

Meeting Notice & Agenda

MARION CITY COUNCIL

Tuesday, August 2, 2022 – 5 p.m.

Marion City Hall, 217 South Main Street, Marion, KY

Special Meeting

Call to Order

Business Agenda

1. Update on Lake George and Water Supply
2. Lucile Mine Update
3. Appointment of a Marion City Councilperson Pursuant to KRS 83A.040
4. Appointment of Unexpired Term for 2022 Mayor Pro-Tem
5. 2nd Reading of Ordinance #22-13 entitled, "An Ordinance of the City of Marion, Kentucky Amending Ordinance 19-08 ""Alcoholic Beverage Control Ordinance""
6. Consideration of Appointments to the Marion Recreation, Tourist, and Convention Commission
7. Consideration of Identifying Items as Surplus and Offering to Government Bodies of Eastern Kentucky
8. Adjourn

To: Mayor and City Council
From: Adam Ledford, City Administrator
Re: Agenda Description
Date: August 2, 2022

Call to Order
Public Comments

Business Agenda

I. Update on Lake George & Water Supply

Description:

Your packet includes:

- Rough draft plans from Bell Engineering on a water connection between Caldwell & Crit-Liv systems
- A report from BFW on Lake George along with plans and estimates presented to the DOW for next step options

Representatives from Division of Water, Rural Water, and Emergency Management will be on-hand to share updates and answer your questions. Topics will include leaks, water levels, boil water advisory, Sturgis interconnection, and bottled water distribution.

II. Lucile Mine Update

Description:

Your packet includes several items in association to this issue:

- 2013 water test results
- C&C quote for pumping the mine for a week
- August permit to pump
- Eclipse Engineering's assessment of the 2013 data
- Q&A from DOW

Additionally, I have received estimates on testing over the 1-year qualification period. It will cost the City roughly \$60,000 to conduct the test necessary to have this permitted as a water source over the 12 month study. If the council is serious about continuing down this path, I suggest we take a step back and conduct a complete spectrum of test on the water in and near the mine. However, once we begin pumping, we are likely committed to spending at least \$120,000 reviewing this option over the next year.

III. Appointment of Councilperson

Description:

Pursuant to Phyliss' passing on July 27, 2022, the Council now has 30 days to fill the open seat. Candidates must be nominated by a standing council member. A copy of KRS 83A.040 explains the rules for filling the position. If council fails to fill the position tonight, the council will need to schedule a special council meeting before the end of the month in order to avoid turning this issue over to the governor.

KRS 83A.040

(5) If one (1) or more vacancies on a legislative body occur in a way that one (1) or more members remain seated, the remaining members shall within thirty (30) days fill the vacancies one (1) at a time, giving each new appointee reasonable notice of his selection as will enable him to meet and act with the remaining members in making further appointments until all vacancies are filled. If vacancies occur in a way that all seats become vacant, the Governor shall appoint qualified persons to fill the vacancies sufficient to constitute a quorum. Remaining vacancies shall be filled as provided in this section.

(6) If for any reason, any vacancy in the office of mayor or the legislative body is not filled within thirty (30) days after it occurs, the Governor shall promptly fill the vacancy by appointment of a qualified person who shall serve for the same period as if otherwise appointed.

(7) No vacancy by reason of voluntary resignation in the office of mayor or on a legislative body shall occur unless a written resignation which specifies a resignation date is tendered to the legislative body. The resignation shall be effective at the next regular or special meeting of the city legislative body occurring after the date specified in the written letter of resignation.

(8) Pursuant to KRS 118.305(7), if a vacancy occurs which is required by law to be filled temporarily by appointment, the legislative body or the Governor, whichever is designated to make the appointment, shall immediately notify in writing both the county clerk and the Secretary of State of the vacancy.

IV. Appointment of Mayor Pro-Tem

Description:

With the passing of Phyliss, the position of Mayor Pro-Tem is currently unoccupied. The Mayor will request appointment by the council of a Mayor Pro-Tem to serve during the remaining term to end on December 31, 2022. State statute (KRS 83A.130.5) and city code (31.12) indicates that the Mayor Pro-Tem will serve as Mayor in the absence of the Mayor.

V. Alcohol Serving Ordinance

Description:

In your packet is a copy of the ordinance previously presented and now ready for final consideration. A motion and second will be necessary to proceed forward with a roll call vote. This ordinance is consistent with recent changes in state law, but it subject to the jurisdiction's prerogative towards younger adults serving.

VI. Tourism Appointment Confirmation

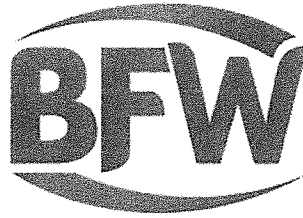
Description:

The Mayor will request confirmation of the council for his appointments to the Marion Tourism Commission. A vote of the council is required to complete the appointment process.

VII. Mayor/Council/Staff Forum

- The Sewer Plant Project has reached approximately 60% completion. Eclipse Engineering is planning to attend the next regular meeting to provide an update.
- Negotiations to host the county courts for the next few years continue. A draft agreement should be ready in the next few weeks.
- The City awaits delivery of a new mother board to fix issues with the fire suppression system at City Hall.

VIII. Adjournment



BACON | FARMER | WORKMAN
ENGINEERING & TESTING, INC.
500 SOUTH 17th STREET | PADUCAH, KY 42003

July 15, 2022

Mr. Charles Adam Ledford
City Administrator
City of Marion
217 South Main Street
Marion, Kentucky 42064

RE: ***Proposal for Geotechnical Services
Lake George Dam Emergency Repairs
Marion, Kentucky***

Dear Mr. Ledford,

Bacon Farmer Workman Engineering & Testing, Inc. (BFW) is pleased to provide you with this proposal for geotechnical services for the above-referenced project. The following proposal outlines our scope of services based on the project information provided. This proposal is based on the following assumptions:

- The site is located on a property readily accessible with a skid steer-mounted rotary CPT rig with field crew and support truck.
- Right-of-Entry to conduct the geotechnical exploration will be provided by the Client.
- No evidence of buried debris was made known to BFW in any of the areas to be investigated.
- All known, on site, private utility lines will be located and marked by the Client.

PROJECT INFORMATION

Initial concerns related to Lake George were identified on or about April 27, 2022. A clean water leak was detected at the dam and communicated to the City of Marion Water Staff. The City of Marion began assessing the leak and immediately notified the Kentucky Division of Water (KDOW) and they began reviewing the leak.

On April 29, 2022, a small hole had developed mid-way up the dam, immediately above the area where the leak had occurred. It was determined that the size of the sinkhole on the side of the dam had grown exponentially, and plans were made to organize a controlled breach. The dam was breached at what was identified by KDOW to be the safest point on the dam. In an effort to prevent dam failure, a controlled breach was dug to the west of the hole. The water was diverted around the back side of the dam adjacent to Lake George Drive and directed to Crooked Creek. After about 5 to 7 days of draining, the controlled breach reduced the water level to below the breach. By early June, Lake George was drained to a level which was less than one (1) foot, which has allowed for safe evaluation of the City's system and any damage to it.

A *Corrective Action Plan* dated June 23, 2022 was prepared by BFW and as part of the plan, a geotechnical exploration is required to evaluate the embankment and foundation soils and the stability of the dam for various water elevations as part of a temporary emergency configuration. The geotechnical exploration and analysis included in this proposal will be performed in general accordance with the *Guidelines for the Geotechnical Investigation and Analysis of Existing Earth Dams* published by the KDOW.

SUSBSURFACE EXPLORATION

Before starting field activities, any knowledge of buried utilities near the proposed drilling area will need to be marked in the field with visible paint or disclosed to BFW; we are not responsible for damage to unmarked or undisclosed underground utilities. BFW will initiate the One-Call underground utility locating service prior to drilling. Private utility location using ground penetrating radar can be arranged for an additional fee.

BFW proposes to explore the subsurface conditions by eight (8) Piezocone Penetration Test Soundings (CPTu) soundings along the existing dam. A site plan depicting the proposed sounding locations is attached to this proposal. The CPTu soundings will be advanced to refusal, which we anticipate will be encountered on bedrock at depths of 15 to 40 feet. The CPTu tests are conducted in accordance with ASTM D5778 *Standard Test Method for Performing Electronic Friction Cone and Piezocone Penetration Testing of Soils*. The CPTu hydraulically pushes an instrumented cone through the soil, while continuous readings are recorded on a portable computer. No soil samples are gathered through this subsurface investigation technique. However, insitu measurements of tip and side resistance and porewater pressure are taken every one inch.

The data is interpreted and presented on CPTu Logs, which are included in the report, and graphically illustrate the relative strength of the soils encountered and provide an approximate soil stratigraphy. Stratification lines on the CPTu Log represent approximate boundaries between soil behavior types based on current accepted correlations between the tip, side, and porewater pressure measurements.

To supplement the data collected from the CPTu soundings, BFW will also advance a series of hand auger borings in the area of the failure after the completion of the CPTu soundings. The approximate areas where we will advance the hand auger borings are shown on the attached site plan. However, the actual locations and depths will be dependent upon the results of the CPTu soundings. We have included one day of field work in this proposal, which we anticipate will allow us to hand auger 6 to 8 locations. Field vane shear tests will be performed within the hand auger borings to provide additional strength information of the soils. Bag samples of the soils from the hand auger borings will be collected for laboratory testing. The CPTu soundings and hand auger borings will be backfilled with bentonite chips or cement bentonite grout upon completion.

Upon the completion of the field exploration, the samples will be transported to our laboratory for classification and characterization. Laboratory testing for the project will include moisture Contents, Atterberg Limits tests, and/or sieve analysis for soil classification and assessing seepage characteristics.

Analysis and Reporting

The results of the field exploration and laboratory testing will be reviewed by our geotechnical engineer. We will use the data collected during the subsurface exploration to perform stability analyses of the newly proposed temporary configuration as required in the *Guidelines for the Geotechnical Investigation and Analysis of Existing Earth Dams*. The stability analysis conditions analyzed will include Rapid Drawdown, Long-Term Steady Seepage and Earthquake Loading. Our findings, results of the stability analysis, and associated recommendations for the temporary configuration of the dam will be included in a Geotechnical Report.

FEE AND SCHEDULE

BFW will provide the geotechnical services detailed in this proposal for the lump sum fee summarized in Table 1.

Table 1 – Summary of Fees


Task	Fee (\$)
Field Exploration	14,550.00
Laboratory Testing	3,250.00
Engineering Analysis and Report Preparation	10,000.00
Total	27,800.00

Due to the emergency nature of the project, we have already begun coordinating the field exploration; however, we cannot mobilize the to the site until formal authorization has been received. We have tentatively scheduled the field work to occur the week of July 25th, weather permitting. We estimate that subsurface exploration will be completed in two to three days. Laboratory testing and report preparation will require three to four weeks after completion of the field exploration; however, preliminary information will be available beforehand.

If these terms are acceptable, sign the Authorization to Proceed at the bottom of the page and return. Should you have any further questions please, feel free to contact our office at (270) 443-1995.

Sincerely,
 Bacon Farmer Workman Engineering & Testing, Inc.


 Christopher L Mathews, PE
 Project Manager/Geotechnical Engineer


 Christopher N. Farmer, P.E.
 Principal Engineer

Enclosure: Sounding and Boring Location Plan

AUTHORIZATION TO PROCEED	
Geotechnical Services – Lake George Dam Emergency Repairs	
Geotechnical Exploration and Reporting - \$27,800.00 □	
Signature:	Date:
Printed Name:	
Title:	



PROJECT NO. 22331	DATE 7/2/2023
DRAWN BY: JAK	CHECKED BY: LHM
REV. 1	DESCRIPTION

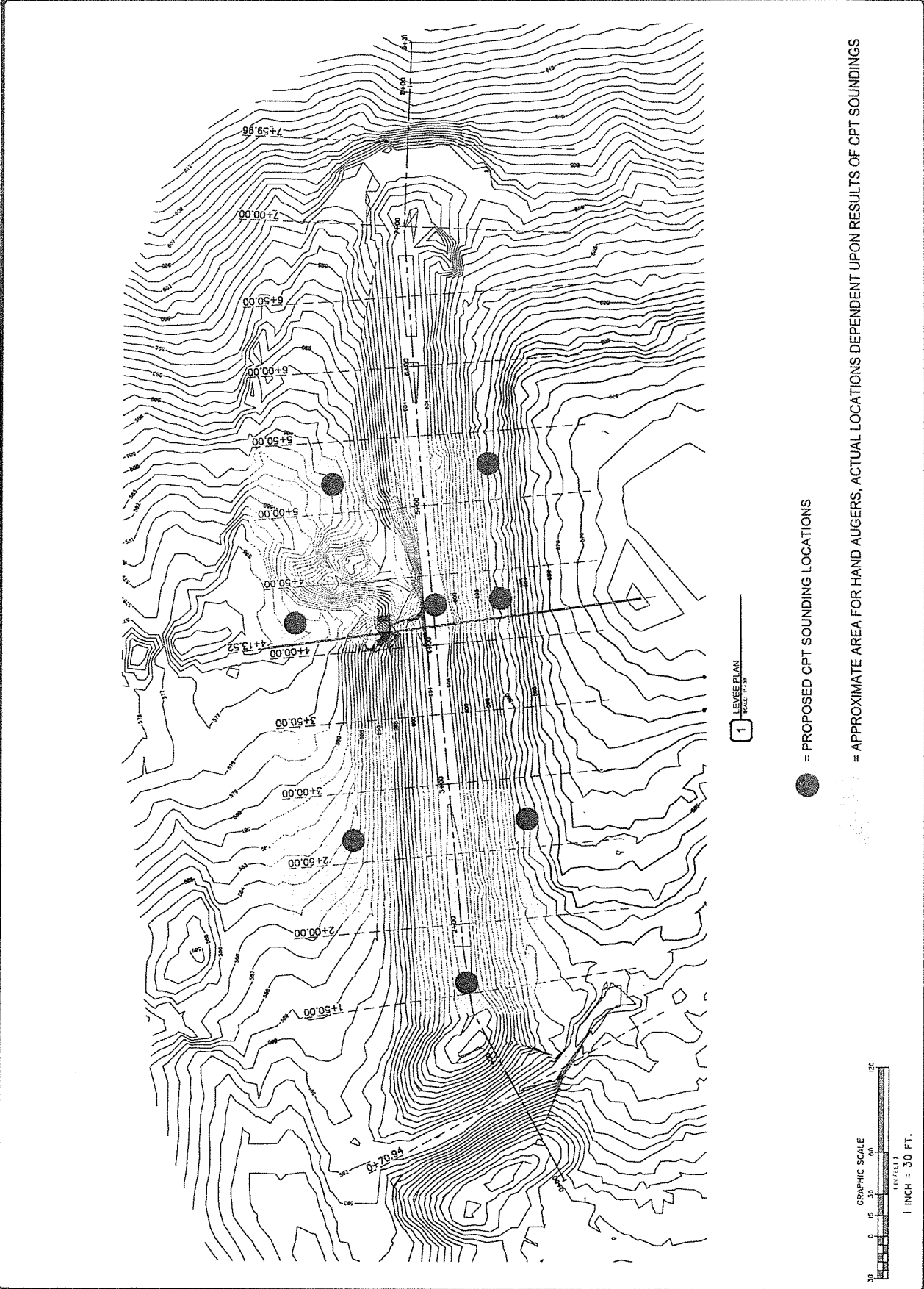
BFW

BACON | FABER | WICKMAN
ENGINEERING & TESTING, INC.

1000 W. MAIN ST., SUITE 100
MADISON, KY 40302
502.261.1111
WWW.BFW-ET.COM

LEVEE PLAN
GTY OF HARBON - LAKE GEORGE
200
GTY OF HARBON
MADISON, KY.

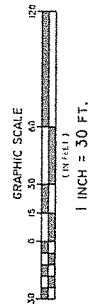
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1 LEVEE PLAN
SCALE: 1"=30'

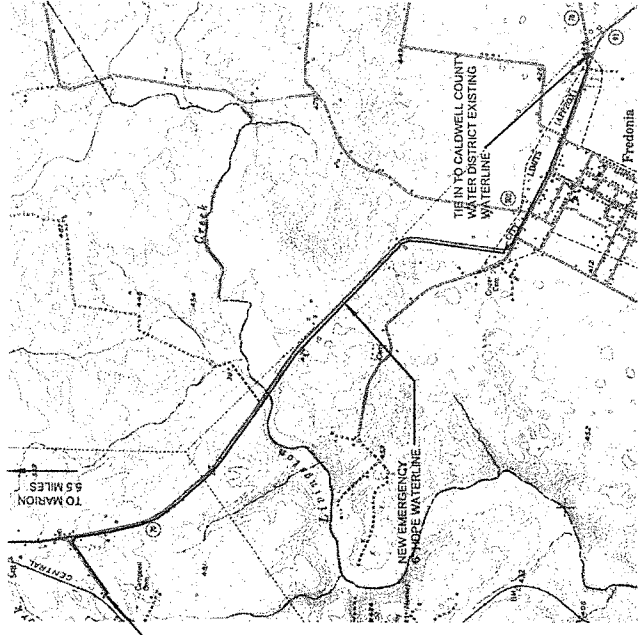
● = PROPOSED CPT SOUNDING LOCATIONS

○ = APPROXIMATE AREA FOR HAND AUGERS, ACTUAL LOCATIONS DEPENDENT UPON RESULTS OF CPT SOUNDINGS



EMERGENCY WATERLINE CONNECTION

CONTRACT 676-22-01
 CITY OF MARION
 CRITTENDEN COUNTY, KENTUCKY
 JULY, 2022



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Draft - Not For Construction

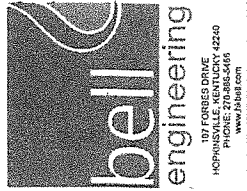
CONTRACT NO.
 676-22-01
 JULY, 2022

EMERGENCY WATERLINE CONNECTION
 CITY OF MARION
 CRITTENDEN COUNTY, KENTUCKY



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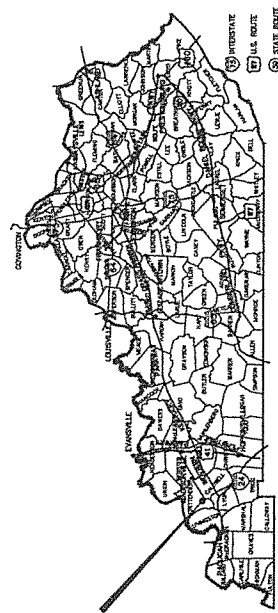
- REVISIONS**
- REVISION NO. _____ DATE _____ BY _____
 - REVISION DESCRIPTION _____
- CLIENT REVIEW**
- BELL (QA) REVIEW
 - DIVISION OF WATER REVIEW
 - HBC REVIEW
 - BID DOCUMENTS
 - RECORD DRAWINGS





DIVISION	678-22-01
CONTRACT NO.	JULY/2022
DATE	15.02
SHEET NO.	1 OF 7

PROJECT LOCATION



VICINITY MAP
NOT TO SCALE

DISINFECTION SPECIFICATION

DRAWINGS SHALL BE IN ACCORDANCE WITH ANY DISINFECTION SPECIFICATIONS AND THE CONTRACTOR SHALL DISINFECT ALL WATER MAINS AND SERVICE LINES TO BE INSTALLED. THE CONTRACTOR SHALL DISINFECT ALL WATER MAINS AND SERVICE LINES TO BE INSTALLED. THE CONTRACTOR SHALL DISINFECT ALL WATER MAINS AND SERVICE LINES TO BE INSTALLED. THE CONTRACTOR SHALL DISINFECT ALL WATER MAINS AND SERVICE LINES TO BE INSTALLED.

GENERAL NOTES AND SPECIFICATIONS

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EROSION PREVENTION AND SEDIMENT CONTROL

THE CONTRACTOR SHALL SUBMIT A NOTICE OF INTENT (NOI) TO THE AFFECTED AGENCIES PRIOR TO COMMENCING ANY CONSTRUCTION ACTIVITY. THE CONTRACTOR SHALL SUBMIT A NOTICE OF INTENT (NOI) TO THE AFFECTED AGENCIES PRIOR TO COMMENCING ANY CONSTRUCTION ACTIVITY. THE CONTRACTOR SHALL SUBMIT A NOTICE OF INTENT (NOI) TO THE AFFECTED AGENCIES PRIOR TO COMMENCING ANY CONSTRUCTION ACTIVITY.

UTILITY OWNERS

- CITY OF MARION UTILITY DEPARTMENT - 217 SOUTH MAIN STREET, MARION, KY 40340
- TELEPHONE AUTHORITY - 100 SOUTH MAIN STREET, MARION, KY 40340
- INDUSTRIAL DEVELOPMENT BOARD - 100 SOUTH MAIN STREET, MARION, KY 40340
- ELECTRIC POWER AND LIGHT COMPANY - 100 SOUTH MAIN STREET, MARION, KY 40340
- MARION COUNTY WATER DEPARTMENT - 100 SOUTH MAIN STREET, MARION, KY 40340
- COUNSELL COUNTY WATER DISTRICT - 100 SOUTH MAIN STREET, MARION, KY 40340

LEGEND:

PROPOSED WATER LINE	---
EXISTING WATER LINE	---
NEW FLUSH HYDRANT ASSEMBLY	⊙
NEW AIR-RELEASE VALVE	⊙
EXISTING FENCE	---
ROAD RIGHT-OF-WAY	---
TELECOMMUNICATIONS LINES	---
PROPERTY LINE	---
NATURAL GAS LINE	---
SANITARY SEWER LINE	---
SANITARY SEWER MANHOLE	⊙
TELECOMMUNICATIONS PEDESTAL	⊙
EXISTING CUP	---

CITY OF MARION
217 SOUTH MAIN STREET
MARION, KENTUCKY

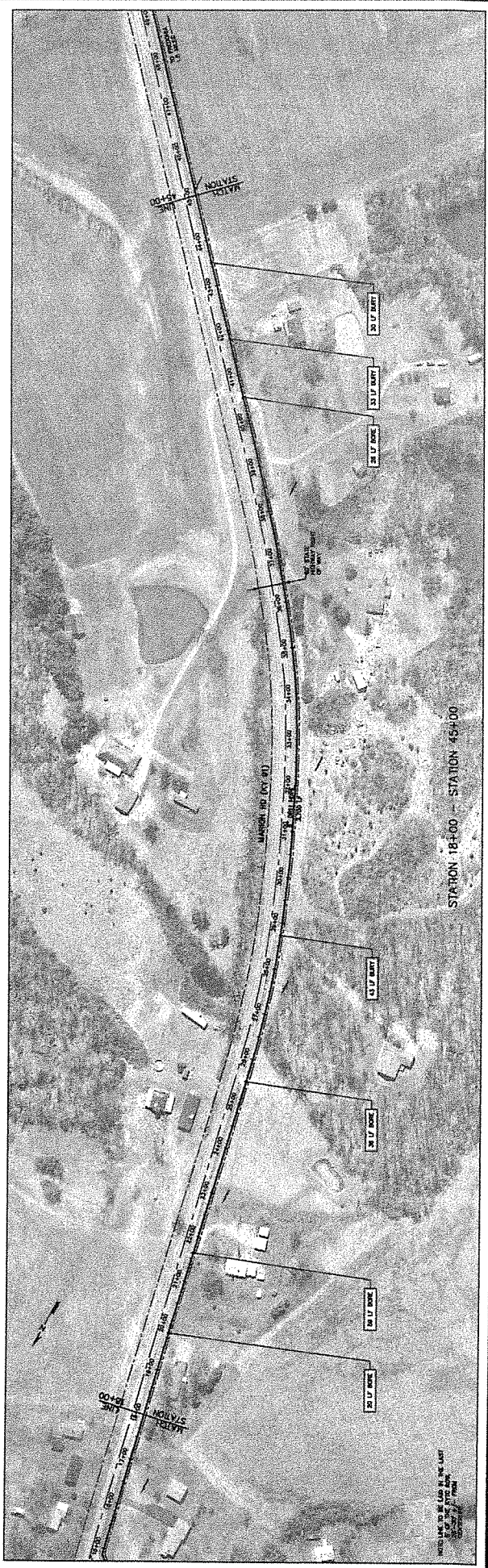
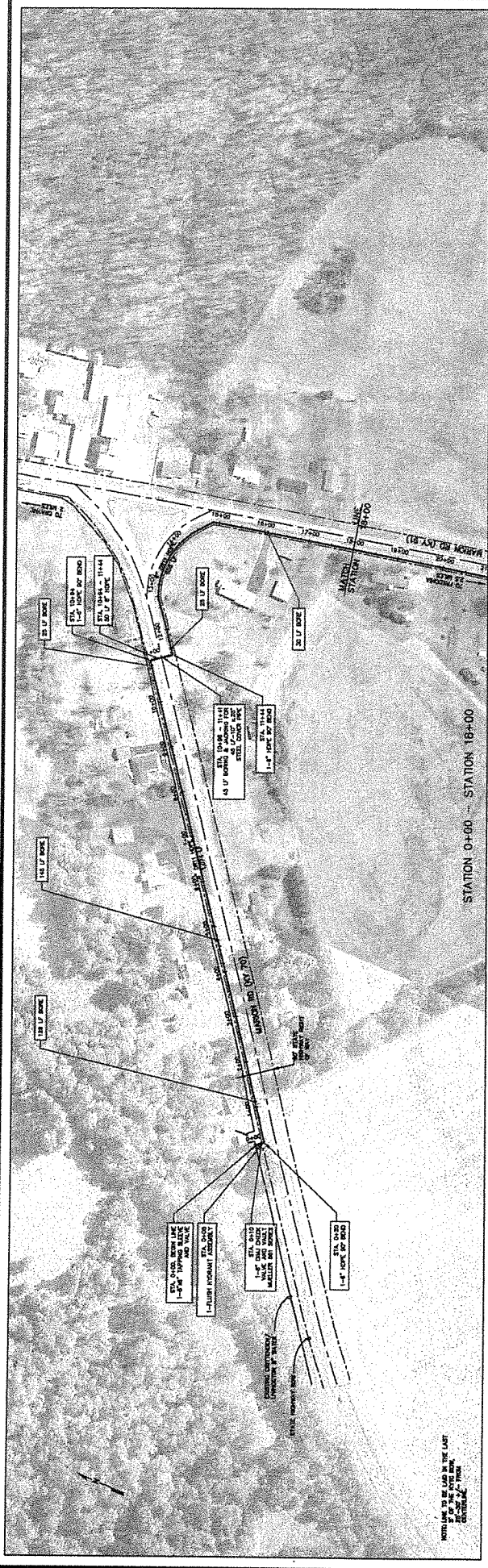
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811 Before you dig.

DESIGNER	DATE	BY
CHECKED	R.P.F.	
APPROVED	R.P.F.	

GRAPHIC SCALE	SCALE: NONE
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REVISION

1 OF 7



DESIGNER	MES	DATE	BY	REVISION
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CHECKED	RLP			
APPROVED	RLP			

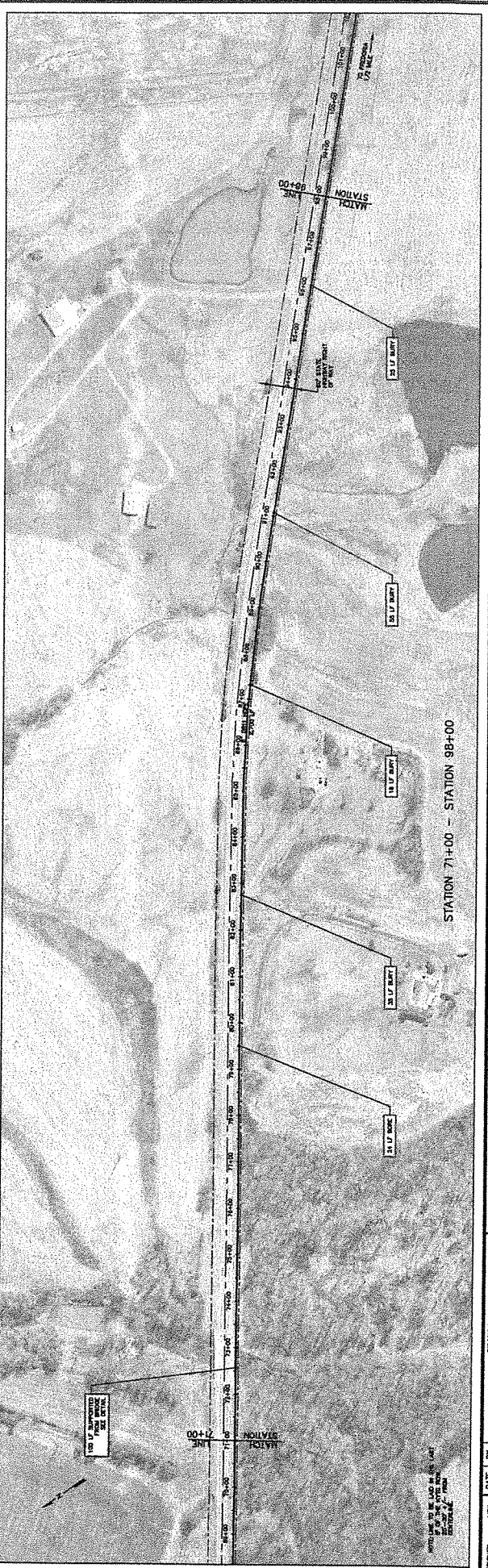
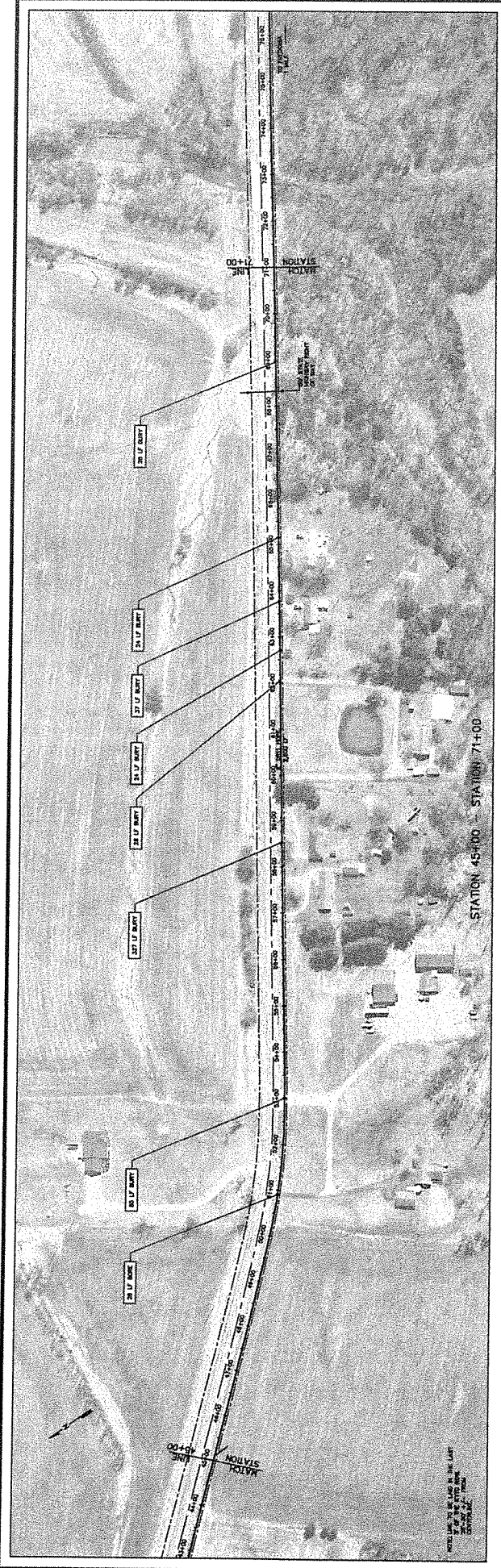
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
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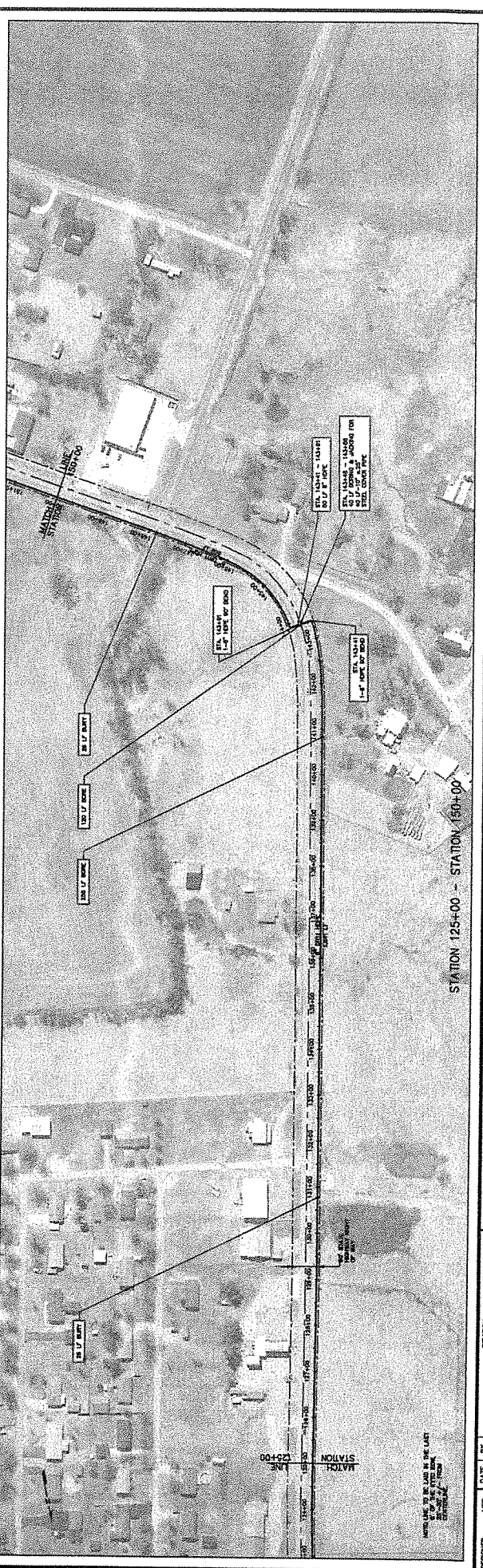
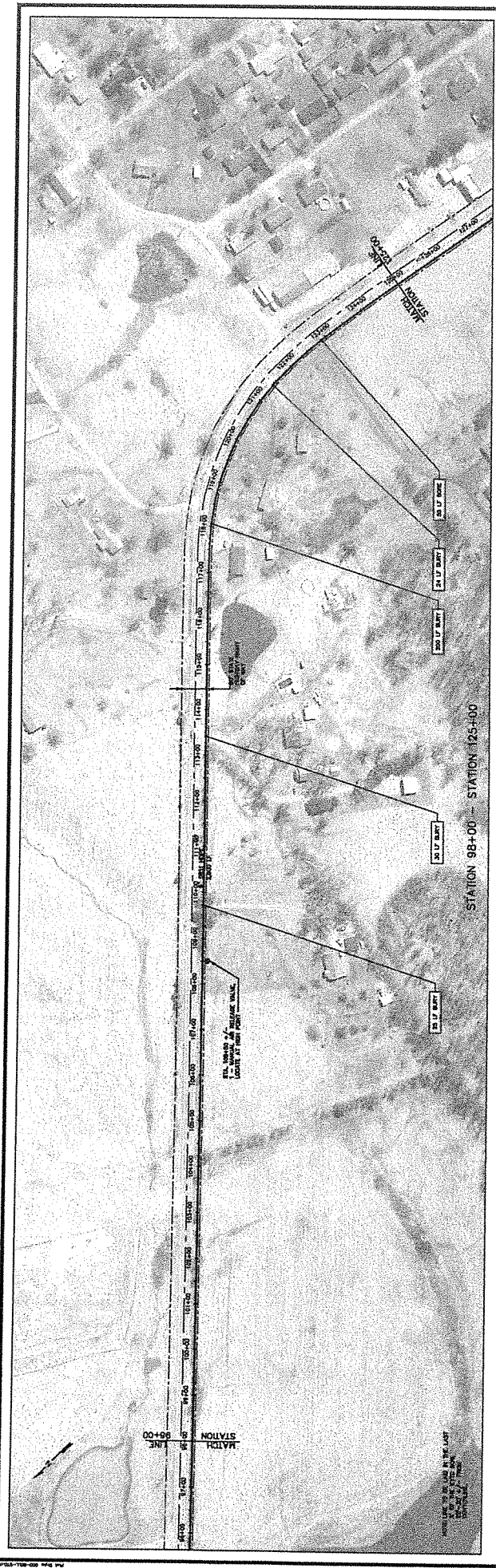
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CITY OF MARION 217 S. MAIN STREET MARION, KENTUCKY	EMERGENCY WATERLINE CONNECTION
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DIVISION	
CONTRACT NO.	074-22-01
DATE	JULY, 2022
SHEET NO.	02 OF 6



DESIGNER DATE DRAWN CHECKED APPROVED	BY 	REVISION 	GRAPHIC SCALE SCALE: 1" = 100'	ALL RIGHTS RESERVED THIS DOCUMENT IS THE PROPERTY OF THE ENGINEER IT IS TO BE USED ONLY FOR THE PROJECT AND SITE IDENTIFIED HEREON. IT IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS WITHOUT THE WRITTEN PERMISSION OF THE ENGINEER	  Engineering	CITY OF MARION 217 S. MAIN STREET MARION, KENTUCKY	EMERGENCY WATERLINE CONNECTION CALDWELL COUNTY TO MARION	DIVISION CONTRACT NO. 076-22-01 DATE JULY, 2002 SHEET NO. 3 OF 6
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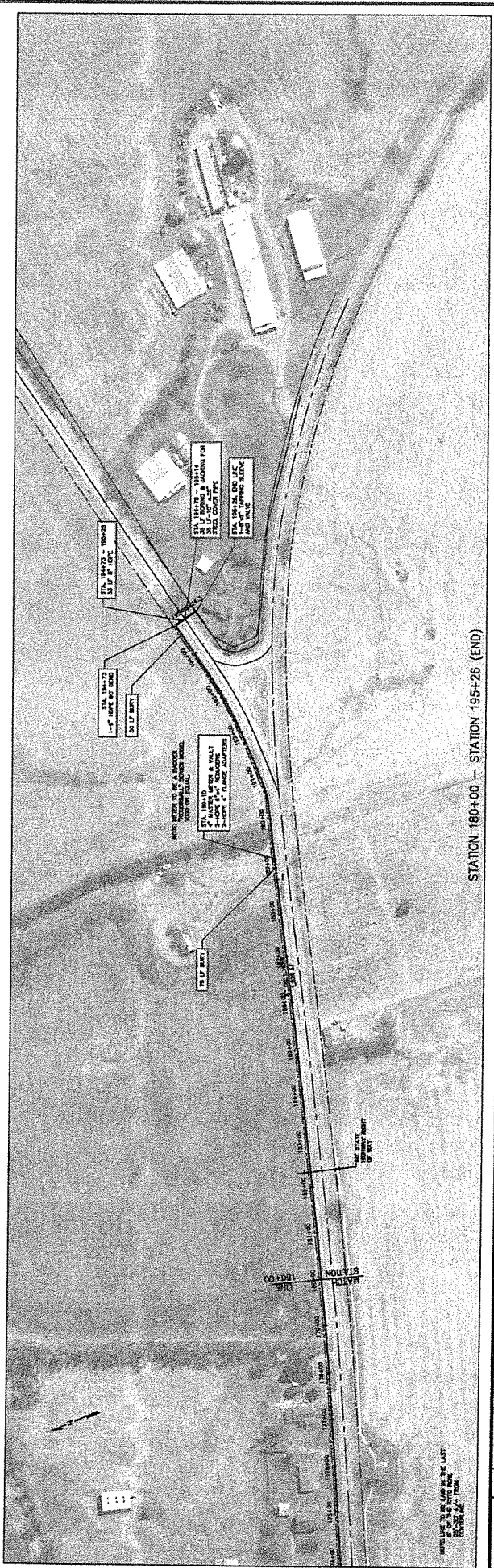
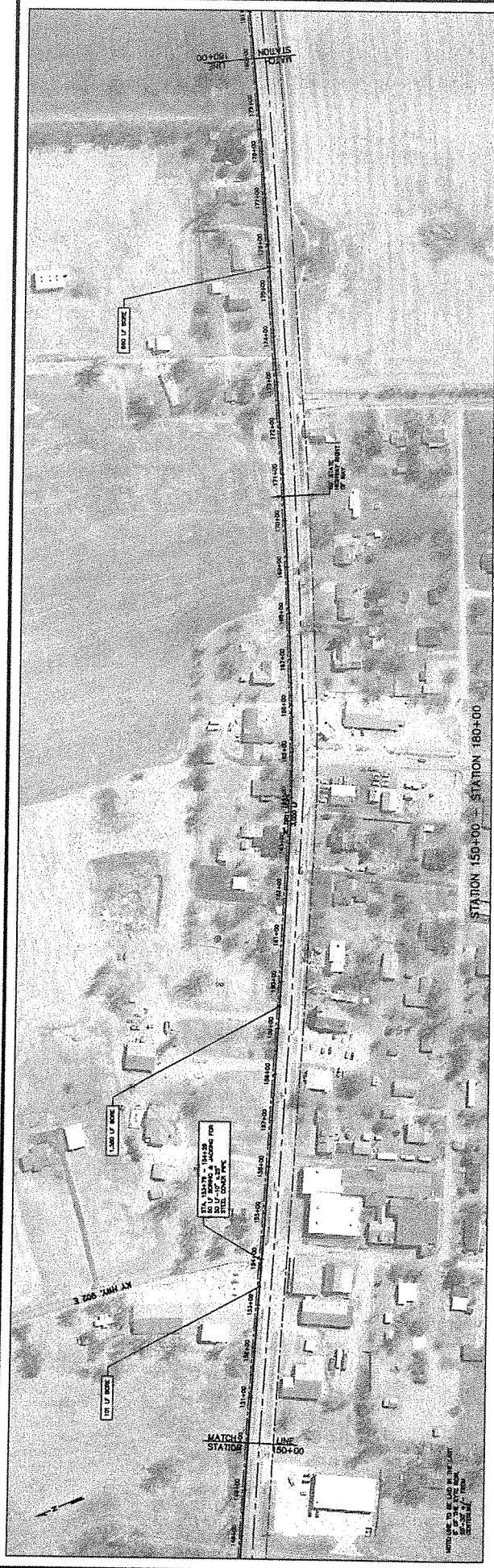
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CITY OF MARION
 217 S. MAIN STREET
 MARION, KENTUCKY

EMERGENCY WATERLINE CONNECTION
 CALDWELL COUNTY TO MARION

DIVISION
 CONTRACT NO. 076-22-01
 DATE 03.17.2022
 SHEET NO. 4 OF 6



DESIGNER	DATE	BY	REVISION	
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APPROVED	RUP	DATE	BY	REVISION

GRAPHIC SCALE

SCALE: 1" = 100'

STATION 180+00 — STATION 195+26 (END)

CITY OF MARION
217 S. MAIN STREET
MARION, KENTUCKY

EMERGENCY WATERLINE CONNECTION

DIVISION	CONTRACT NO.	DATE	SHEET NO.
	019-22-01	05.17.2022	3 OF 6

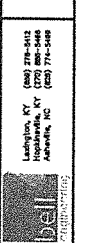


DIVISION
CONTRACT NO. 878-22-01
DATE JULY 2022
SHEET NO. 6 OF 6

STANDARD DETAILS

CITY OF MARION
217 SOUTH MAIN STREET
MARION, KENTUCKY

Washington, KY (606) 778-9418
Marion, KY (606) 774-5466
Marion, NC (850) 774-5466



SCALE: AS NOTED

DESIGNER	MES	DATE	BY	REVISION

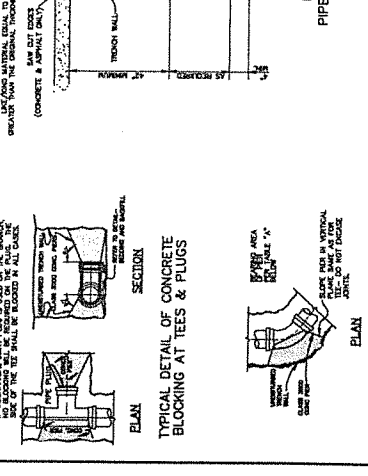
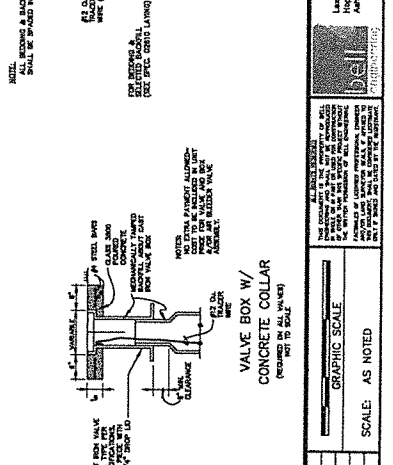
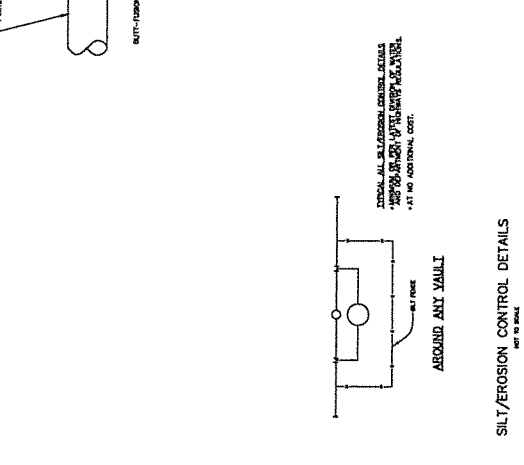
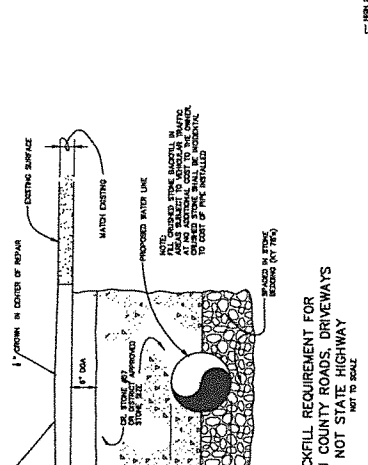
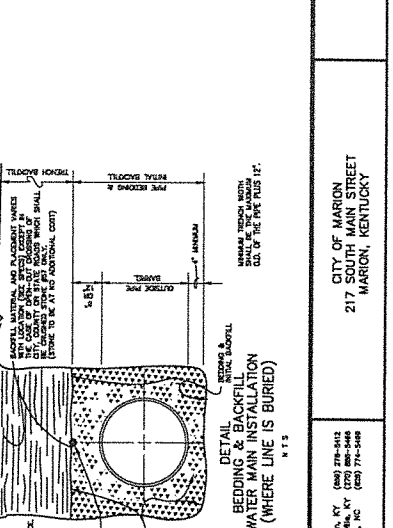
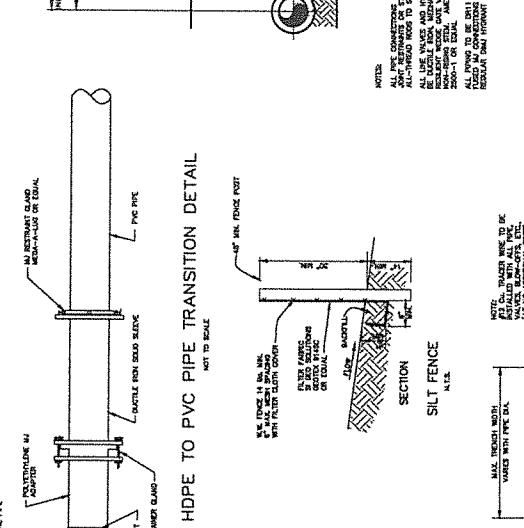
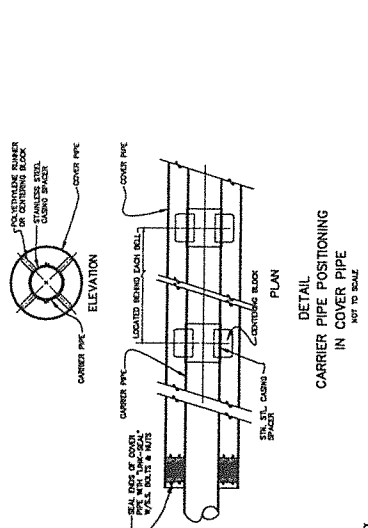
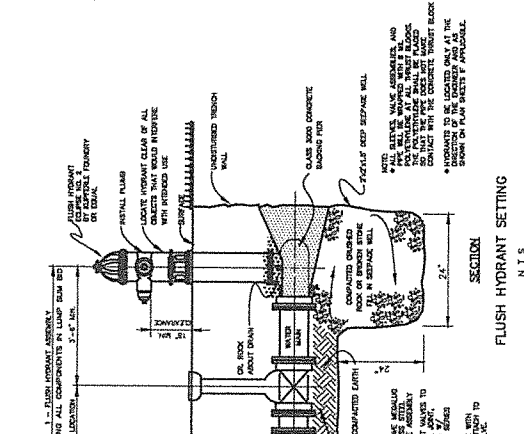
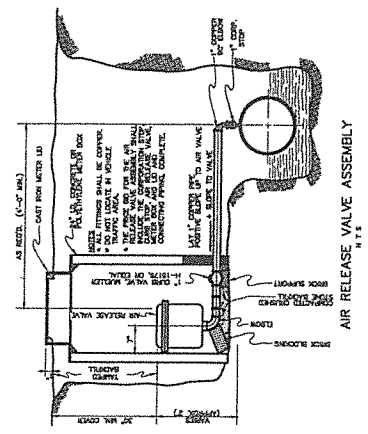
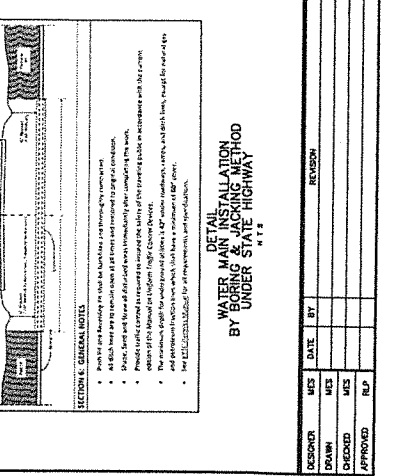


TABLE "A"

SOIL TYPE	DESIGN PRESSURE (PSF)	NO. FEET/FOOT	DESIGN FACTOR FOR PRESSURE (FD)	DESIGN PRESSURE (PSF)	NO. FEET/FOOT	DESIGN FACTOR FOR PRESSURE (FD)
1	1.0	0.18	0.11	0.08	0.07	0.04
2	1.0	0.28	0.20	0.15	0.10	0.06
3	1.0	0.47	0.34	0.26	0.18	0.11
4	1.0	0.71	0.52	0.39	0.27	0.17
5	1.0	1.00	0.73	0.54	0.37	0.24
6	1.0	1.33	0.97	0.73	0.50	0.33
7	1.0	1.67	1.21	0.91	0.62	0.41
8	1.0	2.00	1.54	1.17	0.80	0.53
9	1.0	2.33	1.88	1.41	0.96	0.63
10	1.0	2.67	2.21	1.64	1.11	0.73
11	1.0	3.00	2.55	1.88	1.27	0.83
12	1.0	3.33	2.88	2.11	1.43	0.93
13	1.0	3.67	3.22	2.34	1.59	1.03
14	1.0	4.00	3.55	2.57	1.75	1.13
15	1.0	4.33	3.89	2.80	1.91	1.23
16	1.0	4.67	4.22	3.03	2.07	1.33
17	1.0	5.00	4.56	3.26	2.23	1.43
18	1.0	5.33	4.89	3.49	2.39	1.53
19	1.0	5.67	5.23	3.72	2.55	1.63
20	1.0	6.00	5.56	3.95	2.71	1.73
21	1.0	6.33	5.90	4.18	2.87	1.83
22	1.0	6.67	6.23	4.41	3.03	1.93
23	1.0	7.00	6.57	4.64	3.19	2.03
24	1.0	7.33	6.90	4.87	3.35	2.13
25	1.0	7.67	7.24	5.10	3.51	2.23
26	1.0	8.00	7.57	5.33	3.67	2.33
27	1.0	8.33	7.91	5.56	3.83	2.43
28	1.0	8.67	8.24	5.79	3.99	2.53
29	1.0	9.00	8.58	6.02	4.15	2.63
30	1.0	9.33	8.91	6.25	4.31	2.73
31	1.0	9.67	9.25	6.48	4.47	2.83
32	1.0	10.00	9.58	6.71	4.63	2.93
33	1.0	10.33	9.92	6.94	4.79	3.03
34	1.0	10.67	10.25	7.17	4.95	3.13
35	1.0	11.00	10.59	7.40	5.11	3.23
36	1.0	11.33	10.92	7.63	5.27	3.33
37	1.0	11.67	11.26	7.86	5.43	3.43
38	1.0	12.00	11.59	8.09	5.59	3.53
39	1.0	12.33	11.93	8.32	5.75	3.63
40	1.0	12.67	12.26	8.55	5.91	3.73
41	1.0	13.00	12.60	8.78	6.07	3.83
42	1.0	13.33	12.93	9.01	6.23	3.93
43	1.0	13.67	13.27	9.24	6.39	4.03
44	1.0	14.00	13.60	9.47	6.55	4.13
45	1.0	14.33	13.94	9.70	6.71	4.23
46	1.0	14.67	14.27	9.93	6.87	4.33
47	1.0	15.00	14.61	10.16	7.03	4.43
48	1.0	15.33	14.94	10.39	7.19	4.53
49	1.0	15.67	15.28	10.62	7.35	4.63
50	1.0	16.00	15.61	10.85	7.51	4.73
51	1.0	16.33	15.95	11.08	7.67	4.83
52	1.0	16.67	16.28	11.31	7.83	4.93
53	1.0	17.00	16.62	11.54	7.99	5.03
54	1.0	17.33	16.95	11.77	8.15	5.13
55	1.0	17.67	17.29	12.00	8.31	5.23
56	1.0	18.00	17.62	12.23	8.47	5.33
57	1.0	18.33	17.96	12.46	8.63	5.43
58	1.0	18.67	18.29	12.69	8.79	5.53
59	1.0	19.00	18.63	12.92	8.95	5.63
60	1.0	19.33	18.96	13.15	9.11	5.73
61	1.0	19.67	19.30	13.38	9.27	5.83
62	1.0	20.00	19.63	13.61	9.43	5.93
63	1.0	20.33	19.97	13.84	9.59	6.03
64	1.0	20.67	20.30	14.07	9.75	6.13
65	1.0	21.00	20.64	14.30	9.91	6.23
66	1.0	21.33	20.97	14.53	10.07	6.33
67	1.0	21.67	21.31	14.76	10.23	6.43
68	1.0	22.00	21.64	14.99	10.39	6.53
69	1.0	22.33	21.98	15.22	10.55	6.63
70	1.0	22.67	22.31	15.45	10.71	6.73
71	1.0	23.00	22.65	15.68	10.87	6.83
72	1.0	23.33	22.98	15.91	11.03	6.93
73	1.0	23.67	23.32	16.14	11.19	7.03
74	1.0	24.00	23.65	16.37	11.35	7.13
75	1.0	24.33	23.99	16.60	11.51	7.23
76	1.0	24.67	24.32	16.83	11.67	7.33
77	1.0	25.00	24.66	17.06	11.83	7.43
78	1.0	25.33	24.99	17.29	11.99	7.53
79	1.0	25.67	25.33	17.52	12.15	7.63
80	1.0	26.00	25.66	17.75	12.31	7.73
81	1.0	26.33	26.00	17.98	12.47	7.83
82	1.0	26.67	26.33	18.21	12.63	7.93
83	1.0	27.00	26.67	18.44	12.79	8.03
84	1.0	27.33	27.00	18.67	12.95	8.13
85	1.0	27.67	27.34	18.90	13.11	8.23
86	1.0	28.00	27.67	19.13	13.27	8.33
87	1.0	28.33	28.01	19.36	13.43	8.43
88	1.0	28.67	28.34	19.59	13.59	8.53
89	1.0	29.00	28.68	19.82	13.75	8.63
90	1.0	29.33	29.01	20.05	13.91	8.73
91	1.0	29.67	29.35	20.28	14.07	8.83
92	1.0	30.00	29.68	20.51	14.23	8.93
93	1.0	30.33	30.02	20.74	14.39	9.03
94	1.0	30.67	30.35	20.97	14.55	9.13
95	1.0	31.00	30.69	21.20	14.71	9.23
96	1.0	31.33	31.02	21.43	14.87	9.33
97	1.0	31.67	31.36	21.66	15.03	9.43
98	1.0	32.00	31.69	21.89	15.19	9.53
99	1.0	32.33	32.03	22.12	15.35	9.63
100	1.0	32.67	32.36	22.35	15.51	9.73



ANDY BESHEAR
GOVERNOR



REBECCA W. GOODMAN
SECRETARY

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION

ANTHONY R. HATTON
COMMISSIONER

300 SOWER BOULEVARD
FRANKFORT, KENTUCKY 40601

July 26, 2022

Adam Ledford
217 S Main St
Marion, KY 42064

One Time Discharge Authorization
AI ID: 69894
City Of Marion Property
Dewatering City System to recharge Lucile Mine Aquifer
Crittenden County, Kentucky

Dear Mr. Ledford:

The Surface Water Permits Branch (SWPB) has reviewed your letter of July 26, 2022, concerning the above referenced project. The following conditions shall apply:

1. The discharge flow shall be controlled such that erosion and denuding of the riparian zone do not occur.
2. At least 48 hours before beginning the discharge, the Madisonville Regional Office of the Division of Water shall be notified at (270) 824-7529.
3. The discharge is to be sampled at the beginning, middle and end of the discharge for pH, Iron, Manganese, Fluoride, and Total Suspended Solids by U.S. EPA approved methods. Effluent monitoring results are to be supplied to the regional office within 30 days.
4. All discharges must cease or be mitigated if water quality standards (401 KAR Chapter 10) are or will be exceeded.
5. Best Management Practices shall be employed to ensure that the activity does not cause an adverse environmental impact.

Please contact me with any questions concerning this authorization to discharge at 502-782-6584 or email me at Tyler.Cook@ky.gov.

Sincerely,

A handwritten signature in black ink that reads "Tyler Cook".

Tyler Cook
Surface Water Permits Branch
Division of Water

From Liam Niemeyer of WKMS Is asking:

- The city of Marion is testing water from the nearby Lucille Mine to see if it's a short-term water supply option. Kentucky Division of Water Director Carey Johnson at a Marion City Council meeting on July 14 said testing from the Lucille Mine showed the water "exceeds the maximum contaminant level" for fluoride, iron and manganese. He said the city's current water treatment won't remove the contaminants.

- 1. What are the maximum contaminant levels for fluoride, iron and manganese in drinking water?*

The US EPA has established a maximum contaminant level (MCL) for fluoride of 4 ppm (or mg/L) and a secondary MCL of 2 ppm.

Manganese and iron are secondary contaminants with secondary standard of 0.05 mg/L and 0.3 mg/L, respectively.

Fluoride has a primary drinking water standard and a secondary standard. Manganese and iron have secondary standards. The National Primary Drinking Water Regulations (NPDWR) are legally enforceable primary standards and treatment techniques that apply to public water systems. Primary standards and treatment techniques protect public health by limiting the levels of contaminants in drinking water. National Secondary Drinking Water Regulations (NSDWRs) or secondary standards are non-enforceable guidelines regulating contaminants that may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor, or color) in drinking water. Regulations indicate that if a secondary maximum contaminant is exceeded by a supplier of water the cabinet may direct that supplier to modify the treatment procedure or locate a more suitable source of water ([401 KAR 8:250](#))

Contaminants listed are not the only contaminants of concern when a new source water is assessed. The Division of Water reviews and approves new source waters to ensure treatability of the water based on the plant's design. Data is also reviewed for water quality and the compatibility of treated water. The National Primary Drinking Water Regulations can be found [here](#).

- 2. What complications can these contaminants cause in drinking water?*

The US EPA has established a maximum contaminant level (MCL) for fluoride of 4 ppm (or mg/L) as long-term exposure to elevated levels of fluoride, may lead to bone disease or dental disease, and a secondary MCL of 2 ppm based on tooth discoloration and pitting.

Iron and manganese can give water an unpleasant taste, odor and color. Iron causes reddish-brown stains on laundry, porcelain, dishes, utensils, glassware, sinks, fixtures and concrete. Manganese causes brownish-black stains on the same materials.

The USEPA issued a health advisory in 2004 for manganese; that health advisory level is 0.3 mg/L. As with all health advisories, this is not a regulatory enforceable number, but the advisory does recommend reducing manganese concentrations to or below 0.050 mg/L, EPA's Secondary Maximum Contaminant Level (SMCL) for manganese. Information on the drinking water health advisory for manganese can be found [here](#).

3. *If the city's water treatment won't remove the contaminants, what kind of technology would it take to remove it?*

Approval and determination of treatment for a new source water requires source water analysis. This typically includes a minimum of one year's worth of data for a new source (see table 1 below). Additional cryptosporidium, *E. coli*, and turbidity monitoring maybe necessary for the Long Term 2 Enhanced Surface Water Treatment Rule compliance determination. [401 KAR 8:100](#)

Table 1.

Contaminants	Frequency
Cryptosporidium, <i>E. coli</i> , turbidity	Monthly*
Total Organic Carbon	Monthly
Alkalinity, pH, Temperature	Monthly
Organic chemicals	Once/Quarterly**
Inorganic chemicals	Quarterly
Secondary Contaminants	Quarterly
Radionuclides	Once

* Schedule approved by the Drinking Water Branch.

** Sample once - if no detects on initial sample. If there are detections, sample quarterly.

The complete list and more information can be found [here](#).

Generally, the US EPA has identified the following treatment processes as Best Available Technologies (BATs) for control of fluoride in drinking water: reverse osmosis and activated alumina. Other treatment technologies available for fluoride removal include ion exchange, lime softening, electro dialysis, and adsorption with various types of media including activated carbon, bone chars and clays.

Treatment for iron and manganese includes a process known as oxidation. Oxidation involves the precipitative process of converting the soluble forms of iron and manganese into their insoluble forms for removal by sedimentation and filtration. Most commonly, oxidation is achieved by injecting a chemical oxidant like permanganate into the treatment process.

Changes to chemical treatments are approved by the Division of Water ([401 KAR 8:100](#); [401 KAR 8:020](#)).

The Department for Public Health also has requirements for fluoride that would need to be taken into consideration for a determination of approval.

Pam Enoch

From: Adam Ledford
Sent: Friday, July 29, 2022 10:26 AM
To: Pam Enoch
Subject: Fwd: Marion KY | Lucille Mine Drawdown
Attachments: Est_Q10030_Marion KY Lucille Mine Well Drawdown Test 7-26-22.pdf

Get [Outlook for iOS](#)

From: Sarah Towle <stowle@candcpumps.com>
Sent: Tuesday, July 26, 2022 11:49:08 AM
To: Adam Ledford <aledford@marionky.gov>
Cc: Sales Team <steam@candcpumps.com>
Subject: Marion KY | Lucille Mine Drawdown

Hi Adam,

Please see the attached quote to complete a drawdown test at the Lucille Mine Well. The quote includes setting a pump at well, AKGWA 0007-0081, which is 234' deep with a 12" steel casing. Level transducers will be utilized in both wells to monitor water level during pump out. I am proposing a step drawdown test- this involves pumping at 400 GPM until water level holds for approximately 15 minutes, then increasing flow rate to 450 GPM until water level holds, then finally 500 GPM until water level holds. This is just a starting point and may be modified in the field depending on water levels at various pump out rates. The quote includes labor/crane for one day. If you would like to continue to pump out the well for up to a week, there would be an additional labor/crane charge for another trip (multiply labor and crane line items by 2) to pull the pump. The data recorder I have included allows for remote monitoring of the level transducers and flow meter via a website so someone wouldn't need to stay with the pump 24/7 during pump out.

I received your email with the permit extension. We can grab a discharge sample at the beginning and end of the pump out for the City to send to Pace to be analyzed. I also have a field colorimeter I can use to monitor iron, manganese, fluoride and pH. The field testing wouldn't be approved for use by Div. of Water, but would give us an idea of water quality.

We could mobilize as quickly as one week, but two would be preferable. Please call me with any questions.

618.997.2311 | Office
618.997.2312 | Fax



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C and C Pumps & Supply, Inc
 13085 Route 37
 Marion IL 62959
 Phone # 618-997-2311
 Fax # 618-997-2312



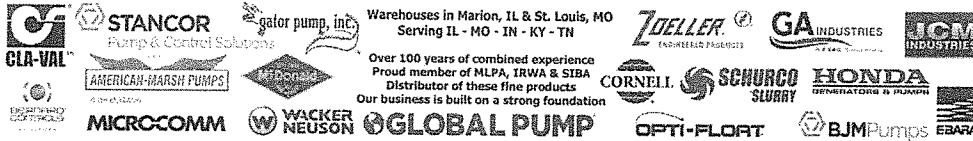
Quote Estimate

Date	Quote #
7/26/2022	Q10030

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Name / Address
City of Marion 217 South Main Street Marion, Kentucky 42064

Ship To
City of Marion 217 South Main Street Marion, KY 42064
Attn:



Fuel Surcharges: Due to rising fuel costs this is a necessary addition to your order. We hope this will be temporary.

*Visit our website : candcpumps.com
 Or schedule a time to see one of our fully stocked warehouses in Marion, IL and St. Louis, MO*

P.O. No.	Sales Representative	Terms	FOB
	Sarah Towle 618-491-9067	Net 30	Factory

Description	Qty	U/M	Rate	Total
LUCILLE MINE WELL				
20HP Submersible Turbine Pump with 250' of Cable	1.00	ea	4,721.00	4,721.00
4" x 20' Steel Riser, Victaulic	11.00	ea	55.50	610.50
4" Victaulic Clamps	20.00	ea	11.10	222.00
4" Victaulic 90 Degree Elbow	1.00	ea	66.00	66.00
4" x 5' Steel Riser, Victaulic	1.00	ea	22.00	22.00
Variable Frequency Drive (VFD), Toshiba + Long Filter Lead	1.00	ea	1,538.00	1,538.00
Generator 60-100KW	1.00	ea	1,789.00	1,789.00
Flow Meter- loaned by Hamilton County Water District	1.00	ea	0.00	0.00
Flange Adapter, (Bauer to Layflat)	1.00	ea	9.00	9.00
4" Butterfly Valve (On Discharge)	1.00	ea	31.00	31.00
4" Layflat Discharge Hose, 50' Rolls w/Fittings	8.00	ea	20.00	160.00
Level Transducers w/250' Cable	2.00	ea	1,485.00	2,970.00
Copilot Data Recorder	1.00	ea	996.00	996.00
Data Collection & Drawdown Report	1.00	ea	760.00	760.00

Standard Labor Rates Apply Mon thru Fri - 7am to 4pm
 After Std Hours and Saturday Rate = 1.5X Standard Rate
 Sunday Rate = 2X Standard Rate
 Holiday Rate = 3X Standard Rate

Subtotal
Sales Tax (6.0%)
Total

Accepted By _____ Page 1 Date _____ PO# _____

C and C Pumps & Supply, Inc
 13085 Route 37
 Marion IL 62959
 Phone # 618-997-2311
 Fax # 618-997-2312



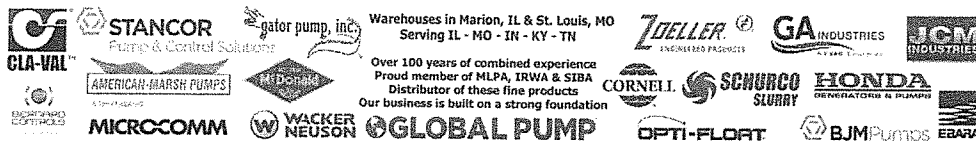
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Quote Estimate

Date	Quote #
7/26/2022	Q10030

Name / Address
City of Marion 217 South Main Street Marion, Kentucky 42064

Ship To
City of Marion 217 South Main Street Marion, KY 42064
Attn:



Fuel Surcharges: Due to rising fuel costs this is a necessary addition to your order. We hope this will be temporary.

Visit our website : candcpumps.com Or schedule a time to see one of our fully stocked warehouses in Marion, IL and St. Louis, MO				
P.O. No.	Sales Representative	Terms	FOB	
	Sarah Towle 618-491-9067	Net 30	Factory	
Description	Qty	U/M	Rate	Total
Labor	1.00	ea	4,940.00	4,940.00
Crane	1.00	ea	3,692.00	3,692.00
Freight	1.00		8,000.00	8,000.00

Standard Labor Rates Apply Mon thru Fri - 7am to 4pm
 After Std Hours and Saturday Rate = 1.5X Standard Rate
 Sunday Rate = 2X Standard Rate
 Holiday Rate = 3X Standard Rate

Subtotal	\$30,526.50
Sales Tax (6.0%)	\$0.00
Total	\$30,526.50

Accepted By _____ Date _____ PO# _____



McCoy & McCoy
LABORATORIES, Inc.

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859.299.7775 606.432.3104

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SAMPLE SUMMARY

Lab ID	Client Sample ID/Alias	Matrix	Date Collected	Date Received	Sampled By
3061106-01	Source Water Well/	Drinking Water	06/05/2013 09:05	06/05/2013 15:38	Brian Thomas

Work Order Comments:

Additional Documentation:

This report includes copies of the subcontractor analysis reports for Asbestos and Radionuclides. Asbestos analysis was performed by McCall & Spero and Radionuclides by Benchmark Analytics, Inc. Both are certified drinking water laboratories in Kentucky.



ANALYTICAL RESULTS

Lab Sample ID: 3061106-01
Description: Source Water Well

Sample Collection Date Time: 06/05/2013 09:05
Sample Received Date Time: 06/05/2013 15:38

Matrix: Drinking Water

Discharge/Site No:

Regulatory ID: KY0280267

Volatile Organic Compounds

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Benzene	ND	u	mg/L	0.0005		EPA 524.2	06/11/2013 14:58	06/12/2013 03:24	JEB
Carbon tetrachloride	ND	u	mg/L	0.0005		EPA 524.2	06/11/2013 14:58	06/12/2013 03:24	JEB
Total Xylenes	ND	u	mg/L	0.0005		EPA 524.2	06/11/2013 14:58	06/12/2013 03:24	JEB
Chlorobenzene	ND	u	mg/L	0.0005		EPA 524.2	06/11/2013 14:58	06/12/2013 03:24	JEB
Methylene Chloride	ND	u	mg/L	0.0005		EPA 524.2	06/11/2013 14:58	06/12/2013 03:24	JEB
Methyl tert-Butyl Ether	ND	u	mg/L	0.0005		EPA 524.2	06/11/2013 14:58	06/12/2013 03:24	JEB
o-Dichlorobenzene	ND	u	mg/L	0.0005		EPA 524.2	06/11/2013 14:58	06/12/2013 03:24	JEB
Tetrachloroethylene	ND	u	mg/L	0.0005		EPA 524.2	06/11/2013 14:58	06/12/2013 03:24	JEB
cis-1,2-Dichloroethylene	ND	u	mg/L	0.0005		EPA 524.2	06/11/2013 14:58	06/12/2013 03:24	JEB
p-Dichlorobenzene	ND	u	mg/L	0.0005		EPA 524.2	06/11/2013 14:58	06/12/2013 03:24	JEB
trans-1,2-Dichloroethylene	ND	u	mg/L	0.0005		EPA 524.2	06/11/2013 14:58	06/12/2013 03:24	JEB
1,1-Dichloroethylene	ND	u	mg/L	0.0005		EPA 524.2	06/11/2013 14:58	06/12/2013 03:24	JEB
Trichloroethylene	ND	u	mg/L	0.0005		EPA 524.2	06/11/2013 14:58	06/12/2013 03:24	JEB
1,2-Dichloroethane	ND	u	mg/L	0.0005		EPA 524.2	06/11/2013 14:58	06/12/2013 03:24	JEB
1,2-Dichloropropane	ND	u	mg/L	0.0005		EPA 524.2	06/11/2013 14:58	06/12/2013 03:24	JEB
Ethylbenzene	ND	u	mg/L	0.0005		EPA 524.2	06/11/2013 14:58	06/12/2013 03:24	JEB
Styrene	ND	u	mg/L	0.0005		EPA 524.2	06/11/2013 14:58	06/12/2013 03:24	JEB
Toluene	ND	u	mg/L	0.0005		EPA 524.2	06/11/2013 14:58	06/12/2013 03:24	JEB
1,2,4-Trichlorobenzene	ND	u	mg/L	0.0005		EPA 524.2	06/11/2013 14:58	06/12/2013 03:24	JEB
1,1,1-Trichloroethane	ND	u	mg/L	0.0005		EPA 524.2	06/11/2013 14:58	06/12/2013 03:24	JEB
1,1,2-Trichloroethane	ND	u	mg/L	0.0005		EPA 524.2	06/11/2013 14:58	06/12/2013 03:24	JEB
Vinyl chloride	ND	u	mg/L	0.0005		EPA 524.2	06/11/2013 14:58	06/12/2013 03:24	JEB

Surrogate: Bromofluorobenzene			86.5 %	70-130		06/11/2013 14:58	06/12/2013 03:24	JEB	EPA 524.2
Surrogate: Toluene-d8			95.2 %	70-130		06/11/2013 14:58	06/12/2013 03:24	JEB	EPA 524.2
Total Trihalomethanes	ND	u	mg/L	0.001		EPA 524.2	06/07/2013 08:46	06/07/2013 17:53	JEB
Bromodichloromethane	ND	u	mg/L	0.001		EPA 524.2	06/07/2013 08:46	06/07/2013 17:53	JEB
Bromoform	ND	u	mg/L	0.001		EPA 524.2	06/07/2013 08:46	06/07/2013 17:53	JEB
Chloroform	ND	u	mg/L	0.001		EPA 524.2	06/07/2013 08:46	06/07/2013 17:53	JEB
Dibromochloromethane	ND	u	mg/L	0.001		EPA 524.2	06/07/2013 08:46	06/07/2013 17:53	JEB

Gas Chromatography

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
1,2-Dibromoethane	ND	u	mg/L	0.00001		EPA 504.1	06/12/2013 12:45	06/13/2013 10:13	JDR
1,2-Dibromo-3-chloropropane	ND	u	mg/L	0.00001		EPA 504.1	06/12/2013 12:45	06/13/2013 10:13	JDR
Butachlor	ND	u	mg/L	0.0002		EPA 507	06/06/2013 15:00	06/10/2013 16:57	JDR
Simazine	ND	u	mg/L	0.0002		EPA 507	06/06/2013 15:00	06/10/2013 16:57	JDR
Atrazine	ND	u	mg/L	0.0002		EPA 507	06/06/2013 15:00	06/10/2013 16:57	JDR
Metribuzin	ND	u	mg/L	0.0002		EPA 507	06/06/2013 15:00	06/10/2013 16:57	JDR
Alachlor	ND	u	mg/L	0.0004		EPA 507	06/06/2013 15:00	06/10/2013 16:57	JDR
Metolachlor	ND	u	mg/L	0.0002		EPA 507	06/06/2013 15:00	06/10/2013 16:57	JDR

Surrogate: 1,3-Dimethyl-2-nitrobenzene			82.0 %	70-130		06/06/2013 15:00	06/10/2013 16:57	JDR	EPA 507
Aroclor 1016	ND	u	mg/L	0.00006		EPA 508	06/06/2013 15:00	06/10/2013 16:34	JDR



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Gas Chromatography

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Aroclor 1260	ND	u	mg/L	0.00006		EPA 508	06/06/2013 15:00	06/10/2013 16:34	JDR
Aroclor 1221	ND	u	mg/L	0.0001		EPA 508	06/06/2013 15:00	06/10/2013 16:34	JDR
Aroclor 1232	ND	u	mg/L	0.00006		EPA 508	06/06/2013 15:00	06/10/2013 16:34	JDR
Aroclor 1242	ND	u	mg/L	0.00006		EPA 508	06/06/2013 15:00	06/10/2013 16:34	JDR
Aroclor 1248	ND	u	mg/L	0.00006		EPA 508	06/06/2013 15:00	06/10/2013 16:34	JDR
Aroclor 1254	ND	u	mg/L	0.00006		EPA 508	06/06/2013 15:00	06/10/2013 16:34	JDR
Gamma-BHC	ND	u	mg/L	0.00001		EPA 508	06/06/2013 15:00	06/10/2013 19:33	JDR
Heptachlor	ND	u	mg/L	0.00001		EPA 508	06/06/2013 15:00	06/10/2013 19:33	JDR
Endrin	ND	u	mg/L	0.00002		EPA 508	06/06/2013 15:00	06/10/2013 19:33	JDR
Methoxychlor	ND	u	mg/L	0.0001		EPA 508	06/06/2013 15:00	06/10/2013 19:33	JDR
Heptachlor Epoxide	ND	u	mg/L	0.00001		EPA 508	06/06/2013 15:00	06/10/2013 19:33	JDR
Gamma-Chlordane	ND	u	mg/L	0.00005		EPA 508	06/06/2013 15:00	06/10/2013 19:33	JDR
Alpha-Chlordane	ND	u	mg/L	0.00005		EPA 508	06/06/2013 15:00	06/10/2013 19:33	JDR
Chlordane (tech)	ND	u	mg/L	0.0004		EPA 508	06/06/2013 15:00	06/10/2013 19:33	JDR
Toxaphene	ND	u	mg/L	0.002		EPA 508	06/06/2013 15:00	06/10/2013 19:33	JDR
Hexachlorobenzene	ND	u	mg/L	0.0001		EPA 508	06/06/2013 15:00	06/10/2013 19:33	JDR
Hexachlorocyclopentadiene	ND	u	mg/L	0.0001		EPA 508	06/06/2013 15:00	06/10/2013 19:33	JDR

Surrogate: DCBP 81.1 % 70-130 06/06/2013 15:00 06/10/2013 19:33 JDR EPA 508

Surrogate: TCMX 81.4 % 70-130 06/06/2013 15:00 06/10/2013 19:33 JDR EPA 508

Dalapon	ND	u	mg/L	0.001		EPA 515.1	06/06/2013 14:00	06/13/2013 19:43	JDR
Dicamba	ND	u	mg/L	0.001		EPA 515.1	06/06/2013 14:00	06/13/2013 19:43	JDR
2,4-D	ND	u	mg/L	0.0002		EPA 515.1	06/06/2013 14:00	06/13/2013 19:43	JDR
Dinoseb	ND	u	mg/L	0.0003		EPA 515.1	06/06/2013 14:00	06/13/2013 19:43	JDR
Picloram	ND	u	mg/L	0.0002		EPA 515.1	06/06/2013 14:00	06/13/2013 19:43	JDR
Pentachlorophenol	ND	u	mg/L	0.00004		EPA 515.1	06/06/2013 14:00	06/13/2013 19:43	JDR
2,4,5-TP (Silvex)	ND	u	mg/L	0.00008		EPA 515.1	06/06/2013 14:00	06/13/2013 19:43	JDR
Total HAA5	ND	u	mg/L	0.001		EPA 552.2	06/10/2013 09:52	06/11/2013 03:29	JDR
Monochloroacetic Acid	ND	u	mg/L	0.001		EPA 552.2	06/10/2013 09:52	06/11/2013 03:29	JDR
Bromoacetic Acid	ND	u	mg/L	0.001		EPA 552.2	06/10/2013 09:52	06/11/2013 03:29	JDR
Dichloroacetic Acid	ND	u	mg/L	0.001		EPA 552.2	06/10/2013 09:52	06/11/2013 03:29	JDR
Dibromoacetic Acid	ND	u	mg/L	0.001		EPA 552.2	06/10/2013 09:52	06/11/2013 03:29	JDR
Trichloroacetic Acid	ND	u	mg/L	0.001		EPA 552.2	06/10/2013 09:52	06/11/2013 03:29	JDR

Surrogate: 2,3-Dibromopropionic aci 92.2 % 70-130 06/10/2013 09:52 06/11/2013 03:29 JDR EPA 552.2

Metals by SW846 6000 Series Methods

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Sulfur	13.8	B1, B	mg/L	0.01	0.01	SW846 6010B	06/19/2013 11:41	06/19/2013 16:12	JCD

Metals by EPA 200 Series Methods

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Aluminum	0.12		mg/L	0.02		EPA 200.8	06/10/2013 10:52	06/11/2013 13:51	MWF
Antimony	ND	u	mg/L	0.004		EPA 200.8	06/10/2013 10:52	06/12/2013 18:17	MWF
Arsenic	0.0006		mg/L	0.0005		EPA 200.8	06/10/2013 10:52	06/11/2013 13:51	MWF
Barium	0.440	M3	mg/L	0.002		EPA 200.8	06/10/2013 10:52	06/11/2013 13:51	MWF
Beryllium	ND	u	mg/L	0.0020		EPA 200.8	06/10/2013 10:52	06/12/2013 18:17	MWF
Cadmium	0.0007		mg/L	0.0005		EPA 200.8	06/10/2013 10:52	06/11/2013 13:51	MWF
Calcium	133		mg/L	0.04	0.01	EPA 200.7	06/10/2013 10:48	06/12/2013 14:31	JCD
Chromium	ND	u	mg/L	0.002		EPA 200.8	06/10/2013 10:52	06/11/2013 13:51	MWF
Copper	ND	u	mg/L	0.001		EPA 200.8	06/10/2013 10:52	06/12/2013 18:17	MWF
Iron	1.08		mg/L	0.02		EPA 200.7	06/10/2013 10:48	06/11/2013 12:02	JCD



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Metals by EPA 200 Series Methods

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Manganese	0.354		mg/L	0.002		EPA 200.8	06/10/2013 10:52	06/11/2013 13:51	MWF
Mercury	0.0002	M2, U	mg/L	0.0002		EPA 200.8	06/10/2013 10:52	06/11/2013 13:51	MWF
Nickel	ND	u	mg/L	0.0020		EPA 200.8	06/10/2013 10:52	06/11/2013 13:51	MWF
Calcium Hardness Calc Analyte	332		mg/L	0.11	0.04	SM2340B	06/10/2013 10:48	06/12/2013 14:31	JCD
Selenium	0.002	M2	mg/L	0.001		EPA 200.8	06/10/2013 10:52	06/11/2013 13:51	MWF
Silver	ND	M2, U	mg/L	0.0020		EPA 200.8	06/10/2013 10:52	06/12/2013 18:17	MWF
Sodium	14.8	M3	mg/L	2.00	0.60	EPA 200.7	06/10/2013 10:48	06/10/2013 23:26	JCD
Thallium	ND	u	mg/L	0.0005		EPA 200.8	06/10/2013 10:52	06/11/2013 13:51	MWF
Zinc	0.144	M3	mg/L	0.010		EPA 200.8	06/10/2013 10:52	06/12/2013 18:17	MWF

Conventional Chemistry Analyses_01

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Bicarbonate Alkalinity as CaCO3	348		mg/L	4	4	2320 B-1997	06/11/2013 10:19	06/11/2013 10:19	DDM
Carbonate Alkalinity as CaCO3	ND	u	mg/L	4	4	2320 B-1997	06/11/2013 10:19	06/11/2013 10:19	DDM
Phenolphthalein Alkalinity	ND	u	mg/L	4	4	2320 B-1997	06/11/2013 10:19	06/11/2013 10:19	DDM
Total Alkalinity	348		mg/L	4	4	2320 B-1997	06/11/2013 10:19	06/11/2013 10:19	DDM
Chloride	5.4		mg/L	0.1	0.1	EPA 300.0	06/07/2013 12:36	06/07/2013 12:36	DMH
Color-Visual PCU	103	D	PCU	10		2120 B-2001	06/05/2013 16:32	06/05/2013 16:32	TLB
Cyanide (total)	ND	u	mg/L	0.01	0.01	4500-CN E-1999	06/07/2013 11:30	06/07/2013 16:22	KET
Fluoride	5.3		mg/L	0.2	0.2	EPA 300.0	06/07/2013 12:36	06/07/2013 12:36	DMH
Hardness as CaCO3	410		mg/L	1	1	2340 C-1997	06/13/2013 09:28	06/13/2013 13:30	JTL
Nitrate as N	ND	u	mg/L	0.1	0.1	EPA 300.0	06/06/2013 03:01	06/06/2013 03:01	DMH
Nitrite as N	ND	u	mg/L	0.1	0.1	EPA 300.0	06/06/2013 03:01	06/06/2013 03:01	DMH
Odor	4		T.O.N.	1		2150-B 1997	06/05/2013 16:59	06/05/2013 17:12	JTL
Sulfate	43		mg/L	1	0.2	EPA 300.0	06/07/2013 12:36	06/07/2013 12:36	DMH
Surfactants	0.1		mg/L	0.1		5540 C-2000	06/07/2013 08:35	06/07/2013 16:34	TAC
Total Dissolved Solids	452		mg/L	10	10	2540 C-1997	06/10/2013 17:16	06/10/2013 17:16	DDM
Turbidity (Lab)	20.2	D	NTU	8.00	0.50	EPA 180.1	06/05/2013 16:02	06/05/2013 16:02	TLB

Microbiological Analyses_01

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
E. Coli	Present			1.00		SM9223 Colilert 24	06/05/2013 16:50	06/06/2013 17:03	BDD
Total Coliform	Present			1.00		SM9223 Colilert 24	06/05/2013 16:50	06/06/2013 17:03	BDD

Subcontracted Analyses

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Asbestos	0.00					EPA 100.2	06/07/2013 09:00	06/07/2013 09:00	MDD
Gross Alpha	3.8		pCi/L			EPA 900.0	06/14/2013 15:37	06/14/2013 15:37	MDD
Radium-228	1.38		pCi/L			EPA 903.0	06/18/2013 15:37	06/18/2013 15:37	MDD

Semi Volatile Organic Compounds

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Bis(2-ethylhexyl)adipate	ND	u	mg/L	0.0001		EPA 525.2	06/12/2013 13:00	06/14/2013 17:27	RCW
Bis(2-ethylhexyl)phthalate	ND	u	mg/L	0.001		EPA 525.2	06/12/2013 13:00	06/14/2013 17:27	RCW

Surrogate: Perylene-d12 94.0 % 70-130 06/12/2013 13:00 06/14/2013 17:27 RCW EPA 525.2
 Surrogate: Triphenyl Phosphate 134 % 70-130 06/12/2013 13:00 06/14/2013 17:27 RCW EPA 525.2



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Semi Volatile Organic Compounds

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Surrogate: 1,3-Dimethyl-2-nitrobenz			92.8 %	70-130		06/12/2013 13:00	06/14/2013 17:27	RCW EPA 525.2	
Endothall	ND	u	mg/L	0.005		EPA 548.1	06/10/2013 14:00	06/13/2013 12:59	RCW

High Performance Liquid Chromatography (HPLC)

Analyte	Result	Flag	Units	MRL	MDL	Method	Prepared	Analyzed	Analyst
Aldicarb Sulfoxide	ND	u	mg/L	0.0005		EPA 531.1	06/17/2013 09:39	06/17/2013 22:39	RND
Aldicarb Sulfone	ND	u	mg/L	0.0005		EPA 531.1	06/17/2013 09:39	06/17/2013 22:39	RND
Oxamyl	ND	u	mg/L	0.0005		EPA 531.1	06/17/2013 09:39	06/17/2013 22:39	RND
Aldicarb	ND	u	mg/L	0.0005		EPA 531.1	06/17/2013 09:39	06/17/2013 22:39	RND
Carbofuran	ND	u	mg/L	0.0005		EPA 531.1	06/17/2013 09:39	06/17/2013 22:39	RND
Glyphosate	ND	u	mg/L	0.005		EPA 547	06/10/2013 10:34	06/13/2013 18:58	RND
Diquat	ND	u	mg/L	0.0007		EPA 549.2	06/06/2013 10:00	06/10/2013 13:36	RND
Acenaphthene	ND	u	mg/L	0.00005		EPA 550.1	06/12/2013 08:30	06/19/2013 18:19	RND
Acenaphthylene	ND	u	mg/L	0.00002		EPA 550.1	06/12/2013 08:30	06/19/2013 18:19	RND
p-Terphenyl-d14	1.00		mg/L			EPA 550.1	06/12/2013 08:30	06/19/2013 18:19	RND
Anthracene	ND	u	mg/L	0.00005		EPA 550.1	06/12/2013 08:30	06/19/2013 18:19	RND
Benzo(a)anthracene	ND	u	mg/L	0.00002		EPA 550.1	06/12/2013 08:30	06/19/2013 18:19	RND
Benzo(b)fluoranthene	ND	u	mg/L	0.00005		EPA 550.1	06/12/2013 08:30	06/19/2013 18:19	RND
Benzo(k)fluoranthene	ND	u	mg/L	0.00002		EPA 550.1	06/12/2013 08:30	06/19/2013 18:19	RND
Benzo(g,h,i)perylene	ND	u	mg/L	0.00005		EPA 550.1	06/12/2013 08:30	06/19/2013 18:19	RND
Benzo(a)pyrene	ND	u	mg/L	0.00002		EPA 550.1	06/12/2013 08:30	06/19/2013 18:19	RND
Chrysene	ND	u	mg/L	0.00002		EPA 550.1	06/12/2013 08:30	06/19/2013 18:19	RND
Indeno(1,2,3-cd)pyrene	ND	u	mg/L	0.00005		EPA 550.1	06/12/2013 08:30	06/19/2013 18:19	RND
Dibenzo(a,h)anthracene	ND	u	mg/L	0.00002		EPA 550.1	06/12/2013 08:30	06/19/2013 18:19	RND
Fluoranthene	ND	u	mg/L	0.00002		EPA 550.1	06/12/2013 08:30	06/19/2013 18:19	RND
Fluorene	ND	u	mg/L	0.00005		EPA 550.1	06/12/2013 08:30	06/19/2013 18:19	RND
Naphthalene	ND	u	mg/L	0.00005		EPA 550.1	06/12/2013 08:30	06/19/2013 18:19	RND
Phenanthrene	ND	u	mg/L	0.00002		EPA 550.1	06/12/2013 08:30	06/19/2013 18:19	RND
Pyrene	ND	u	mg/L	0.00002		EPA 550.1	06/12/2013 08:30	06/19/2013 18:19	RND

Surrogate: Pyrene-d10 123 % 78.9-126 06/12/2013 08:30 06/19/2013 18:19 RND EPA 550.1



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Notes for work order 3061106

- Samples collected by MMLI personnel are done so in accordance with procedures set forth in MMLI field services SOPs.
- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identification based on the presumptive evidence of the mass spectra.

- Y2 MS/MSD RPD exceeded the method control limit. Recovery met acceptance criteria.
- V4 CCV recovery was below method acceptance limits. Sample not reanalyzed due to insufficient sample.
- U Target analyte was analyzed for, but was below detection limit (the value associated with the qualifier is the laboratory method detection limit in our LIMS system).
- T1 Sample received with improper chemical preservation.
- S2 Surrogate recovery was below method acceptance limits.
- S1 Surrogate recovery was above method acceptance limits.
- M3 The accuracy of the spike recovery value is reduced since the analyte concentration in the sample is disproportionate to spike level. The method control sample recovery was acceptable.
- M2 Matrix spike recovery was low; the method control sample recovery was acceptable.
- M1 Matrix spike recovery was high; the method control sample recovery was acceptable.
- L2 The associated blank spike recovery was below method acceptance limits.
- L1 The associated blank spike recovery was above method acceptance limits.
- J Estimated value.
- D Results reported from dilution.
- B1 Target analyte detected in method blank at or above the method reporting limit. Concentration found in the sample was 10 times above the concentration found in the method blank.
- B Target analyte detected in method blank at or above the method reporting limit.

Standard Qualifiers/Acronyms

MDL	Method Detection Limit
MRL	Minimum Reporting Limit
ND	Not Detected
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
% Rec	Percent Recovery
RPD	Relative Percent Difference
>	Greater than permit limits
<	Less than permit limits

Analyses performed at the Madisonville KY location unless specified with the following location codes.

- 02 Pikeville, KY
- 03 Paducah, KY
- 04 Lexington, KY
- 05 Louisville, KY



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Certified Analyses included in this Report

Analyte	Certifications
2120 B-2001 in Water	
Color-Visual PCU	KY Drinking Water (00030)
2150-B 1997 in Water	
Odor	KY Drinking Water (00030)
2320 B-1997 in Water	
Total Alkalinity	KY Drinking Water (00030) VA NELAC (460210)
Bicarbonate Alkalinity as CaCO ₃	KY Drinking Water (00030) VA NELAC (460210)
Carbonate Alkalinity as CaCO ₃	KY Drinking Water (00030) VA NELAC (460210)
Phenolphthalein Alkalinity	KY Drinking Water (00030) VA NELAC (460210)
2340 C-1997 in Water	
Hardness as CaCO ₃	KY Drinking Water (00030) VA NELAC (460210)
2540 C-1997 in Water	
Total Dissolved Solids	KY Drinking Water (00030) VA NELAC (460210)
4500-CN E-1999 in Water	
Cyanide (total)	KY Drinking Water (00030) VA NELAC (460210)
4500-H+ B-2000 in Water	
pH (Field)	KY Drinking Water (00030)
5540 C-2000 in Water	
Surfactants	KY Drinking Water (00030) VA NELAC (460210)
EPA 180.1 in Water	
Turbidity (Lab)	KY Drinking Water (00030) VA NELAC (460210)
EPA 200.7 in Water	
Calcium	KY Drinking Water (00030) VA NELAC (460210)
Iron	KY Drinking Water (00030) VA NELAC (460210)
Sodium	KY Drinking Water (00030) VA NELAC (460210)
EPA 200.8 in Water	
Aluminum	KY Drinking Water (00030) VA NELAC (460210)
Antimony	KY Drinking Water (00030) VA NELAC (460210)
Arsenic	KY Drinking Water (00030) VA NELAC (460210)
Barium	KY Drinking Water (00030) VA NELAC (460210)
Beryllium	KY Drinking Water (00030) VA NELAC (460210)
Cadmium	KY Drinking Water (00030) VA NELAC (460210)
Chromium	KY Drinking Water (00030) VA NELAC (460210)
Copper	KY Drinking Water (00030) VA NELAC (460210)
Manganese	KY Drinking Water (00030) VA NELAC (460210)
Mercury	KY Drinking Water (00030) VA NELAC (460210)
Nickel	KY Drinking Water (00030) VA NELAC (460210)
Selenium	KY Drinking Water (00030) VA NELAC (460210)
Silver	KY Drinking Water (00030) VA NELAC (460210)
Thallium	KY Drinking Water (00030) VA NELAC (460210)
Zinc	KY Drinking Water (00030) VA NELAC (460210)
EPA 300.0 in Water	
Chloride	KY Drinking Water (00030) VA NELAC (460210)



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Fluoride	KY Drinking Water (00030) VA NELAC (460210)
Nitrate as N	KY Drinking Water (00030) VA NELAC (460210)
Nitrite as N	KY Drinking Water (00030) VA NELAC (460210)
Sulfate	KY Drinking Water (00030) VA NELAC (460210)
EPA 504.1 in Water	
1,2-Dibromoethane	KY Drinking Water (00030) VA NELAC (460210)
1,2-Dibromo-3-chloropropane	KY Drinking Water (00030) VA NELAC (460210)
EPA 507 in Water	
Simazine	KY Drinking Water (00030) VA NELAC (460210)
Atrazine	KY Drinking Water (00030) VA NELAC (460210)
Alachlor	KY Drinking Water (00030) VA NELAC (460210)
EPA 508 in Water	
Gamma-BHC	KY Drinking Water (00030) VA NELAC (460210)
Gamma-BHC [2C]	KY Drinking Water (00030) VA NELAC (460210)
Heptachlor	KY Drinking Water (00030) VA NELAC (460210)
Heptachlor [2C]	KY Drinking Water (00030) VA NELAC (460210)
Endrin	KY Drinking Water (00030) VA NELAC (460210)
Endrin [2C]	KY Drinking Water (00030) VA NELAC (460210)
Methoxychlor	KY Drinking Water (00030) VA NELAC (460210)
Methoxychlor [2C]	KY Drinking Water (00030) VA NELAC (460210)
Heptachlor Epoxide	KY Drinking Water (00030)
Heptachlor Epoxide [2C]	KY Drinking Water (00030)
Chlordane (tech)	KY Drinking Water (00030) VA NELAC (460210)
Chlordane (tech) [2C]	VA NELAC (460210)
Toxaphene	KY Drinking Water (00030) VA NELAC (460210)
Toxaphene [2C]	KY Drinking Water (00030) VA NELAC (460210)
Hexachlorobenzene	KY Drinking Water (00030) VA NELAC (460210)
Hexachlorobenzene [2C]	KY Drinking Water (00030) VA NELAC (460210)
Hexachlorocyclopentadiene	KY Drinking Water (00030) VA NELAC (460210)
Hexachlorocyclopentadiene [2C]	KY Drinking Water (00030) VA NELAC (460210)
Aroclor 1016	KY Drinking Water (00030) VA NELAC (460210)
Aroclor 1260	KY Drinking Water (00030) VA NELAC (460210)
Aroclor 1221	KY Drinking Water (00030) VA NELAC (460210)
Aroclor 1232	KY Drinking Water (00030) VA NELAC (460210)
Aroclor 1242	KY Drinking Water (00030) VA NELAC (460210)
Aroclor 1248	KY Drinking Water (00030) VA NELAC (460210)
Aroclor 1254	KY Drinking Water (00030) VA NELAC (460210)
EPA 515.1 in Water	
Dalapon	KY Drinking Water (00030) VA NELAC (460210)
Dalapon [2C]	KY Drinking Water (00030) VA NELAC (460210)
2,4-D	KY Drinking Water (00030) VA NELAC (460210)
2,4-D [2C]	KY Drinking Water (00030) VA NELAC (460210)
Dinoseb	KY Drinking Water (00030) VA NELAC (460210)
Dinoseb [2C]	KY Drinking Water (00030) VA NELAC (460210)
Picloram	KY Drinking Water (00030) VA NELAC (460210)
Picloram [2C]	KY Drinking Water (00030) VA NELAC (460210)
Pentachlorophenol	KY Drinking Water (00030) VA NELAC (460210)



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Pentachlorophenol [2C]	KY Drinking Water (00030) VA NELAC (460210)
2,4,5-TP (Silvex)	KY Drinking Water (00030) VA NELAC (460210)
2,4,5-TP (Silvex) [2C]	KY Drinking Water (00030) VA NELAC (460210)

EPA 524.2 in Water

1,2-Dichlorobenzene-d4	KY Drinking Water (00030)
Total Trihalomethanes	KY Drinking Water (00030)
Benzene	KY Drinking Water (00030) VA NELAC (460210)
Bromodichloromethane	KY Drinking Water (00030)
Bromodichloromethane	VA NELAC (460210)
Bromoform	KY Drinking Water (00030)
Bromoform	VA NELAC (460210)
Carbon tetrachloride	KY Drinking Water (00030) VA NELAC (460210)
Total Xylenes	KY Drinking Water (00030) VA NELAC (460210)
Chlorobenzene	KY Drinking Water (00030) VA NELAC (460210)
Chloroform	KY Drinking Water (00030)
Chloroform	VA NELAC (460210)
m,p-Xylene	KY Drinking Water (00030) VA NELAC (460210)
Methylene Chloride	KY Drinking Water (00030) VA NELAC (460210)
o-Dichlorobenzene	KY Drinking Water (00030) VA NELAC (460210)
Tetrachloroethylene	KY Drinking Water (00030) VA NELAC (460210)
cis-1,2-Dichloroethylene	KY Drinking Water (00030) VA NELAC (460210)
p-Dichlorobenzene	KY Drinking Water (00030) VA NELAC (460210)
Bromofluorobenzene	KY Drinking Water (00030)
Dibromochloromethane	VA NELAC (460210)
Dibromochloromethane	KY Drinking Water (00030)
trans-1,2-Dichloroethylene	KY Drinking Water (00030)
1,1-Dichloroethylene	KY Drinking Water (00030)
Trichloroethylene	KY Drinking Water (00030) VA NELAC (460210)
1,2-Dichloroethane	KY Drinking Water (00030) VA NELAC (460210)
1,2-Dichloropropane	KY Drinking Water (00030) VA NELAC (460210)
Ethylbenzene	KY Drinking Water (00030) VA NELAC (460210)
Styrene	KY Drinking Water (00030) VA NELAC (460210)
Toluene	KY Drinking Water (00030) VA NELAC (460210)
1,2,4-Trichlorobenzene	KY Drinking Water (00030) VA NELAC (460210)
1,1,1-Trichloroethane	KY Drinking Water (00030) VA NELAC (460210)
1,1,2-Trichloroethane	KY Drinking Water (00030) VA NELAC (460210)
Vinyl chloride	KY Drinking Water (00030) VA NELAC (460210)
o-Xylene	KY Drinking Water (00030) VA NELAC (460210)
Toluene-d8	KY Drinking Water (00030)

EPA 525.2 in Water

Bis(2-ethylhexyl)adipate	KY Drinking Water (00030) VA Drinking Water VA NELAC (460210)
Bis(2-ethylhexyl)phthalate	KY Drinking Water (00030) VA Drinking Water VA NELAC (460210)

EPA 531.1 in Water

Aldicarb Sulfoxide	KY Drinking Water (00030)
Aldicarb Sulfone	KY Drinking Water (00030)
Oxamyl	KY Drinking Water (00030) VA NELAC (460210)
Aldicarb	KY Drinking Water (00030)



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Carbofuran	KY Drinking Water (00030) VA NELAC (460210)
EPA 547 in Water	
Glyphosate	KY Drinking Water (00030) VA NELAC (460210)
EPA 548.1 in Water	
Endothall	KY Drinking Water (00030) VA Drinking Water VA NELAC (460210)
EPA 549.2 in Water	
Diquat	KY Drinking Water (00030) VA NELAC (460210)
EPA 550.1 in Water	
Benzo(a)pyrene [2C]	KY Drinking Water (00030) VA NELAC (460210)
Benzo(a)pyrene	KY Drinking Water (00030) VA NELAC (460210)
EPA 552.2 in Water	
Total HAA5	KY Drinking Water (00030) VA NELAC (460210)
Total HAA5 [2C]	KY Drinking Water (00030) VA NELAC (460210)
Monochloroacetic Acid	KY Drinking Water (00030) VA NELAC (460210)
Monochloroacetic Acid [2C]	KY Drinking Water (00030) VA NELAC (460210)
Bromoacetic Acid	KY Drinking Water (00030) VA NELAC (460210)
Bromoacetic Acid [2C]	KY Drinking Water (00030) VA NELAC (460210)
Dichloroacetic Acid	KY Drinking Water (00030) VA NELAC (460210)
Dichloroacetic Acid [2C]	KY Drinking Water (00030) VA NELAC (460210)
Dibromoacetic Acid	KY Drinking Water (00030) VA NELAC (460210)
Dibromoacetic Acid [2C]	KY Drinking Water (00030) VA NELAC (460210)
Trichloroacetic Acid	KY Drinking Water (00030) VA NELAC (460210)
Trichloroacetic Acid [2C]	KY Drinking Water (00030) VA NELAC (460210)
SM2330B in Water	
Langelier Index	KY Drinking Water (00030)
SM9223 Colilert 24 in Water	
E. Coli	KY Microbiology Madisonville (00030)

Pam Enoch

From: Adam Ledford
Sent: Friday, July 29, 2022 10:26 AM
To: Pam Enoch
Subject: FW: Lucile Mine Sample - June 2013

-----Original Message-----

From: Alan Robinson <arobinson@eclipseengineers.net>
Sent: Thursday, July 28, 2022 8:49 AM
To: Adam Ledford <aledford@marionky.gov>
Cc: Jeff Black <cjblack40@yahoo.com>
Subject: Lucile Mine Sample - June 2013

Adam,

We have briefly looked at the June 2013 laboratory results from Lucile mine sample drawn in June 2013. Similar to the more recent sample taken at the nearby well, this water should not be pursued any further as a viable source of raw water for treatment.

This sample was positive for multiple metals and minerals such as:

Aluminum

Arsenic - trace amount

Barium

Iron - 1.1 ppm (not great but treatable) Manganese - 0.4 ppm (not great but treatable)

Hardness - 400+ ppm (very hard water, needs softening which is expensive)

Alkalinity - 348 (very high)

Turbidity - 20 NTU (very high for groundwater, should be <2 or so, doesn't make sense. Maybe being influenced heavily by surface water)

We didn't see pH, but it is likely 6.0 or lower, why is very low.

Fluoride is the worst item on the list - 5.3 ppm.

The MCL (maximum contaminant level) per the EPA is 2.0 ppm. Most raw waters are 0.0 to 0.4 or so. A dose of 20 ppm is considered lethal (I think).

Removing F requires ion exchange and/or softening which again is very expensive.

It is my opinion that although these results could improve by pumping out the old water from the mine, they are not likely to improve enough to make this an attractive source. We recommend that the city concentrate its resources on the exiting surface water sources and/or purchasing finished water.

Let me know if you have any questions.

Thanks,

--

Alan R. Robinson, PE
President
Eclipse Engineers, PLLC
113 West Mt. Vernon Street
Somerset, KY 42501
office: 606-451-0959
cell: 859-433-9585

CITY OF MARION, KENTUCKY
ORDINANCE NO. 22- _____

AN ORDINANCE OF THE CITY OF MARION, KENTUCKY AMENDING
ORDINANCE 19-08 "ALCOHOLIC BEVERAGE CONTROL ORDINANCE"

WHEREAS, the 2022 Regular Session of the General Assembly of the Commonwealth of Kentucky amended KRS 244.090 Persons whom licensees may not employ; partial exception such that individuals 18 years of age could be employed to sell or serve alcohol by a person holding a license provided the individual was supervised by an individual 20 years of age or older; and

WHEREAS, the City Council has reviewed this change and desires to allow for greater opportunity of employment for persons 18 years of age or older and the economic benefit therefrom;

NOW, THEREFORE, BE IT ORDAINED BY THE MARION CITY COUNCIL:

SECTION 1. That Ordinance 19-08 Alcoholic Beverage Control Ordinance Article VI. Conditions, Prohibitions and Restrictions, Paragraph K is amended as follows:

~~No licensee shall knowingly employ in connection with his or her business any person who:~~

~~(1) Has been convicted of any felony within the last two (2) years unless permitted by KRS 244.090(2);~~

~~(2) Has been twice convicted of any misdemeanor or offense directly or indirectly attributable to the use of intoxicating liquors within the last two (2) years unless permitted by KRS 244.090(2);~~

~~(3) Is under the age of twenty (20) years who will be serving alcoholic beverages or who will be having any contact whatsoever with the sale of alcohol as defined under state statute, unless said person is exempt or permitted by KRS 244.090 or KRS 244.087;~~

~~(4) Within two (2) years prior to the date of his or her employment, has had any city license under this chapter revoked for cause.~~

(1) A person holding any license shall not knowingly employ in connection with the licensed business any person who:

(a) Has been convicted of any felony within the last two (2) years;

(b) Has been twice convicted of any misdemeanor or offense directly or indirectly attributable to the use of alcoholic beverages within the last two (2) years;

(c) For the purposes of selling and serving alcoholic beverages, is under the age of twenty (20) years, unless the person employed is at least eighteen (18) years of age and under the supervision of a person twenty (20) years of age or older; or

(d) Within two (2) years prior to the date of the person's employment, has had any license issued under KRS Chapters 241 to 244 or under any other act or ordinance relating to the regulation of the manufacture, sale, or transportation of alcoholic beverages revoked for cause.

(2) The provisions of paragraphs (a) and (b) of subsection (1) of this section shall not apply if the employee's duties do not involve the sale, service, delivery, or traffic in alcoholic beverages at the licensed premises.

(3) A person under the age of twenty (20) years of age whose employment is authorized under subsection (1) of this section shall not have duties that include bartending or any activities listed in KRS 529.010(3).

(4) A person who is at least eighteen (18) years of age whose employment does not include the sale or service of alcoholic beverages may work in the warehouse of a wholesaler or distributor if there is an employee on the premises who is twenty-one (21) years of age or older.

(5) Violation of this section shall subject both employer and employee to penalties provided in this chapter and shall be cause for revocation of license.

SECTION 2. That all ordinances in conflict herewith are, to the extent of the conflict, hereby repealed, and that this ordinance shall become effective upon its passage by law pursuant to Kentucky Revised Statutes.

COUNCIL MEMBERS	YES	NO
Donald Arflack	_____	_____
Phyllis Sykes	_____	_____
Darrin Tabor	_____	_____
Michael Byford	_____	_____
Dwight Sherer	_____	_____
D'anna Sallins	_____	_____

It appearing that _____ Council Members voted for the adoption of this ordinance, and _____ voted against, with _____ abstaining, the Mayor declared the ordinance adopted.

INTRODUCED AND GIVEN FIRST READING: _____

GIVEN SECOND READING AND PASSED: _____

PUBLISHED IN THE CRITTENDEN PRESS: _____

JARED BYFORD, MAYOR

ATTEST: _____

PAM ENOCH, CITY CLERK