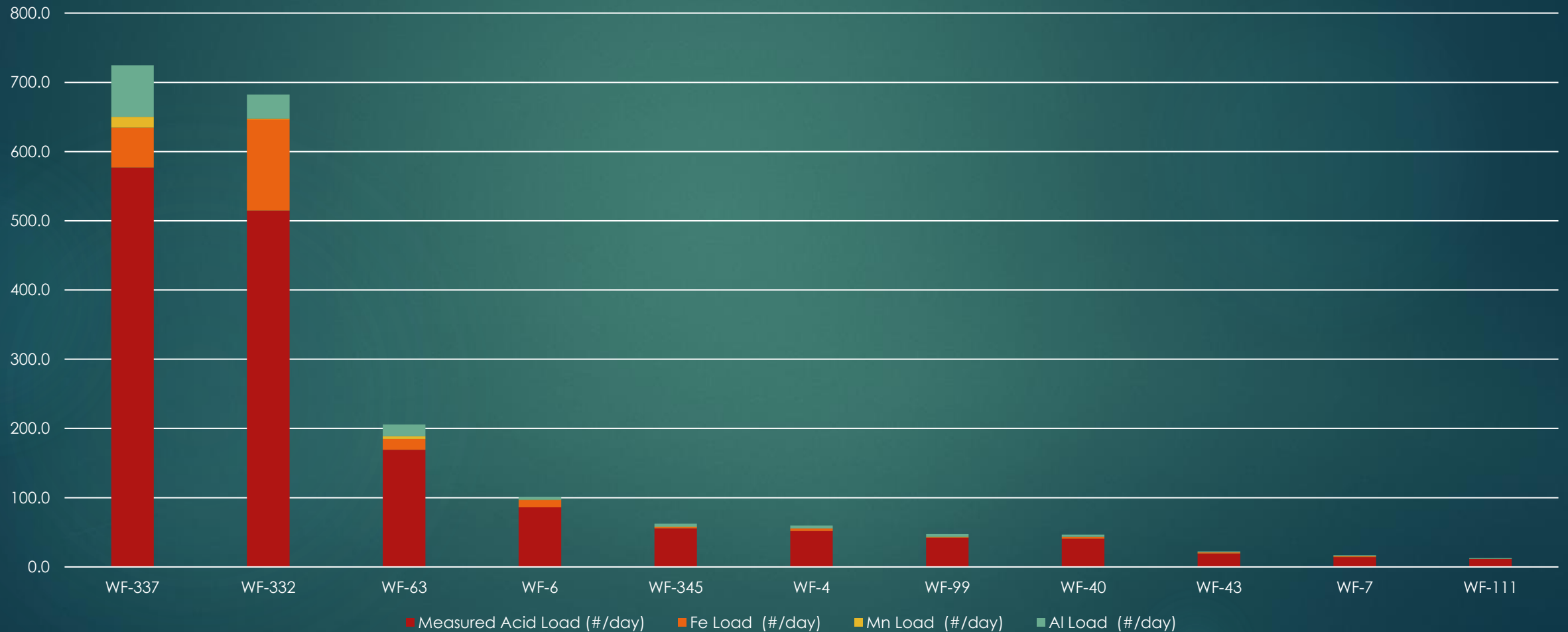
▶ #2 – WF-332

▶ 515 lb/day of acidity

▶ 168 lb/day of metals

Top 10 (11) Discharges in the Watershed

AMD Total Pollutant Loads



Future Work



- ▶ Sort through remaining discharge data >10 gpm with a $\text{pH} < 5$
 - ▶ Digitize data
 - ▶ Update Top 10 as needed
- ▶ Two rounds of sampling
 - ▶ Upstream and Downstream
 - ▶ Top 10 Discharges
 - ▶ Must measure flow