

Richard Healey (adpce.ad)

From: Zane Lewis <zlewis@mce.us.com>
Sent: Friday, December 15, 2023 4:54 PM
To: Richard Healey (adpce.ad)
Cc: Simon Wiley (swiley@eurekaspringsar.gov); Terry Long (eswwtp@yahoo.com); Nick Batker; Spencer Briggs; Uniqika Marshall (adpce.ad); William Cody (adpce.ad); Jason Bolenbaugh (adpce.ad)
Subject: City of Eureka Springs – NPDES Permit AR0021865; AFIN 08-00036; MCE Project# 23-2159 WWTP Emergency Response
Attachments: 23-2159 Eureka Springs WWTP Response to DEQ Comments 12 15 2023.pdf

Mr. Healey,

Good evening. Please see attached a new letter of additional responses to your letter dated October 11, 2023, concerning the Eureka Springs, AR WWTP. We will be assisting the city is responding to your inspection report next week as well. Don't hesitate to contact us if you have any questions or comments. Thank you.

Zane Lewis, P.E., LEED AP BD+C
Project Manager/Engineer



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December 15, 2023

Mr. Richard C. Healey, Enforcement Branch Manager
Division of Environmental Quality, Office of Water Quality
5301 Northshore Drive
North Little Rock, AR 72118

Re: NPDES Permit AR0021865; AFIN 08-00036
Additional Responses to Letter dated October 11, 2023
MCE Project No. 23-2159

Mr. Healy,

Good evening. McClelland Consulting Engineers continues to assist the City of Eureka Springs in evaluation of the existing wastewater treatment plant equipment and function and has continued to work on final responses to your letter dated October 11, 2023, Request for Interim Measures, Bacteria Sampling, Communications Plan and Corrective Actions Plan. MCE and the city offer the following additional responses to your letter;

1. Continue all actions to stop the unpermitted discharge from the wastewater treatment plan. Continue to timely report the SSO's and unpermitted discharges.

MCE continues to visit the plant weekly, most recently on Tuesday, December 12, 2023. We have observed the plant operating as intended with no discharges of untreated or partially treated wastewater into the creek receiving waters. It is our understanding that the city and staff were able to make the appropriate emergency repairs and fixes to keep treatment operating with no additional tank overflows/spills.

However, ongoing additional repairs, equipment replacement, new construction and monitoring will be required soon. Pump repairs due to rocks in the system are very costly and have been happening more and more often. Additionally, multiple small leaks/seeps have been identified at the existing headworks area that will require immediate attention including at the diversion manhole structure and at the lower seals of the screening/grit removal package station. MCE is working with the city and equipment suppliers and contractors to produce reliable pricing for the needed repairs and equipment replacements. Pricing for immediate repairs has been received and is likely going to exceed \$500,000 to put both existing screen and grit unit back into service with no guarantee that the repaired equipment will remove the gravel material that caused the original failure.

MCE recommends planning for full replacement of the existing screenings and grit removal systems, as shown on the attached Site Plan markup. New equipment will be located at the SBR reactor to potentially eliminate an intermediate site pump/lift station and reduce O&M and electricity costs. Without full replacement, or other

measures of keeping rocks out of the system, there will likely be major pump failures again in the future.

Specific equipment replacements will be photo documented and provided in our next update letter that will also address the comments in the most recent inspection report letter from DEQ. Staff will continue to report any unpermitted SSO's or discharges. Staff continue to provide correspondence and reporting as required.

2. Submit emails twice a week to provide updates to SSOADEQ@adeq.state.ar.us on the City's progress towards stopping the unpermitted discharges and impacts to the water quality in Leatherwood Creek in Eureka Springs. Once the unpermitted discharge has ceased, provide an email notification to SSOADEQ@adeq.state.ar.us with photographs confirming the unpermitted discharge has stopped.

Required email updates have been reduced to once weekly. Plant staff continue to update the details of the current repairs as they are completed.

3. Immediately sample Leatherwood Creek at the locations listed below, with additional sampling following each SSO or unpermitted discharge from the WWTP with subsequent samples collected every three (3) calendar day, at minimum, for E. coli. Copies of the analytical results and chain-of-custody forms shall be emailed to the DEQ Office of Water Quality, Enforcement Branch within two (2) calendar days of sample collection;
 - a. The confluence from the WWTP outfall into Leatherwood Creek;
 - b. Leatherwood Creek at the crossing near 835 Highway 23 North;
 - c. Leatherwood Creek at the powerline crossing approximately ½ mile from the WWTP;
 - d. Leatherwood Creek at the crossing of Highway 23 North;
 - e. Leatherwood Creek upstream from the WWTP.

The aforementioned additional sampling has ceased per permission from DEQ.

4. Continue to monitor and sample every three (3) calendar days until there are two (2) consecutive samples that are below the water quality criteria for E. coli of 126 cfu/100mL. Copies of the analytical results and chain-of-custody forms shall be emailed to DEQ Office of Water Quality, Enforcement Branch within two (2) calendar days of sample collection. The City of Eureka Springs shall also notate the coordinates of the sample locations on the chain-of-custody forms.

Reference previous response.

5. The City of Eureka Springs shall, by close of business on Friday, October 13, 2023, submit a Communication Plan to:

- a. Notify the public immediately of the water quality issues in Leatherwood Creek. Specifically, the notification shall be communicated to residents in the areas adjacent to Leatherwood Creek downstream of the WWTP. The City of Eureka Springs shall develop a notification system and post signage to the impacted areas. As needed, the City of Eureka Springs may engage with the Arkansas Department of Health to obtain guidance regarding the information to include on signage to address public health concerns.

City staff worked directly with DEQ to develop a new Sanitary Sewer Overflow policies and procedures, including public notification, that has been implemented by the city, provide previously.

- b. Provide regularly scheduled updates regarding improvements or decreases in water quality in Leatherwood Creek to the public.

Weekly updates are provided by plant staff on the ongoing repairs.

6. By close of business on Friday, October 20 2023, submit an Interim Measures Plan, certified by a Professional Engineer licensed in the state of Arkansas that evaluates the City of Eureka Springs' current operations to determine the cause of the recurring SSOs/unpermitted discharges and make necessary operational changes to prevent further SSOs/unpermitted discharges within the WWTP or provide a Corrective Action Plan (CAP) and milestone schedule for any measures that exceed operational changes including, but not limited to, treatment plant modification or increase in plant treatment capacity, necessary to address and prevent the SSOs/unpermitted discharges.

- o Review the previously completed Comprehensive Collection System Evaluation, USI Engineering, to determine if recommendations were completed.

The recommendations of this report have not been fully implemented.

- o Review the previously completed Lakeside Headworks Screen Installation Inspection Report – February, 2016, to determine if recommendations were completed.

The recommendations of this report have not been fully implemented.

- o Confirm plant water pressure is adequate for equipment needs.

The recent upgrade of the potable water main that provides service to the WWTP, completed in 2022, has insured that adequate water pressure is available for equipment wash water needs.

- Confirm/coordinate for creation of Routine Maintenance Plans for all major items of equipment including pumps, motors, and gears boxes.

MCE has obtained the existing plant Operations & Maintenance Manual and will be working with plant staff to develop an O&M schedule for each process including checklists that can be used to verify that routine maintenance has been performed.

- Is a rock screen needed ahead of fine screen so that damage does not occur with each flushing event?

MCE recommends new measures to protect the existing treatment works from rocks. The existing screen and grit equipment manufacturer has provided a solution that appears to be maintenance intensive. This is also prohibitive due to the constrained area of this part of the WWTP site. There is basically no working room at this area.

Multiple alternate equipment manufacturers have been contacted and are currently working on proposals for a new screening and grit removal facility that will be located much closer to the existing SBR reactor units. See attached existing asbuilt Site Plan that has been marked up with details for use for pricing. Pricing is expected soon and will be used to create a project budget for approval by the city council.

- Review USI letter, report of work in 2011 and 2012 proposed work plan to determine if recommendations were completed.

The recommendations of this report have not been fully implemented.

- Find old report/evaluate existing effluent phosphorus filter pilot equipment to determine possible performance and costs for reactivation.

At this time, reactivation of the phosphorus filter pilot equipment does not appear to be a practical or financially attractive option. However, the steel tank vessel does appear to be in good shape and will be considered for other uses.

- Review Circuit Rider Assistance Program Report recommendations, Areas of concern, and recommended improvement actions to determine if these were implemented.

The recommendations of this report have not been fully implemented.

- Perform preliminary identification of major sources of Infiltration and Inflow, determine if a collection system master plan update or flow monitoring are recommended.

The existing collection system lift stations have just this week been connected with telemetry to the existing SCADA system, which will allow them to monitor operations and provide more information to identify any areas of concern. MCE recommends a detailed update to their gravity collections system evaluation report.

- Review existing Standard Operating Procedures and evaluate if updates are recommended.

MCE has obtained the existing plant Operations & Maintenance Manual and will be working with plant staff to develop an O&M schedule for each process including checklists that can be used to verify that routine maintenance has been performed.

- Evaluate existing structures for possible use for wet weather operations.

MCE is not currently recommending that any existing structures be repurposed for storage during wet weather operations. This option will continue to be evaluated as preliminary planning continues.

MCE has now spent significant time onsite at the Eureka Springs WWTP. The issues that appear to plague the operations are all related to availability of funding and long-term planning. When the overflow occurred, there were no spare parts to fix the broken equipment. The broken equipment is due to rocks, lots of them, in the treatment system.

Previous expansions that included new equipment and provisions to address most of these issues have not been able to be fully funded and completed. Therefore, less than the full designed system was put online during the previous major renovation and the long years of wear and tear that a wastewater plant experiences have now caught up. Due to this accelerated wear and tear there is a lot of deep cleaning (and rock removal) of the existing treatment units and other general site clean up that is recommended.

Additionally, specific system upgrades and replacements recommended include;

- Influent screenings removal and processing system (must remove gravel/rocks)
- Influent grit removal and processing system
- Clean SBR reactor basins of rocks and debris, restart for treatment.
- Provide aerated sludge storage including blowers, aeration diffusers, and pumping system.
- Provide new chemical storage and feed systems for influent and belt filter press system.

- Provide full set of spare parts, including spare pump and blower.
- Provide additional emergency alarm sensors and connect to SCADA for automatic alerts.
- Level floor/construct floor drains to allow pump room floor to free drain to existing floor drains.
- Install new pumps in existing site lift station.
- New influent main to disconnect old treatment units and provide leak free service.
- New dewatered sludge storage.
- Evaluate BFP sizing and make recommendations for capacity.

MCE recommends a full cost-of-service based rate study for the sewer utility to determine how repairs, upgrades, and long-term maintenance can be paid for. MCE is working with the city to execute a contract for the rate study to begin in January 2024. The rate study is anticipated to take 3-6 months and then will have to be reviewed and approved by the city prior to new rates taking effect.

Planning, design and permitting for the recommended repairs will likely take 9-12 months using traditional design-bid-build project delivery methods. MCE recommends that the City consider more rapid project delivery available with CMAR and Design Build project delivery options, as approved by their legal council and in compliance with state law. It is likely that repairs and permanent upgrades will be needed as soon as possible.

Thank you for all your help on this project. Please don't hesitate to contact us if you have any questions or comments.

Sincerely,



Zane Lewis, P.E., LEED AP BD+C

Project Manager/Engineer

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Subject: RE: City of Eureka Springs – NPDES Permit AR0021865; AFIN 08-00036; MCE Project# 23-2159 WWTP Emergency Response
Attachments: 23-2159 Eureka Springs WWTP Emergency Response - Proposed Work Site Plan.pdf

Referenced Site Plan is attached.

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- Notes**
1. See Sheet 612D for sludge waste line connection details.
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 4. At this location, the Contractor shall connect the new 2" PVC non-potable water line to the existing non-potable water line.
 5. The Contractor shall install the new 6" force main from the existing Recycle Pump Station No. 1 to the existing flume as shown. The new force main shall be connected to the existing lift station by uncovering and connecting to the existing 6" discharge. The area where the force main is to be laid shall be excavated prior to construction to determine where existing pipe is located.
 6. The new 2" force main shall be installed buried from the lift station to the SBR basin at which point the line shall be installed up the basin wall and shall be connected to the influent pipe at the location shown with a 2" tapping saddle and 2" gate valve. The saddle shall be rotated so that the tap is at the top of the influent pipe. The 2" force main shall be secured to the basin wall with a minimum of three 2" steel pipe straps. Insulate 2" pipe that is above ground to 3 feet below ground.
 7. New potable water service RPZ to be located inside janitor's closet in office building.
 8. Remove existing yard hydrant and install a new hydrant and connect non-potable waterline to 2" existing waterline from Belt Press Building.
 9. All buried ductile iron pipe shall be mechanical or push on joint.
 10. All exposed ductile iron pipe shall be flanged.
 11. Finished grade spot elevations are provided around new structures. The Contractor shall finish grade the site to these elevations and grade the site to drain away from all structures.
 12. THE CONTRACTOR SHALL CONSTRUCT A 6-INCH THICK COMPACTED A.B.C. CLASS 7 SURFACE AROUND ALL NEW STRUCTURES A MINIMUM WIDTH OF 20 FEET.
 13. All site preperating, excavation, and backfilling shall be done in accordance with the applicable sections of the Technical Specifications.
 14. New potable water service RPZ to be located near south property line and a "hot box" enclosure is to be installed around new RPZ.

BASIS OF BEARINGS:
 MSI: GPS OBSERVATIONS, AR STATE PLANE, NAD83, ZONE AR NORTH,
 REFERENCES:
 AHTD: GPS CONTROL IN CARROLL COUNTY
 DMS: CITY OF EUREKA SPRINGS, 5/9/2004

- LEGEND:**
- | | | |
|---------------------|---------------------|--------------------------|
| ⊙ EXISTING IRON PIN | ⊙ FIRE HYDRANT | ⊙ (RECORD MEASUREMENT) |
| ⊙ EXISTING STONE | ⊙ WATER METER | ⊙ TELE. STUB-UP |
| ⊙ SET 3/8" IRON PIN | ⊙ WELL | ⊙ TELE. ENTRANCE |
| ⊙ COMPUTED CORNER | ⊙ WATER VALVE | ⊙ FIBER OPTIC CABLE |
| ⊙ SET 2" ALUM. CAP | ⊙ WATER HYDRANT | ⊙ U.G. T.V. CABLE BOX |
| ⊙ BENCH MARKER | ⊙ MANHOLE | ⊙ TV CABLE ENTRANCE |
| ⊙ POWER POLE | ⊙ SEWER CLEAN OUT | ⊙ SATELLITE DISH |
| ⊙ VERTICAL PIPE | ⊙ U.G. ELEC. TRANS. | ⊙ HARDWOOD TREE OR SHRUB |
| ⊙ CONCRETE PEER | ⊙ ELEC. ENTRANCE | ⊙ PINE OR CEDAR TREE |
| ⊙ CONCRETE PEDISTAL | ⊙ GAS ENTRANCE | |
| FENCE | ⊙ GAS METER | |

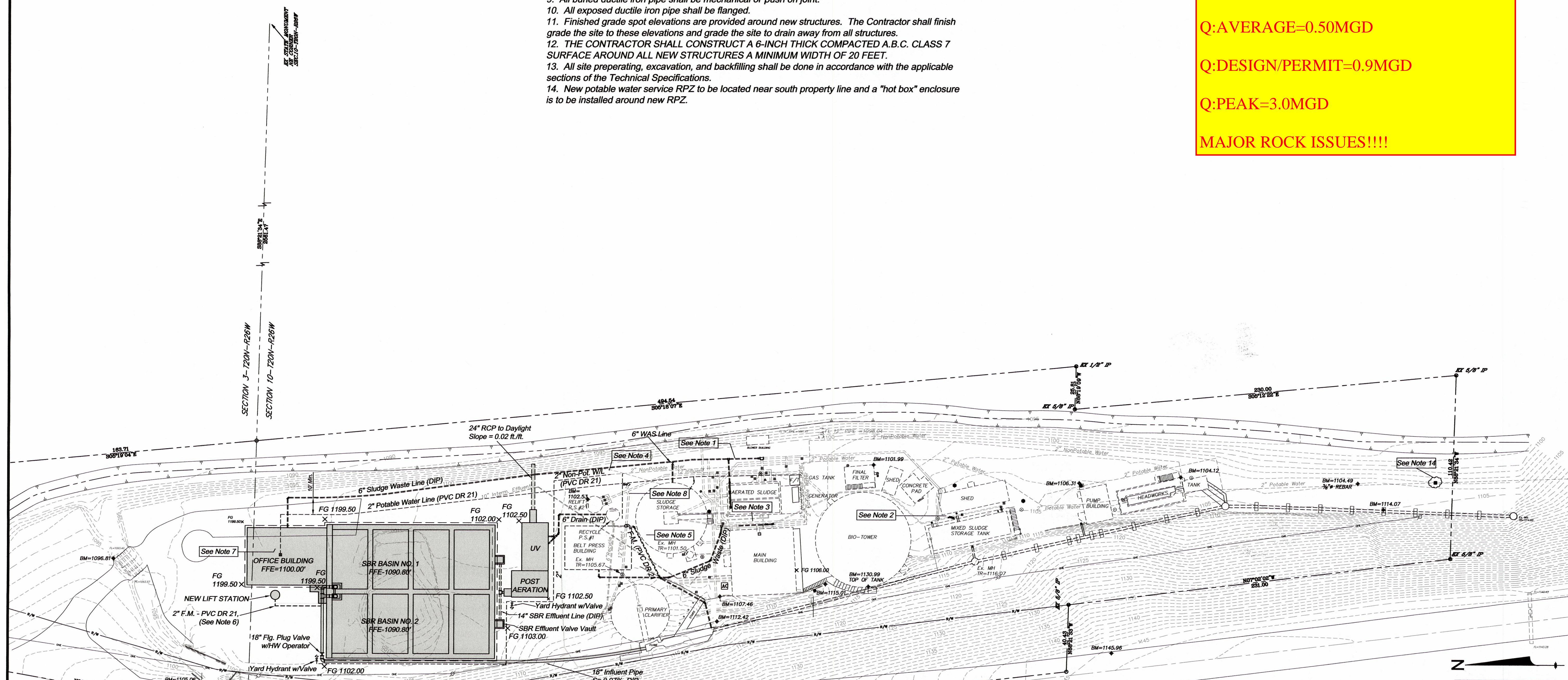
ADDITIONAL PLANT DESIGN CRITERIA:

Q: AVERAGE=0.50MGD

Q: DESIGN/PERMIT=0.9MGD

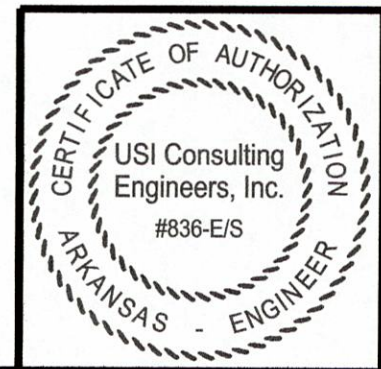
Q: PEAK=3.0MGD

MAJOR ROCK ISSUES!!!!



ISSUED - CHANGE ORDER NO. 1

PLANS OF RECORD as shown by JLM



CITY OF EUREKA SPRINGS, ARKANSAS			
PHASE 1 - TREATMENT PLANT UPGRADE			
REVISED SITE PLAN			
USI Consulting Engineers Springdale, Arkansas	JOB	DATE	SCALE: 1"=30'
	0509068	11/07/07	
DRAWN	CKD	SHEET	
JLM	TWC	100A	