



OHIO VALLEY ELECTRIC CORPORATION
INDIANA-KENTUCKY ELECTRIC CORPORATION
3932 U. S. Route 23
P. O. Box 468
Piketon, Ohio 45661
740-289-7200

WRITER'S DIRECT DIAL NO:
740-897-7768

July 22, 2019

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Bruno Pigott, Commissioner
Indiana Department of Environmental Management
100 N. Senate Avenue
Mail Code 50-01
Indianapolis, IN 46204-2251

Dear Mr. Pigott:

Re: Indiana-Kentucky Electric Corporation
Request for 60-Day Extension for Assessment of Corrective Measures

As required by 40 CFR 257.106(h)(7), on May 15, 2019 the Indiana-Kentucky Electric Corporation (IKEC) provided notification to the Commissioner of the Indiana Department of Environmental Management that an Assessment of Corrective Measures had been initiated for a confirmed Statistically Significant Increase (SSI) of Appendix IV constituent Molybdenum at Clifty Creek Station's Landfill Runoff Collection Pond. Site specific conditions and/ or circumstances outside IKEC control resulted in considerable delays in site characterization activities being performed in support of the Assessment of Corrective Measures.

40 CFR 257.96(a) of the rule allows for an extension to the timeline of Assessment of Corrective Measures of no more than 60 days. Due to the delays encountered during site characterization activities it is IKEC's intention to utilize the permitted 60-day extension at this time. A report detailing the circumstances encountered that contributed to the delay was prepared by AGES, Inc. and certified by Stantec, OVEC's Qualified Professional Engineer. The report was placed in the facility's operating record as well as on the company's publically accessible internet site, and can be viewed at <http://www.ovec.com/CCRCCompliance.php>

If you have any questions, or require any additional information, please call me at (740) 897-7768.

Sincerely,

A handwritten signature in black ink that reads "Tim Fulk".

Tim Fulk
Engineer II
TLF:klr



AGES
Applied Geology And Environmental Science, Inc.

2402 Hookstown Grade Road, Suite 200
Clinton, PA 15026
www.appliedgeology.net

 412. 264. 6453  412. 264. 6567

July 9, 2019

Ms. Jacqueline Harmon P.E.
Senior Associate, Project Manager
Stantec
11687 Lebanon Road
Cincinnati OH 45241-2012

**RE: Request for 60-Day Extension for an Assessment of Corrective Measures
for CCR Program-2019
Indiana Kentucky Electric Corporation (IKEC)
Landfill Runoff Collection Pond – Clifty Creek Station – Madison, IN**

Dear Ms. Harmon:

On behalf of Applied Geology and Environmental Science (AGES), Inc., I would like to thank you for the opportunity to submit this request for an extension for the above-referenced project.

BACKGROUND

On December 19, 2014, the United States Environmental Protection Agency (U.S. EPA) issued their final Coal Combustion Residuals (CCR) regulation which regulates CCR as a non-hazardous waste under Subtitle D of Resource Conservation and Recovery Act (RCRA) and became effective six (6) months from the date of its publication (April 17, 2015) in the Federal Register, referred to as the “CCR Rule.” The rule applies to new and existing landfills, and surface impoundments used to dispose of or otherwise manage CCR generated by electric utilities and independent power producers.

The Clifty Creek Station, located in Madison, Indiana, is a 1,304-megawatt (MW) coal-fired generating plant operated by the Indiana-Kentucky Electric Corporation (IKEC), a subsidiary of the Ohio Valley Electric Corporation (OVEC). The Clifty Creek Station has six (6) 217.26-MW generating units and has been in operation since 1955. Beginning in 1955, ash products were sluiced to disposal ponds located in the plant site. As a result of these activities, there are three (3) CCR units at the station:

- Type I Residual Waste Landfill (Type I Landfill);
- Landfill Runoff Collection Pond (LRCP); and
- West Boiler Slag Pond (WBSP).

Ms. Jaqueline Harmon

July 9, 2019

Page 2 of 4

Based on groundwater monitoring conducted to date, no Statistically Significant Increases (SSIs) have been identified for Appendix III constituents at the WBSP. The Type I Landfill and LRCP are included in a multi-unit monitoring system. SSIs were identified for both units; however, an Alternate Source Demonstration (ASD) is currently being developed for the Type I Landfill. No further action will therefore be required for the Type I Landfill.

As SSIs for Appendix III parameters were identified for the LRCP, the unit entered into Assessment Monitoring in 2018. Statistical evaluations of the Assessment Monitoring data identified potential SSIs of Appendix III and Appendix IV constituents in three (3) wells: CF-15-07, CF-15-08 and CF-15-09. Per the CCR Rule, the wells were re-sampled and Appendix III (Boron) SSIs and Appendix IV SSIs (Molybdenum) were confirmed. Based on these results, IKEC established a Groundwater Protection Standard (GWPS) of 100 µg/L for Molybdenum (Appendix IV constituent) and conducted further statistical analyses. Based on these analyses, Molybdenum concentrations in well CF-15-08 were determined to be present at a Statistically Significant Level (SSL) greater than the GWPS.

The CCR Rule in 40 CFR § 257.96(a) requires that an owner or operator initiate an Assessment of Corrective Measures for any Appendix IV constituent that has been detected at an SSL greater than the GWPS and complete the assessment within 90 days after initiation. The CCR Rule allows up to an additional 60 days to complete the assessment if a demonstration shows that more time is needed because of site-specific conditions or circumstances. This demonstration must be certified by a qualified Professional Engineer.

The purpose of this letter is to present documentation regarding the delays in CCR field work at the LRCP that will result in the need for a 60-day extension for the Assessment of Corrective Measures at the unit. Presented below is a discussion of these delays; additional documentation is included in Attachments A and B.

SUMMARY OF DELAYS

Based on statistical results available in mid-January 2019, IKEC determined that site characterization activities and an Assessment of Corrective Measures would be required for the LRCP. Project field planning began the week of January 21, 2019 (Attachment A). Sixteen (16) soil borings were planned to be conducted in the area south of the LRCP to evaluate if any alternate sources for the identified constituents existed. In addition, four (4) new monitoring wells were planned to evaluate groundwater quality at the site boundary along the Ohio River and in a deeper aquifer that had been identified. The field work was scheduled to begin in early February. As documented below and in Attachment A, several factors contributed to delays in acquisition of data necessary to complete the Assessment of Corrective Measures:

- **Weather:** During the month of February, heavy precipitation caused flooding of the Ohio River (discussed below) and created muddy conditions that prohibited safe access to the planned work areas. Precipitation data from WeatherUnderground.com for several weeks in February 2019 are included in Attachment B.
- **Flooding:** USGS Ohio River Gage data from the Markland Dam near Warsaw, Kentucky (approximately 30 miles upstream from the Clifty Creek Station) is included in Appendix B. This data shows that on February 13th and February 14th, 2019, the Ohio River was above the Flood Stage of 451 feet above mean seal level (ft msl). A site map including topographic contours is also included in Attachment B. According to the USGS river data, Flood Stage at the Clifty Creek Station is 450 ft msl. The 450-foot contour is highlighted on the site map. Three (3) of the four (4) new wells and most of the soil borings are located in areas within the flood zone.
- **Contractor:** As the field work included the installation of additional monitoring wells, a qualified drilling contractor was needed to safely and efficiently complete the work. Once the work area had dried out enough to safely access the work areas, a qualified drilling contractor was not available to perform the work.
- **Laboratory Delays:** Once the wells were installed and developed, AGES sampled the wells and submitted the samples to TestAmerica (the analytical laboratory) on March 28, 2019. The analytical reports were due back to AGES by May 2, 2019. However, due to delays at the laboratory, the results were not reported to AGES until May 21, 2019

As documented in Attachment A, the factors listed above created approximately two (2) months of unforeseeable delays in data acquisition. Without delays, a schedule of 90-days to complete an Assessment of Corrective Measures for groundwater at a unit like the LRCP is extremely aggressive. Based on past experience, a project like this would typically require several months or longer to complete. Given this already aggressive schedule and the delays documented above, on behalf of IKEC, AGES is hereby requesting approval of a 60-day extension to the schedule to complete on an Assessment of Corrective Measures at the LRCP.

Ms. Jaqueline Harmon

July 9, 2019

Page 4 of 4

CLOSING

If you have any questions or comments regarding this request, please feel free to contact me at 412-264-6453.

Sincerely,

APPLIED GEOLOGY AND ENVIRONMENTAL SCIENCE, INC.


Robert W. King, PG
Chief Hydrogeologist

ATTACHMENT A

**Summary of Project Delays-CCR Site Characterization Work at LRCP
Clifty Creek Station
Monitoring Well Installation, Development & Sampling (Critical Path)
July 9, 2019**

Start Date: *GWPS Exceedance for Molybdenum Identified: Mid-January 2019*

WEEK OF	FIELD ACTIVITY
January 21- February 4, 2019	Start-Up Weeks (No Delays)
February 11, 2019	No Well Drilling Field Work Rain Delay & Contractor Not Available (7 days lost-see attached weather report)
February 18, 2019	No Well Drilling Field Work Rain Delay, Muddy Conditions & Contractor Not Available (7 days lost---see attached weather report)
February 25, 2019	No Well Drilling Field Work Rain Delay and, Flood Conditions Contractor Not Available (7 days lost--see attached weather report and graph of OH River Level)
March 4, 2019	Begin Well Drilling Field Work (Bowser-Morner) (No Delays)
March 11, 2019	Complete Well Drilling Field Work (Bowser-Morner) (No Delays)
March 18, 2019	Well Development (No Delays)
March 25, 2019	Well Sampling <i>Submitted GW Samples to TestAmerica On March 28, 2019 Results Due: May 2, 2019</i>
Date: May 21, 2019	100% of Lab Data Received from TestAmerica (20 days lost-laboratory reporting)
Total Days Lost:	41 Days

ATTACHMENT B

(/)

Search Locations

Log in (/log...)



★ Popular Cities (member favorites) San Francisco, CA 49° F Rain

Manhattan, NY 58° F Fair

Elev 0 38.2 °N, 85.77 °W

Louisville International Airport, Kentucky



☁ **63° LOUISVILLE INTERNATIONAL AIRPORT STATION**
[\(/HISTORY/DAILY/US/KY/LOUISVILLE/KSDF/DATE/2019-5-15?CM_VEN=LOCALWX_PWS DASH\)](#) | [CHANGE](#) ✓

[HISTORY \(/HISTORY/DAILY/US/KY/LOUISVILLE/KSDF/DATE/2019-5-15\)](#)

- [TODAY \(/WEATHER/US/KY/LOUISVILLE/KSDF\)](#)
- [HOURLY \(/HOURLY/US/KY/LOUISVILLE/KSDF\)](#)
- [10-DAY \(/FORECAST/US/KY/LOUISVILLE/KSDF\)](#)
- [CALENDAR \(/CALENDAR/US/KY/LOUISVILLE/KSDF/DATE/2019-5\)](#)
- [HISTORY \(/HISTORY/DAILY/US/KY/LOUISVILLE/KSDF/DATE/2019-5-15\)](#)
- [WUNDERMAP \(/WUNDERMAP?LAT=38.2&LON=-85.77\)](#)

Daily

Weekly

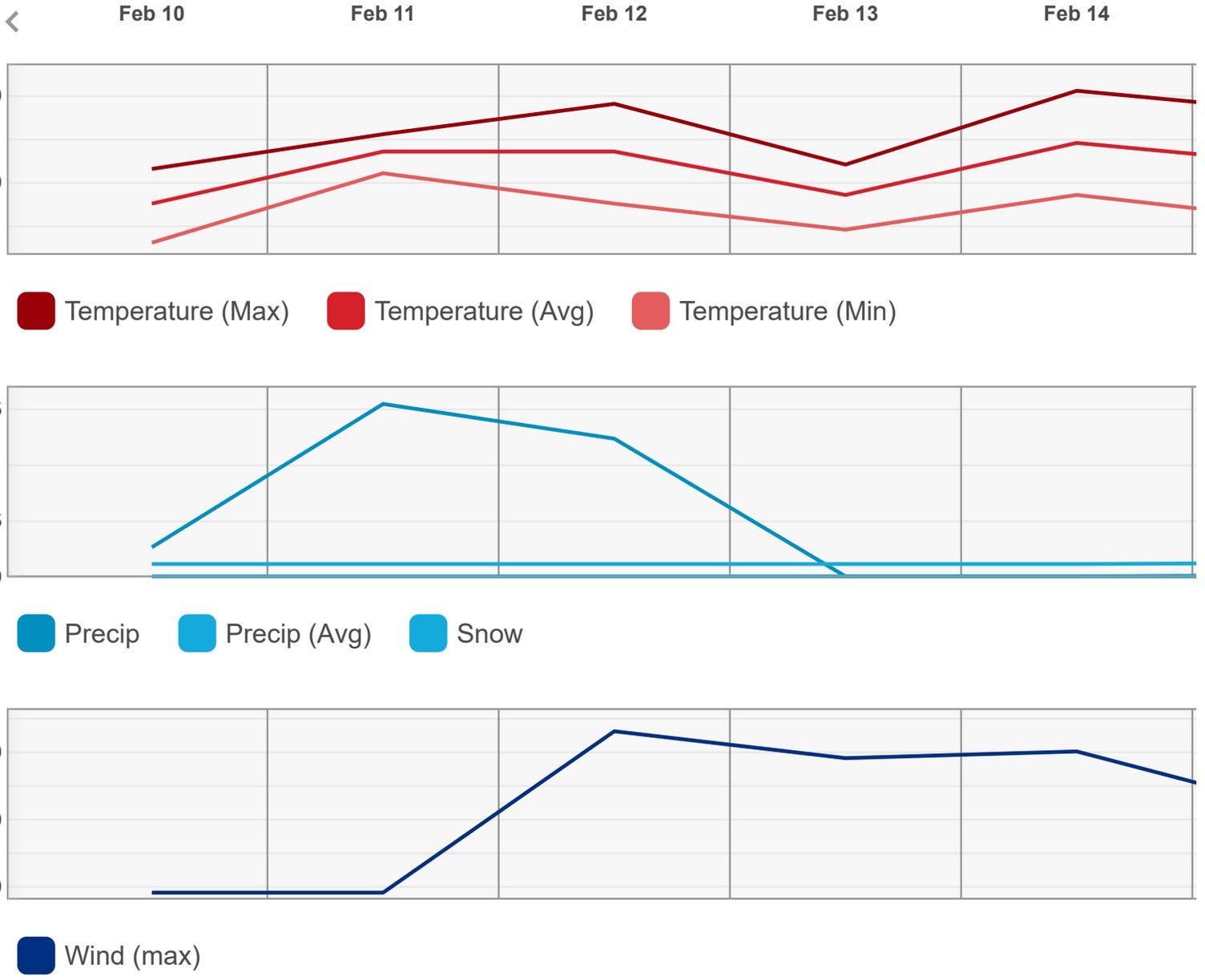
Monthly

February

11

2019

[View](#)



Summary

Temperature (° F)	Max	Average	Min	Sum	▲
Max Temperature	61	49	42	-	
Avg Temperature	51	42	33	-	
Min Temperature	43	35	26	-	
Precipitation (Inches)	Max	Average	Min	Sum	▲

Temperature (° F)	Max	Average	Min	Sum	▲
Precipitation	1.54	0.51	0	3.04	
Dew Point (° F)	Max	Average	Min	Sum	▲
Dew Point	55	31	14	-	

Daily Observations

Time	Temperature (° F)			Dew Point (° F)			Humidity (%)			Wind Speed (mph)		
	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min
Feb 10	43	35	26	40	27	14	92	-	57	9	-	0
11	51	47	42	49	44	40	100	-	86	9	-	0
12	58	47	35	55	45	23	96	-	59	33	-	0
13	44	37	29	25	20	16	59	-	39	29	-	4
14	61	49	37	37	27	23	59	-	24	30	-	7
15	56	44	31	45	31	19	85	-	44	21	-	5
16	43	36	28	22	20	18	69	-	39	16	-	5

underground&utm_medium=referral&utm_content=thumbnails-b:History Thumbnails:) underground&utm_medium=referral&utm_content=thumbnails-b:History Thumbnails:) You May Like

(https://ultimatepetnutrition.com/cmd.php?ad=908268&utm_source=taboola&utm_medium=referral)

If Your Indoor Cat Vomits (Do This Every Day)

Ultimate Pet Nutrition

(https://ultimatepetnutrition.com/cmd.php?ad=908268&utm_source=taboola&utm_medium=referral)

([https://www.fisherinvestments.com/en-us/campaigns/fmr/ld?](https://www.fisherinvestments.com/en-us/campaigns/fmr/ld?country=US&PC=TABBA46E99&CC=13JT&alleycode=LD&utm_source=Taboola&utm_medium=Native&utm_campaign=Premium)

country=US&PC=TABBA46E99&CC=13JT&alleycode=LD&utm_source=Taboola&utm_medium=Native&utm_campaign=Premium
underground&utm_content=How+Far+Does+%241+Million+Go+in+Retirement%3F)

How Far Does \$1 Million Go in Retirement?

(/)

Search Locations

Log in (/log...)



★ Popular member favorites (/member/favorites)

San Francisco, CA
59 ° F Rain

Manhattan, NY
58 ° F Fair

Elev 0 38.2 °N, 85.77 °W

Louisville International Airport, Kentucky



63° LOUISVILLE INTERNATIONAL AIRPORT STATION
[\(/HISTORY/DAILY/US/KY/LOUISVILLE/KSDF/DATE/2019-5-15?CM_VEN=LOCALWX_PWS DASH\)](#) | [CHANGE](#) ✓

[HISTORY \(/HISTORY/DAILY/US/KY/LOUISVILLE/KSDF/DATE/2019-5-15\)](#)

- [TODAY \(/WEATHER/US/KY/LOUISVILLE/KSDF\)](#)
- [HOURLY \(/HOURLY/US/KY/LOUISVILLE/KSDF\)](#)
- [10-DAY \(/FORECAST/US/KY/LOUISVILLE/KSDF\)](#)
- [CALENDAR \(/CALENDAR/US/KY/LOUISVILLE/KSDF/DATE/2019-5\)](#)
- [HISTORY \(/HISTORY/DAILY/US/KY/LOUISVILLE/KSDF/DATE/2019-5-15\)](#)
- [WUNDERMAP \(/WUNDERMAP?LAT=38.2&LON=-85.77\)](#)

Daily

Weekly

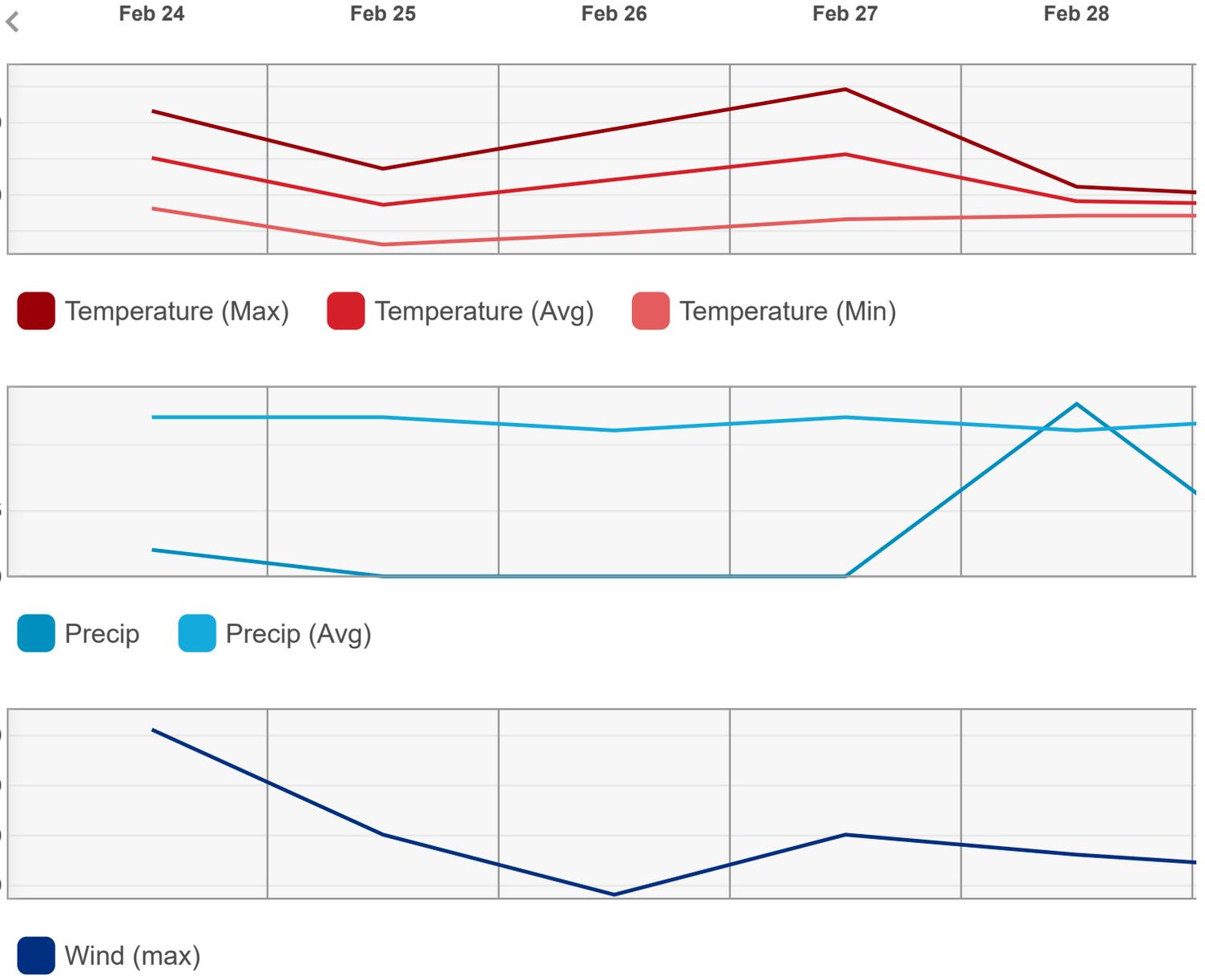
Monthly

February

26

2019

View



Summary

Temperature (° F)	Max	Average	Min	Sum	▲
Max Temperature	69	51	38	-	
Avg Temperature	52	43	33	-	
Min Temperature	39	37	26	-	
Precipitation (Inches)	Max	Average	Min	Sum	▲

Temperature (° F)	Max	Average	Min	Sum	▲
Precipitation	0.13	0.02	0	0.15	
Dew Point (° F)	Max	Average	Min	Sum	▲
Dew Point	58	28	9	-	

Daily Observations

Time	Temperature (° F)			Dew Point (° F)			Humidity (%)			Wind Speed (mph)		
	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min
Feb 24	63	50	36	58	33	18	72	-	38	41	-	12
25	47	37	26	20	14	9	58	-	27	20	-	0
26	58	44	29	25	22	18	72	-	24	8	-	0
27	69	51	33	44	33	25	69	-	36	20	-	0
28	42	38	34	32	29	26	89	-	64	16	-	6
1	39	37	34	33	31	30	82	-	76	13	-	0
2	44	41	38	35	33	29	85	-	57	13	-	0

[vunderground&utm_medium=referral&utm_content=thumbnails-b:History Thumbnails:\)](https://ad.doubleclick.net/ddm/trackclk/N4492.2069703TABOOLA/B21992396.236343246;dc_trk_aid=433567082;dc_trk_cid=99utm_source=taboola&utm_medium=referral) [vunderground&utm_medium=referral&utm_content=thumbnails-b:History Thumbnails:\)](https://ad.doubleclick.net/ddm/trackclk/N4492.2069703TABOOLA/B21992396.236343246;dc_trk_aid=433567082;dc_trk_cid=99utm_source=taboola&utm_medium=referral) You May Like

(https://ad.doubleclick.net/ddm/trackclk/N4492.2069703TABOOLA/B21992396.236343246;dc_trk_aid=433567082;dc_trk_cid=99utm_source=taboola&utm_medium=referral)

Drivers who switch save an average of \$669 on car insurance.

Progressive

(https://ad.doubleclick.net/ddm/trackclk/N4492.2069703TABOOLA/B21992396.236343246;dc_trk_aid=433567082;dc_trk_cid=99utm_source=taboola&utm_medium=referral)

(https://ultimatepetnutrition.com/cmd.php?ad=908268&utm_source=taboola&utm_medium=referral)

If Your Indoor Cat Vomits (Do This Every Day)

(/)

Search Locations

Log in (/log...)



★ Popular member favorites (/member/favorites) San Francisco, CA 49° F Rain

Manhattan, NY 58° F Fair

Elev 0 38.2 °N, 85.77 °W

Louisville International Airport, Kentucky



☁ **63° LOUISVILLE INTERNATIONAL AIRPORT STATION**
[\(/HISTORY/DAILY/US/KY/LOUISVILLE/KSDF/DATE/2019-5-15?CM_VEN=LOCALWX_PWSDASH\)](#) | [CHANGE](#) ✓

[HISTORY \(/HISTORY/DAILY/US/KY/LOUISVILLE/KSDF/DATE/2019-5-15\)](#)

- [TODAY \(/WEATHER/US/KY/LOUISVILLE/KSDF\)](#)
- [HOURLY \(/HOURLY/US/KY/LOUISVILLE/KSDF\)](#)
- [10-DAY \(/FORECAST/US/KY/LOUISVILLE/KSDF\)](#)
- [CALENDAR \(/CALENDAR/US/KY/LOUISVILLE/KSDF/DATE/2019-5\)](#)
- [HISTORY \(/HISTORY/DAILY/US/KY/LOUISVILLE/KSDF/DATE/2019-5-15\)](#)
- [WUNDERMAP \(/WUNDERMAP?LAT=38.2&LON=-85.77\)](#)

Daily

Weekly

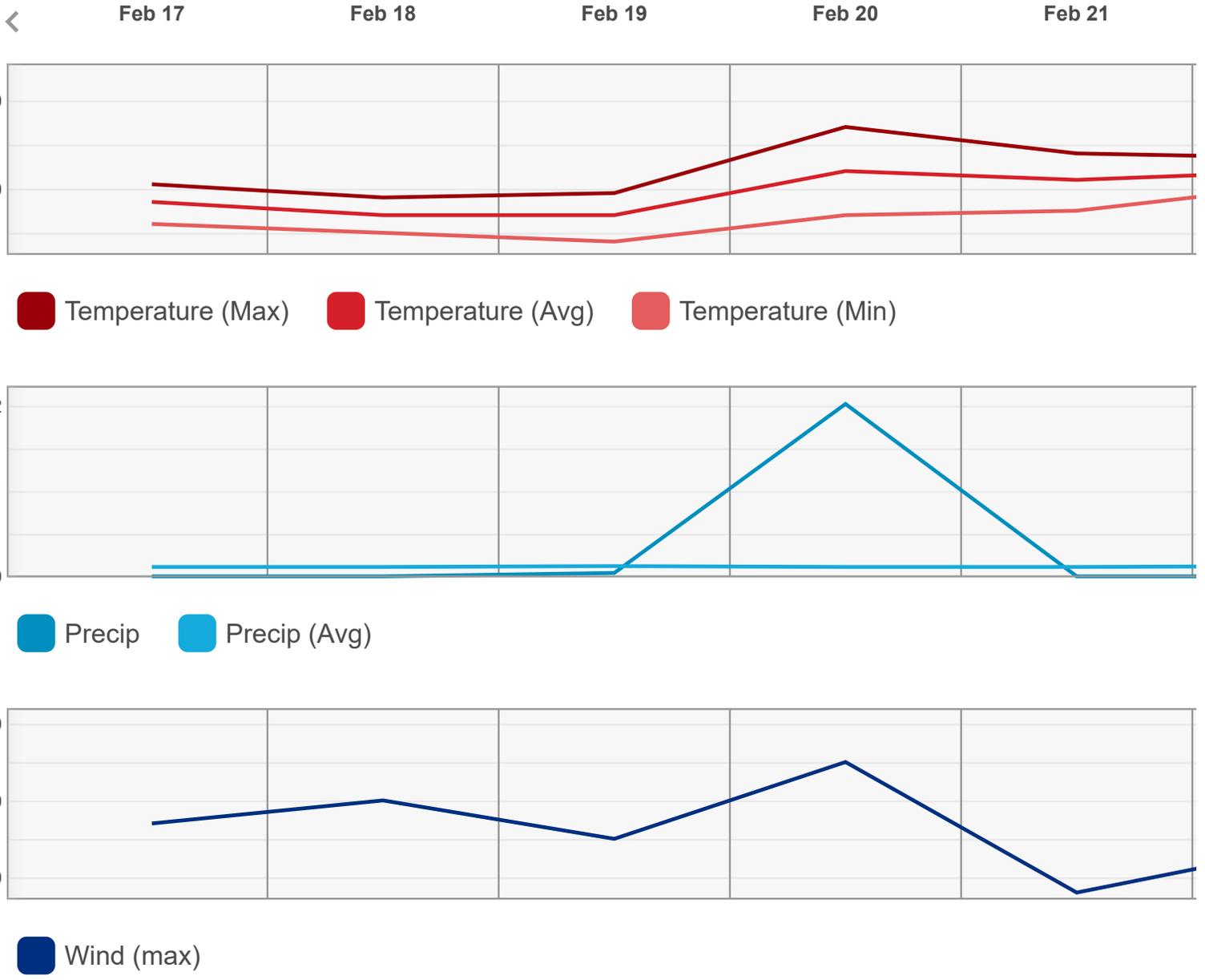
Monthly

February

18

2019

[View](#)



Summary

Temperature (° F)	Max	Average	Min	Sum	▲
Max Temperature	62	52	42	-	
Avg Temperature	47	41	35	-	
Min Temperature	38	34	28	-	
Precipitation (Inches)	Max	Average	Min	Sum	▲

Temperature (° F)	Max	Average	Min	Sum	▲
Precipitation	2.02	0.63	0	3.17	
Dew Point (° F)	Max	Average	Min	Sum	▲
Dew Point	56	32	18	-	

Daily Observations

Time	Temperature (° F)			Dew Point (° F)			Humidity (%)			Wind Speed (mph)		
	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min	Max	Avg	Min
Feb 17	41	37	32	37	30	22	92	-	63	17	-	0
18	38	34	30	29	24	19	76	-	48	20	-	5
19	39	34	28	29	21	18	75	-	44	15	-	0
20	54	44	34	51	40	30	96	-	76	25	-	0
21	48	42	35	36	32	29	89	-	53	8	-	0
22	47	44	41	33	31	29	65	-	53	14	-	5
23	62	52	42	56	47	31	93	-	58	29	-	0

wunderground&utm_medium=referral&utm_content=thumbnails-b:History Thumbnails:) wunderground&utm_medium=referral&utm_content=thumbnails-b:History Thumbnails:) You May Like

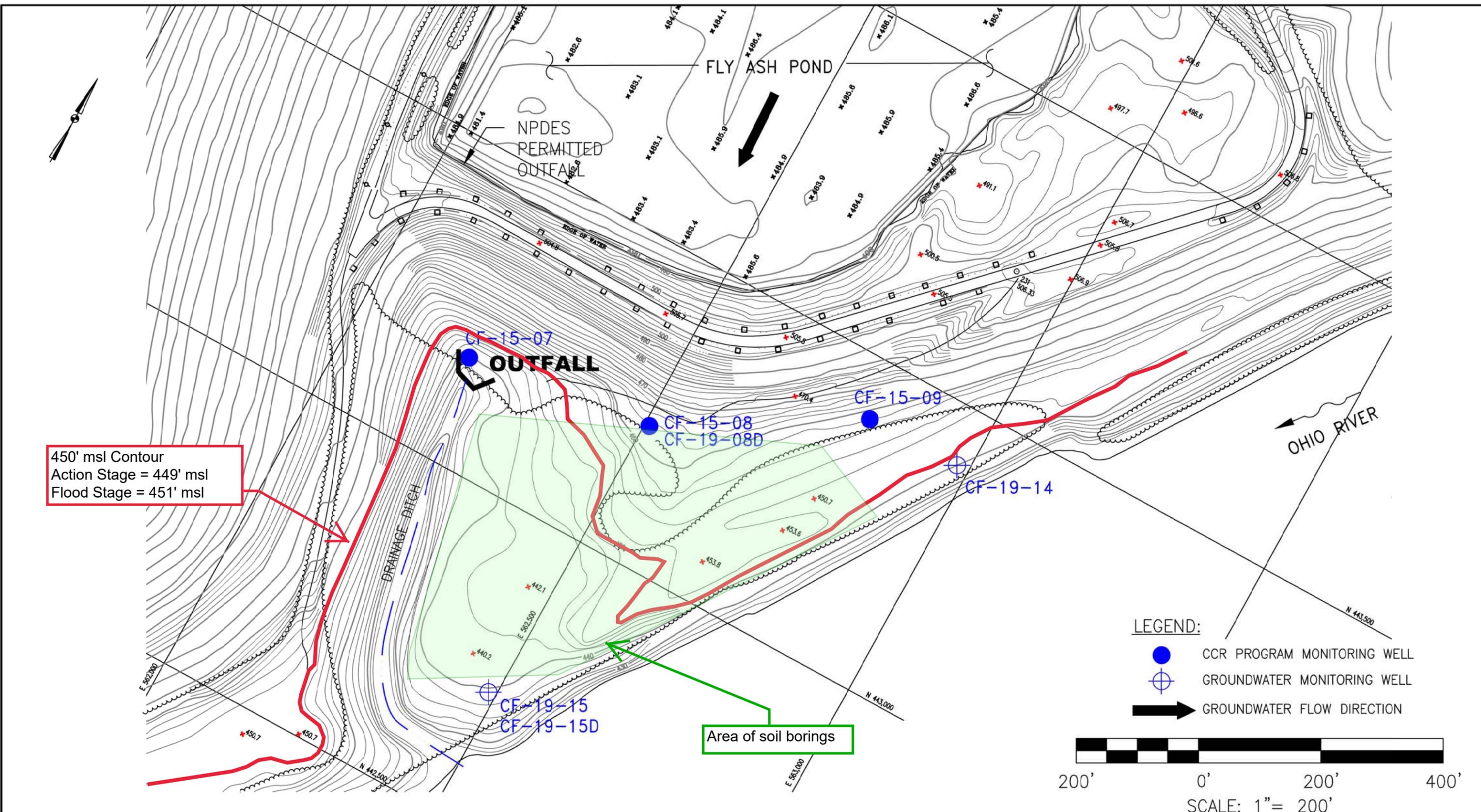
(https://ad.doubleclick.net/ddm/trackclk/N4492.2069703TABOOLA/B21992396.236343246;dc_trk_aid=433567082;dc_trk_cid=99utm_source=taboola&utm_medium=referral)

Drivers who switch save an average of \$669 on car insurance.

Progressive

(https://ad.doubleclick.net/ddm/trackclk/N4492.2069703TABOOLA/B21992396.236343246;dc_trk_aid=433567082;dc_trk_cid=99utm_source=taboola&utm_medium=referral)

(https://www.edmunds.com/nissan/kicks/?utm_medium=display&utm_source=taboola&utm_account=theweatherchannel-wunderground&utm_campaign=taboola_coredesktopnissankicks&utm_adgroup=Meet+the+Awesome+New+Nissan+Kicks_http%)



450' msl Contour
 Action Stage = 449' msl
 Flood Stage = 451' msl

LEGEND:

- CCR PROGRAM MONITORING WELL
- ⊕ GROUNDWATER MONITORING WELL
- ➔ GROUNDWATER FLOW DIRECTION

200' 0' 200' 400'
 SCALE: 1" = 200'

KEY:
 DEPTH IN FEET
 TOTAL UNITS=mg/kg
 SPLP: SYNTHETIC PRECIPITATION LEACHATE PROCEDURE
 SPLP UNITS=ug/L
 ND=NOT DETECTED
 NA=NOT ANALYZED
 HIGHLIGHTED SAMPLES WERE ANALYZED FOR BOTH TOTAL AND SPLP
 MOLYBDENUM

DRAWN BY	JM
DATE	
CHECKED BY	
JOB NO.	2019042-08-CLIFTY
DWG FILE	CLIFTY_New Wells b02.dwg
DRAWING SCALE	AS SHOWN

Applied Geology and Environmental Science, Inc.
 2402 Hookstown Grade Road, Suite 200
 Clinton, PA 15026
 412.264.6453

INDIANA-KENTUCKY ELECTRIC CORPORATION	
CLIFTY CREEK PLANT MADISON, INDIANA CCR PROGRAM	
GROUNDWATER MONITORING WELL LOCATIONS	
DRAWING NAME	FIGURE 1
REV.	0