OSAGE BEACH / LAKE OZARK
JOINT SEWER BOARD MEETING
AGENDA
JANUARY 21, 2020 @ 4:00 p.m.
LAKE OZARK CITY HALL

1. CALL TO ORDER

2. ROLL CALL

Mayor, Osage Beach, John Olivarri
Mayor, Lake Ozark, Gerry Murawski
City Administrator, Osage Beach, Jeana Woods
City Administrator, Lake Ozark, Dave Van Dee
Alderman, Osage Beach, Greg Massey
Alderman, Lake Ozark, Judy Neels
Public Works Director, Lake Ozark, Matt Michalik
Resident Member, Mr. Gary Hamner

3. MINUTES

Page Numbers

Regular Meeting: December 17, 2019 — **3-4**

4. REPORTS

Bill List	**5-20**
Revenue Budget Analysis	21
Expenditure Budget Analysis	**23**
Income & Expense Summary	**25**
December Alliance Report of Operations	**27-43**
Approval of Flow Charts December 2019	

5. OLD BUSINESS

A. Board Representative update

6. NEW BUSINESS

A. Discussion and possible action regarding approval of the Inventory list	**44-50**
B. Discussion and possible action regarding the Emergency Response Plan	**51-74**
C. Discussion of the Annual flow charts	**75-77**

7. **ADDITIONAL DISCUSSION ITEMS**

8. **ADJOURNMENT**

THE NEXT MEETING WILL BE FEBRUARY 18, 2020 4:00 PM @ LAKE OZARK CITY HALL

LAKE OZARK-OSAGE BEACH
JOINT SEWER BOARD
Meeting Minutes – December 17, 2019

CALL TO ORDER:

Mayor John Olivarri called the meeting to order at 4:00 pm on Tuesday, December 17, 2019 at Lake Ozark City Hall

ROLL CALL:

Mayor, Osage Beach, John Olivarri- Present
Mayor, Lake Ozark, Gerry Murawski - Present
City Administrator Osage Beach, Jeana Woods - Absent
City Administrator Lake Ozark, Dave Van Dee – Absentt
Alderman Osage Beach, Greg Massey - Present
Alderman Lake Ozark, Judy Neels- Present
Public Works Director Lake Ozark, Matt Michalik – Present
Resident Member, Mr. Gary Hamner - Present

MINUTES:

Public Works Director Michalik to approve the meeting minutes of November 19, 2019 his motion was seconded by Alderman Neels, and passed unanimously.

REPORTS:

The November Bill list and Revenue Budget, Expenditure Budget Analysis, Income & Expense Summary and Check Registers and Bank Statements were reviewed. A Motion was made by Resident Member Hamner to approve the documents, and pay the bills. His motion was seconded by Alderman Massey, and was passed unanimously.

Alliance Report of Operations: The average daily incoming flow for November was 1.264 mgd. We had 3.5 inches of precipitation measured at the WWTP.

Operationally, the plant's discharge was excellent, with an effluent monthly average BOD of 2.0 mg/l and TSS of 2.4 mg/l respectively for November, which represents a 97.8% or better removal.

The MLSS average for both aeration basins was 4,415 mg/l. The total dry weight sludge inventory for November totaled 230,968 pounds. There were 29 tanker loads or 107,300 gallons of bio solids land applied in November. There were 15 tanker loads or 36,000 gallons of septage received for the month.

APPROVAL OF FLOW CHART

Motion was made by Public Works Director Michalik to approve the Flow Chart for November. His motion was seconded by Alderman Neels. Unanimous approval, motion passed.

OLD BUSINESS:

A. Public Works Director Michalik stated there were no updates at this time

B. Gary Hutchcraft advised they were able to get the seal for the pump so they will be able to fix it They will not have to replace the pump now.

C. Gary Hutchcraft advised Lumix needs an extension from December 31, 2019 to January 31, 2020. After a brief discussion by the board, the board was ok with the extension on the completion date with no penalties and will pay once it's completed. A motion to extend the completion date to January 31, 2020 and defer it to 2020 was made by Public Works Director Michalik, his motion was seconded by Alderman Neels. Unanimous approval, motion passed.

NEW BUSINESS:

ADDITIONAL DISCUSSION ITEMS: None at this time.

ADJOURNMENT:

With no further business to discuss the meeting adjourned at 4:12 pm.

Approved on:

_____
Mayor, John Olivarri

_____
City Collector, Trisha Kane

JOINT SEWER BOARD
BILL LIST
JANUARY 21, 2020

OPERATING FUND BILLS PAID PRIOR TO BOARD MEETING:	$	171.36
OPERATING FUND BILLS TO BE PAID:	$	39,239.10
EQUIPMENT REPLACEMENT FUND BILLS PAID PRIOR TO BOARD MEETING:	$	2,023.00
EQUIPMENT REPLACEMENT FUND BILLS TO BE PAID:	$	930.00
TOTAL	$	42,363.46

OPERATING FUND BILLS PAID PRIOR TO BOARD MEETING:

Account	Check	Paid To:	Description:		Amount:
4020	196	Grainger	Motor Starter for Pista Grit	$	171.36
				$	-
			TOTAL	$	171.36

OPERATING FUND BILLS TO BE PAID:

Account	Check	Paid To:	Description:		Amount:
4000		Equipment Replacement Fund	Payment into ER Fund	$	5,967.00
4020		Controlled Heating & Cooling	Admin/Lab Furnace Repair	$	1,135.72
4020		Jani King	January	$	195.00
4020		JCI Industries, Inc.	Crane/Hoist Inspection	$	250.00
4020		JCI Industries, Inc.	Lift Station Pump	$	2,450.00
4020		Menards	Tarp	$	19.98
4020		Menards	GFI/Wallplate	$	27.98
4170		Alliance Water Resources, Inc.	January	$	25,465.00
4175		Ameren MO	11673321	$	65.67
4175		Ameren MO	98041275	$	3,416.27
4176		AT&T	Janaury	$	92.39
4176		Republic	Janaury	$	154.09
				$	-
				$	-
			TOTAL	$	39,239.10

EQUIPMENT REPLACEMENT FUND BILLS PAID PRIOR TO BOARD MEETING:

Account	Check	Paid To:	Description:		Amount:
4000	1042	USA Bluebook	Replace Portable DO probe	$	850.00
4000	1042	USA Bluebook	Replace Ammonia Meter	$	1,198.00
4000	1042	USA Bluebook	Credit for freight	$	(25.00)
			TOTAL	$	2,023.00

EQUIPMENT REPLACEMENT FUND BILLS TO BE PAID:

Account	Check	Paid To:	Description:		Amount:
4000	1043	Catalyst Electric	Final Parking Lot Lights	$	930.00
				$	-
				$	-
			TOTAL	$	930.00

CONTROLLED HEATING & COOLING CO.
883 E. HIGHWAY 42
SUITE A
OSAGE BEACH, MO 65065
573-348-1535

Date	Invoice
12/27/2019	91226081217

Bill To
Joint Sewer Board P.O. Box 1985 Lake Ozark, MO 65049

Celebrating 36 Years
1983 - 2019

DEC 30 2019

P.O. No.	Terms	Project
	Due on receipt	

Description	Qty	Rate	Amount
BLOWER MOTR 1HEAT PUMP;0131M00272S BLOW MTR 1HP	1	1,027.58	1,027.58
MISCELLANEOUS MINOR REPAIR (057825)	1	108.14	108.14
12-26-19 JIM :NOT COMING ON: THE FURNACE WAS SHOWING ERROR CODE B3 & B4 AND THE BLOWER WOULD NOT RUN. INSTALLED A TEMPORARY MOTOR AND WILL ORDER THE CORRECT MOTOR. THE HEAT PUMP HAD A 23' TEMPERATURE RISE WITH THE TEMPORARY MOTOR AND THE FURNACE WILL NOT RUN WITHOUT THE CORRECT MOTOR PLUGGED INTO IT.12-27-19 and ANTHONY JIM INSTALLED THE CORRECT ECM BLOWER MOTOR. ALL AMP DRAWS WERE WITHIN SPEC'S AND THE HEAT PUMP HAD A 24' TEMPERATURE RISE. THE GAS FURNACE HAD A 40' TEMPERATURE RISE. THE SYSTEM IS OPERATING PROPERLY AT THIS TIME.			
GL Acct#: 4020			
Signature: [signature]			
Date: 12/30/19			
	REPAIR	ADMIN/LAB BLDG FURNACE	
Thank you for your business.		**Total**	$1,135.72

Remit To:

JCI Industries, Inc.
PO Box 411114
Kansas City, MO 64141
816-525-3020

REBILL INVOICE

REBILL INVOICE	
8189536	
Invoice Date	Page
01/06/2020	1 of 1
ORIGINAL INVOICE NUMBER	
8188844	

Branch 06 JEFFERSON CITY

Bill To:

LAKE OZARK/OSAGE BEACH JOINT SEWER BOARD
PO BOX 1985
LAKE OZARK, MO 65049

Ship To:

ALLIANCE WATER RESOURCES
#3 ANDERSON ROAD
LAKE OZARK, MO 65049

RECEIVED JAN 07 2020

Customer ID: 400263

PO Number	Term Description	Net Due Date
GARY 10/3/19	Net 30	1/19/2020

Order Date	Pick Ticket No	Primary Salesrep Name	Order Taker
9/26/2019 15:19:54		Ben Reinkemeyer Jr	HHASKELL

Quantities Ordered	Shipped	Remaining	UOM Unit Size	Disp.	Item ID / Item Description	Pricing UOM Unit Size	Unit Price	Extended Price
1.00	1.00	0.00 EA	1.0		REFYCT09-26-19 / HYGT PUMP MAKE 3 IN TO 1 / 3102 180-4-10305	EA 1.0000	2,450.00	2,450.00

Invoice Note: REBILL INVOICE TO CORRECT SELL AMOUNT BILLED ON ORIGINAL INVOICE 8188844
ORIGINAL INVOICE HAS BEEN CREDITED IN FULL AND REMOVED FROM YOUR ACCOUNT
PLEASE PROCESS PAYMENT FROM THIS INVOICE

LIFT STATION PUMP

Total Lines: 1

GL Acct#: 4020

Signature: [signature]

Date: 1/7/20

SUB-TOTAL:	2,450.00
TAX:	0.00
AMOUNT DUE:	2,450.00

Carrier: RTO DELIVER Tracking #:

Merchandise cannot be returned without permission. Claims for shortages or errors must be made in writing within thirty (30) days after receipt of goods. All approved returns must include a JCI return authorization number and may be subject to a restocking fee up to 25%

ORIGINAL

Alliance Water Resources, Inc.
Professional Water and Wastewater Operations
205 South Keene Street
Columbia, Missouri 65201
(573) 874-6080 Fax (573) 443-0833

INVOICE

Invoice No: 8689
Invoice Date: 2-Jan-20
Customer No: 20220
Terms: 30 days

SOLD TO

Lake Ozark/Osage Beach Joint Utility Board
c/o Karn Bell
City of Osage Beach
1000 City Parkway
Osage Beach, MO 65065

REFERENCE	DESCRIPTION	AMOUNT
	Wastewater Plant operating service for month of Jan-2020	$25,465.00
	TOTAL DUE	$25,465.00

Alliance WATER RESOURCES®
Professional Water and Wastewater Operations

December 12, 2019

Board of Directors
Lake Ozark/Osage Beach Joint Wastewater Plant Board
City of Osage Beach
c/o Karri Bell
1000 City Parkway
Osage Beach, MO 65065

Board of Directors:

As per the terms and conditions of the Alliance O&M Agreement dated December 12, 2018, the base fee is adjusted on January 1st each year to reflect the change in the Consumer Price Index and the other terms of the agreement.

The Agreement specifies the use of the Department of Labor's CPI- All Urban Consumers Midwest – Size Class D, not seasonally adjusted (Series ID: CUURD200SA0). The most recent CPI data used to calculate the 2018 base contract fee was September 2017. Accordingly, the 2019 base contract fee will use the 12 month period from November 2018 through November 2019.

The appropriate indices and resulting contract adjustment is calculated as follows:

CPI	November 2018	234.292
CPI	November 2019	238.850

CPI Increase = (238.850 – 234.292) / 234.292
= + 2.0%

Per contract, the base fee is adjusted annually at the CPI percentage increase/decrease annually. The CPI adjustment for 2020 is 2.0%, therefore the base rate is adjusted at + 2.0% beginning January 1, 2020.

Adjusted O&M Fee:

Previous Monthly Fee = $24,996.00 x 2.0
New Monthly Fee = $25,465.00

The invoice for January 2020 will reflect the new base fee of $25,465.00 per month.

On behalf of Gary Hutchcraft, and our entire staff at Alliance Water Resources, thank you for letting us be of service to your communities.

Sincerely,
Alliance Water Resources

Gary Johnson
Divisional Manager

cc: Board of Directors
Tony Sneed
Gary Hutchcraft

Databases, Tables & Calculators by Subject

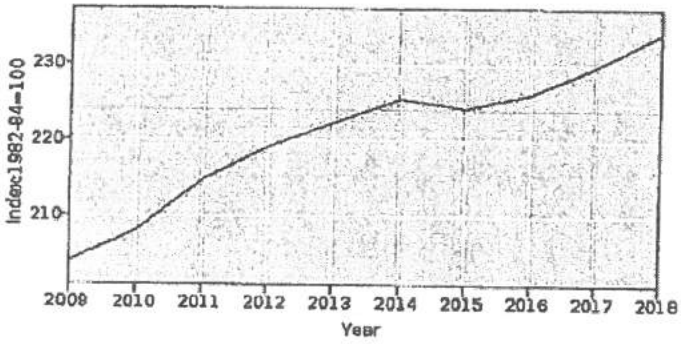
Change Output Options: From: 2009 To: 2019 GO

☑ Include graphs ☐ Include annual averages More Formatting Options

Data extracted on: December 12, 2019 (2:46:19 PM)

CPI for All Urban Consumers (CPI-U)

Series Id: CUUR0200SA0
Not Seasonally Adjusted
Series Title: All items in Midwest urban, all urban consumers, not seasonally adjusted
Area: Midwest
Item: All items
Base Period: 1982-84=100



Download: xlsx

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual	HALF1	HALF2
2009	200.815	201.453	202.021	202.327	203.195	205.350	204.814	205.632	205.601	205.706	206.247	205.613	204.064	202.527	205.602
2010	206.564	206.563	207.359	207.777	207.987	207.886	208.211	208.639	208.788	208.689	208.816	209.270	208.046	207.356	208.736
2011	210.388	211.090	212.954	214.535	215.899	215.954	216.099	216.586	216.968	215.653	215.614	215.173	214.743	213.470	216.016
2012	216.368	216.855	218.975	219.405	219.145	219.017	218.956	220.462	221.125	220.375	219.463	219.033	219.100	218.294	219.906
2013	219.282	221.599	222.121	221.931	223.049	223.775	222.902	223.046	223.252	222.171	221.718	221.194	222.170	221.960	222.381
2014	222.247	223.493	225.485	226.214	226.565	227.588	226.997	226.587	226.913	225.793	224.396	222.821	225.425	225.265	225.585
2015	221.545	222.301	223.550	223.797	224.732	225.946	225.853	225.830	225.184	225.050	224.009	222.722	224.210	223.645	224.775
2016	223.301	223.196	224.621	225.609	226.476	227.835	226.766	227.097	227.636	227.358	226.673	226.794	226.115	225.173	227.057
2017	228.279	228.633	228.824	229.682	229.705	229.780	229.820	230.443	231.030	230.660	231.084	230.548	229.874	229.151	230.598
2018	232.028	232.512	232.931	233.913	235.065	235.455	235.346	235.276	235.524	235.680	234.292	233.458	234.290	233.651	234.929
2019	233.837	235.444	236.793	237.510	238.219	238.288	238.760	238.786	238.847	239.243	238.850			236.682	

ACORD®

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 12/9/2019

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER J. W. Terrill, a Marsh & McLennan Agency LLC co 825 Maryville Centre Drive Suite 200 Chesterfield MO 63017	CONTACT NAME: Jennifer Way, CISR, CRIS, MLIS PHONE (A/C, No, Ext): 314-594-2758 FAX (A/C, No): 888-307-1561 E-MAIL ADDRESS: jway@jwterrill.com
INSURED Alliance Water Resources, Inc. 206 South Keene Street Columbia, MO 65201	INSURER(S) AFFORDING COVERAGE — NAIC # INSURER A: Philadelphia Indemnity Insurance Co. — 18058 INSURER B: Old Republic Insurance Company — 24147 INSURER C: INSURER D: INSURER E: INSURER F:

COVERAGES **CERTIFICATE NUMBER: 237144856** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X COMMERCIAL GENERAL LIABILITY CLAIMS-MADE [X] OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: POLICY [ ] PRO-JECT [X] LOC OTHER:			PHPK2071324	1/1/2020	1/1/2021	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG Employee Benefits	$ 1,000,000 $ 1,000,000 $ 5,000 $ 1,000,000 $ 3,000,000 $ 3,000,000 $ 3,000,000
A	AUTOMOBILE LIABILITY X ANY AUTO ALL OWNED AUTOS SCHEDULED AUTOS X HIRED AUTOS X NON-OWNED AUTOS			PHPK2071324	1/1/2020	1/1/2021	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)	$ 1,000,000 $ $ $
A	UMBRELLA LIAB [X] OCCUR X EXCESS LIAB [ ] CLAIMS-MADE DED [X] RETENTION $ 10,000			PHUB703441	1/1/2020	1/1/2021	EACH OCCURRENCE AGGREGATE	$ 4,000,000 $ 4,000,000 $
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) Y/N: N If yes, describe under DESCRIPTION OF OPERATIONS below	N/A		MWC31262919	3/1/2019	3/1/2020	X PER STATUTE [ ] OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	$ 1,000,000 $ 1,000,000 $ 1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Board President, Joint Sewer, Board of Lake Ozark & Osage Beach is included as Additional Insured(s) for General Liability with respect to work performed by the Named Insured, if required by written contract.

A waiver of subrogation is granted for General Liability coverage in favor of the additional insured, where permitted by law and if required by written contract.

CERTIFICATE HOLDER

Board President, Joint Sewer
Board of Lake Ozark & Osage Beach
City of Osage Beach
Attn: Karri Bell
1000 City Parkway
Osage Beach MO 65065

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Ameren MISSOURI

- Pay by phone 1.866.268 3729
- Pay by mail. PO Box 88068, Chicago, IL 60680-1068
- Pay online or manage your account. AmerenMissouri.com
- Customer Service: 1.877.426.3736

FOCUSED ENERGY. For life.

Account Number 5580005920
Customer Name ALLIANCE WATER RESOURCES INC
Service Address 3 ANDERSON RD
LAKE OZARK, MO 65049

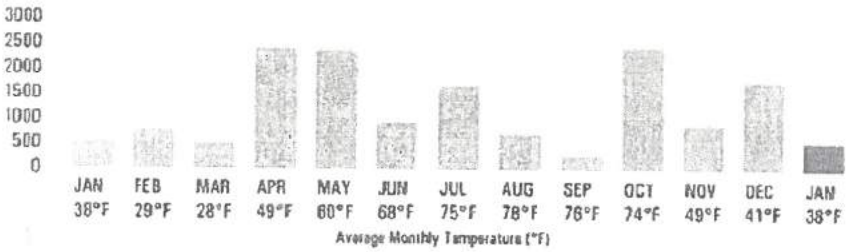
Current Detail for Statement 01/10/2020

Total Electric Charges	$65.67
Total Amount Due	$65.67

AMOUNT DUE	**$65.67**
Due Date	**02/03/2020**
Amount After Due Date	$66.66
Previous Statement	$163.30
Total Payments	$163.30
Payment Received. Thank You.	

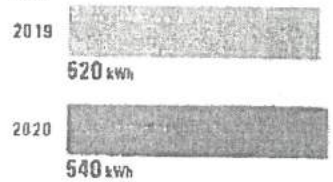
Electric Usage History

Electric Usage in Kilowatt Hours (kWh)



Electric Usage Summary (kWh)

So far this year, you're using 3.8% more than last year.



Usage for Jan 2019 & 2020

13073 00304 6252010 000589 001177 0001 0002

Keeping You Informed.
Update your account information so we can contact you when crews are working in your neighborhood. Fill out the slip and mail it in or update your online account. Don't have an online account? Sign up today at AmerenMissouri.com.

RECEIVED JAN 10 2020

GL Acct#: 4175
Signature:
Date: 1/10/20

» See next page for service details. ---- Keep this portion for your records.

Please return this portion with your payment

Ameren MISSOURI

☐ Check if you have address changes on back.

Amount Due	Due Date
$65.67	February 03, 2020
Delinquent Amount After Due Date	**Account Number**
$66.66	5580005920

Amount Enclosed $

>000304 6252010 0002 092139 1OZ

ALLIANCE WATER RESOURCES INC
PO BOX 1985
LAKE OZARK, MO 65049-1985

AMEREN MISSOURI
PO BOX 88068
CHICAGO IL 60680-1068

50633000 0055800059200 000000065670 000000065670

Electric Service Details — Service from 12/05/2019 - 01/08/2020 (34 days)

Electric Meter Read

METER NUMBER	SERVICE FROM - TO	NO. DAYS	USAGE TYPE	READING TYPE	CURRENT READING	PREVIOUS READING	READING DIFFERENCE	MULTIPLIER	USAGE
88041275	12/05 - 01/08	34	Total kWh	Actual	19655.0000	19601.0000	54.0000	10.0000	540.0000
88041275	12/05 - 01/08	34	Peak kW	Actual	4.2270	0.0000	4.2270	10.0000	42.2700

Usage Summary

Total kWh	540.0000	Winter Base kWh	1680.0000
Current Base kWh	540.0000	Seasonal kWh	0.0000

Rate 2M Sm Gen Svc - 3 Ph w/Dmd

Threshold Peak Demand

DESCRIPTION	USAGE	UNIT		RATE	CHARGE
Base Energy Charge	540.00	kWh	@	$ 0.08360000	$45.14
Seasonal Energy Charge	0.00	kWh	@	$ 0.04820000	$0.00
Customer Charge					$21.43
Fuel Adjustment Charge	540.00	kWh	@	$-0.00136000	$-0.73
Energy Efficiency Program Charge	540.00	kWh	@	$ 0.00010000	$0.05
Energy Efficiency Investment Charge	540.00	kWh	@	$ 0.00542000	$2.92
Federal Tax Rate Reduction	540.00	kWh	@	$-0.00581000	$-3.14
				Total Service Amount	$65.67
				Total Electric Charges	$65.67

Payments Since Previous Statement

DATE RECEIVED	AMOUNT
December 23, 2019	$163.30

Address Changes or Corrections

Name
Address
City, State, Zip
Phone Number

AmerenMissouri.com/WaysToPay

ONLINE E-CHECK
PHONE 866.268.3729
IN PERSON FIND A PAY STATION AT AMERENMISSOURI.COM/PAYSTATION
ONLINE CREDIT CARD
MAIL STUB & CHECK

Ameren MISSOURI

- Pay by phone: 1.866.266.3729
- Pay by mail: PO Box 88068, Chicago, IL 60680-1068
- Pay online or manage your account: AmerenMissouri.com
- Customer Service: 1.877.426.3736

FOCUSED ENERGY. For life.

Account Number 4580005832
Customer Name ALLIANCE WATER RESOURCES INC
Service Address 3 ANDERSON RD, -
LAKE OZARK, MO 65049

AMOUNT DUE **$3,416.27**

Due Date **02/03/2020**

Amount After Due Date $3,467.51

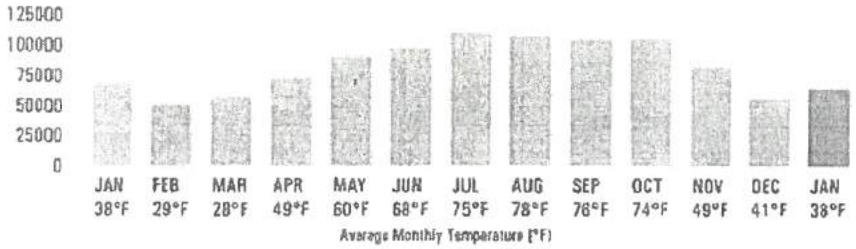
Previous Statement $3,227.15
Total Payments $3,227.15
Payment Received. Thank You.

Current Detail for Statement 01/10/2020

Total Electric Charges	$3,416.27
Total Amount Due	**$3,416.27**

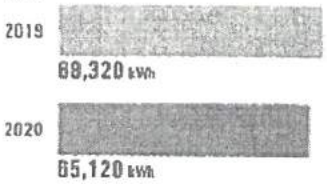
Electric Usage History

Electric Usage in Kilowatt Hours (kWh)



Electric Usage Summary (kWh)

So far this year, you're using **4.7% less** than last year.



Usage for Jan 2019 & 2020

13073 00241 6252010 000463 000925 0001/0002

Keeping You Informed.
Update your account information so we can contact you when crews are working in your neighborhood. Fill out the slip and mail it in or update your [illegible]. Don't have an online account? Sign up today at AmerenMissouri.com

RECEIVED
JAN 10 2020

GL Acct#: 4175
Signature: [signature]
Date: 1/10/20

» See next page for service details.

Keep this portion for your records.

Please return this portion with your payment

Ameren MISSOURI

☐ Check if you have address changes on back.

Amount Due	Due Date
$3,416.27	February 03, 2020
Delinquent Amount After Due Date	**Account Number**
$3,467.51	4580005832

Amount Enclosed $

>000241 6252010 0002 092139 1OZ

ALLIANCE WATER RESOURCES INC
PO BOX 1985
LAKE OZARK, MO 65049-1985

AMEREN MISSOURI
PO BOX 88068
CHICAGO IL 60680-1068

00600000 0045800058302 000003416270 000003416270

Electric Service Details — Service from 12/05/2019 - 01/08/2020 (34 days)

Electric Meter Read

METER NUMBER	SERVICE FROM - TO	NO. DAYS	USAGE TYPE	READING TYPE	CURRENT READING	PREVIOUS READING	READING DIFFERENCE	MULTIPLIER	USAGE
11673321	12/05 - 01/08	34	Total kWh	Actual	57397.0000	56990.0000	407.0000	160.0000	65120.0000
11673321	12/05 - 01/08	34	Peak kW	Actual	0.6400	0.0000	0.6400	160.0000	102.4000

Usage Summary

Total kWh	65120.0000	Peak kW	102.4000
Total Billing Demand	102.4000	October Winter Base kW	216.5000
Winter Base Demand	102.4000	Base kWh Ratio	1.0000
Base kWh (HUD)	65120.0000	Seasonal kWh (HUD)	0.0000

Rate 3M Large General Service

DESCRIPTION	USAGE	UNIT		RATE	CHARGE
Seasonal Energy Charge	0.00	kWh	@	$ 0.03890000	$0.00
Demand Charge	102.40	kW	@	$ 2.00000000	$204.80
Base Energy Charge / Hours Used	15,360.00	kWh	@	$ 0.06650000	$1,021.44
Base Energy Charge / Hours Used	20,480.00	kWh	@	$ 0.04940000	$1,011.71
Base Energy Charge / Hours Used	29,280.00	kWh	@	$ 0.03890000	$1,138.99
Customer Charge					$95.07
Fuel Adjustment Charge	65,120.00	kWh	@	$ 0.00136000	$-88.56
Energy Efficiency Program Charge	65,120.00	kWh	@	$ 0.00020000	$13.02
Energy Efficiency Investment Charge	65,120.00	kWh	@	$ 0.00492400	$320.65
Federal Tax Rate Reduction	65,120.00	kWh	@	$-0.00462000	$-300.85
				Total Service Amount	$3,416.27
				Total Electric Charges	$3,416.27

Address Changes or Corrections

Name
Address
City, State, Zip
Phone Number

AmerenMissouri.com/WaysToPay

ONLINE E CHECK
PHONE 866.268.3729
IN PERSON FIND A PAY STATION AT AMERENMISSOURI.COM/PAYSTATION
ONLINE CREDIT CARD
MAIL STUB & CHECK

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Gurnee, IL 60031-9004
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TOLL FREE: 1-800-493-9876
F.E.I.N.: 52-2418852

RECEIVED
DEC 16 2019

INVOICE

INVOICE NO.	PAGE NO.
083648	1 of 1
CUSTOMER NO.	DATE
1053309	12/04/19

View online at: http://usabluebook.billtrust.com
Web Enrollment Token: GVZ KZT BWR

BILL TO: 1053309
1668 1 MB 0.428 E0107X ID125 05598811069 S2 P6975958 0001:0002

JOINT SEWER BOARD LAKE
OZARK-OSAGE BEACH
PO BOX 1985
LAKE OZARK MO 65049-1985

SHIP TO: 1

JOINT SEWER BOARD LAKE
OZARK-OSAGE BEACH
3 ANDERSON RD
LAKE OZARK MO 65049
USA

Ordered by: 0001 GARY HUTCHCRAFT

Attention: 0001 GARY HUTCHCRAFT

CUSTOMER P.O. NO.	SHIP DATE	SLP	TERMS	TAX CODE	SALES ORDER NO.	W/H	FREIGHT	SHIP VIA
VERBAL GARY	12/04/19	CCL	NET 30	MOEXEMPT	771568	01	FXD/PPD	UPS

USA STOCK NO.	DESCRIPTION	ORDERED	SHIPPED	BACKORDER	U/M	PRICE	PER	EXTENSION
NFF	$500+ ORDERS REC FREE UPS GROUND FREIGHT. EXP 12/31/19	1	1	0	EA	0.00	EA	0.00
65727	Hach IntelliCal Rugged LDO Probe 5 M Cable LDO10105 **FREE UPS GROUND SHIPPING ON ORDERS OVER $500 UNTIL 12/31**	1	1	0	EA	850.00	EA	850.00

REPLACEMENT PORTABLE DO PROBE

GL Acct#: E/R

Signature: Gary Hutchcraft

Date: 12/16/19

THANK YOU for your business!
1.5% MONTHLY FINANCE CHARGE
ON AMOUNTS 30 DAYS PAST DUE
Discounts Apply to Merchandise Only

MERCHANDISE	MISCELLANEOUS	DISCOUNT	TAX	FREIGHT	TOTAL
850.00	0.00	0.00	0.00	0.00	850.00

Should it become necessary to refer your unpaid balance to a collection agency, a collection fee, not to exceed 25% of the balance referred; plus reasonable attorney's fees; and court costs when necessary, will be added to the balance due.

Please Detach and Return Bottom Portion to Ensure Proper Credit to Your Account

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****IMPORTANT****
Please include this customer #
on the face of your remittance check.

INVOICE NO.	CUSTOMER NO.	DATE	TOTAL
083648	1053309	12/04/19	850.00

JOINT SEWER BOARD LAKE
OZARK-OSAGE BEACH
PO BOX 1985
LAKE OZARK MO 65049-1985

REMITTANCE ADDRESS
USABlueBook
P.O. Box 9004
Gurnee, IL 60031-9004

0001-0002

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Gurnee, IL 60031-9004
TEL: (847) 689-3000
FAX: (847) 689-3001
TOLL FREE: 1-800-493-9876
F.E.I.N.: 52-2418852

INVOICE

INVOICE NO.	PAGE NO.
086852	1 of 1
CUSTOMER NO.	DATE
1053309	12/09/19

View online at: http://usabluebook.billtrust.com
Web Enrollment Token: GVZ KZT BWR

BILL TO: 1053309
1689 1 MB 0.426 E0107 I0126 D5614034681 S2 P6975959 0002:0002

JOINT SEWER BOARD LAKE
OZARK-OSAGE BEACH
PO BOX 1985
LAKE OZARK MO 65049-1985

SHIP TO: 1

JOINT SEWER BOARD LAKE
OZARK-OSAGE BEACH
3 ANDERSON RD
LAKE OZARK MO 65049
USA

RECEIVED
DEC 16 2019

Ordered by: 0001 GARY HUTCHCRAFT

Attention: GARY HUTCHCRAFT

CUSTOMER P.O. NO.	SHIP DATE	SLP	TERMS	TAX CODE	SALES ORDER NO.	W/H	FREIGHT	SHIP VIA
VERBAL GARY	12/09/19	TMS	NET 30	MOEXEMPT	764418	01	FXD/PPD	UPS

USA STOCK NO.	DESCRIPTION	ORDERED	SHIPPED	BACKORDER	U/M	PRICE	PER	EXTENSION
44245	Hach sensION+ MM340 Benchtop Meter Only LPV2200.97.0002 SDS VISIT WWW.USABLUEBOOK.COM	1	1	0	EA	1,173.00	EA	1,173.00

REPLACEMENT AMMONIA METER

GL Acct#: E/R

Signature: [signature]

Date: 12/16/19

THANK YOU for your business!
1.5% MONTHLY FINANCE CHARGE
ON AMOUNTS 30 DAYS PAST DUE
Discounts Apply to Merchandise Only

MERCHANDISE	MISCELLANEOUS	DISCOUNT	TAX	FREIGHT	TOTAL
1,173.00	0.00	0.00	0.00	25.00	1,198.00

Should it become necessary to refer your unpaid balance to a collection agency, a collection fee, not to exceed 25% of the balance referred; plus reasonable attorney's fees; and court costs when necessary, will be added to the balance due.

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****IMPORTANT****
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on the face of your remittance check.

INVOICE NO.	CUSTOMER NO.	DATE	TOTAL
086852	1053309	12/09/19	1,198.00

JOINT SEWER BOARD LAKE
OZARK-OSAGE BEACH
PO BOX 1985
LAKE OZARK MO 65049-1985

REMITTANCE ADDRESS
USABlueBook
P.O. Box 9004
Gurnee, IL 60031-9004

0002:0002

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Remit To:
P.O. Box 9004
Gurnee, IL 60031-9004
TEL: (847) 689-3000
FAX: (847) 689-3001
TOLL FREE: 1-800-493-9876
F.E.I.N.: 52-2418852

CREDIT MEMO

INVOICE NO.	PAGE NO.
092967	1 of 1
CUSTOMER NO.	DATE
1053309	12/16/19

View online at: http://usabluebook.billtrust.com
Web Enrollment Token: GVZ KZT BWR

BILL TO: 1053309

JOINT SEWER BOARD LAKE
OZARK-OSAGE BEACH
PO BOX 1985
LAKE OZARK MO 65049
USA

RECEIVED
DEC 17 2019

SHIP TO: 1

JOINT SEWER BOARD LAKE
OZARK-OSAGE BEACH
3 ANDERSON RD
LAKE OZARK MO 65049
USA

Ordered by

CUSTOMER P.O. NO.	SHIP DATE	SLP	TERMS	TAX CODE	SALES ORDER NO.	W/H	FREIGHT	SHIP VIA
VERBAL GARY	12/16/19	TMS	1%/10 NET 30	MOEXEMPT	C97775	01	PREPAID	

USA STOCK NO.	DESCRIPTION	ORDERED	SHIPPED	BACKORDER	U/M	PRICE	PER	EXTENSION
	CREDIT FOR FREIGHT CHARGED ON INVOICE # 086852 CREDIT HAS BEEN APPLIED TOWARDS INVOICE # 086852							
	CREDIT							
	GL Acct#: E/R							
	Signature: Gary Hutchings							
	Date: 12/17/19							

THANK YOU for your business!
1.5% MONTHLY FINANCE CHARGE
ON AMOUNTS 30 DAYS PAST DUE
Discounts Apply to Merchandise Only

MERCHANDISE	MISCELLANEOUS	DISCOUNT	TAX	FREIGHT	TOTAL
0.00	0.00	0.00	0.00	-25.00	-25.00

Should it become necessary to refer your unpaid balance to a collection agency a collection fee not to exceed 25% of the balance referred; plus reasonable attorney's fees; and court costs when necessary, will be added to the balance due

Please Detach and Return Bottom Portion to Ensure Proper Credit to Your Account

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****IMPORTANT****
Please include this customer #
on the face of your remittance check.

INVOICE NO.	CUSTOMER NO.	DATE	TOTAL
092967	1053309	12/16/19	-25.00

JOINT SEWER BOARD LAKE
OZARK-OSAGE BEACH
PO BOX 1985
LAKE OZARK MO 65049
USA

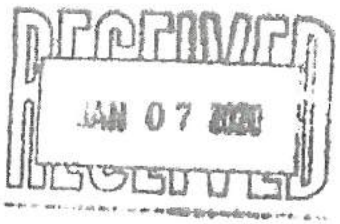
REMITTANCE ADDRESS
USABlueBook
P O Box 9004
Gurnee, IL 60031-9004

CATALYST ELECTRIC
31 ROCK HOUSE RD
LINN CREEK, MO 65052

Invoice

Date	Invoice #
1/6/2020	10849

Bill To
Joint Sewer Board #3 Anderson Road Lake Ozark, MO



P.O. No.	Terms	Project
	Net 30	Lighting repair

Quantity	Description	Amount	Rate
	--Invoice for completed work according to Estimate #5593-- Bid is for relocation of lighting at Alliance Water in Lake Ozark, MO. Bid includes labor and material to complete the following scope of work - Remove 2 light heads that don't have power, relocate to other poles - Add light by pole by equipment room, use existing power and bracket - Add light by lower building down the hill, re-route power to 120/240v panel inside - Set junction box outside to interrupt current 480v power to pole. - Add timer for outside light - Test out installation Does not include: - Any other scope of work - Any other troubleshooting or repair of existing wiring FINAL INVOICE ON PARKING LOT LIGHT REPLACEMENT GL Acct#: ER Signature: Larry Hutchings Jr Date: 1/7/20	930.00	930.00

Thank you for your business!

Total	$930.00
Payments/Credits	$0.00
Balance Due	$930.00

Phone #	Fax #	E-mail	Web Site
573-552-8488	573-552-8248	office@catalysteleectric.com	www.catalysteleectric.com

MONTH-TO-DATE AND YEAR-TO-DATE
REVENUE/BUDGET ANALYSIS
12/31/2019

Account Number	Account Name	2017 Actual	2018 Actual	2019 Budget	2019 Actual as of 12/31/2019	2019 December Revenue	Percent YTD
3020	Osage Beach	478,614.41	480,784.67	478,500.00	475,091.53	39,512.22	99%
3010	Lake Ozark	71,385.58	69,215.30	71,500.00	74,908.46	6,321.11	105%
3030	Misc.	0.00	1,485.00	0.00	0.00	0.00	
3100	Interest	781.57	1,484.82	400.00	4,286.79	194.68	1072%
3060	Waste Haulers' Fee	30,500.00	25,780.00	30,000.00	26,260.00	1,280.00	88%
	Total Operating Fund	581,281.56	578,749.79	580,400.00	580,546.78	47,308.01	100%
	E/R Fund Income	2,319.07	4,281.74	3,000.00	6,387.59	1,137.38	213%
	TOTAL INCOME	583,600.63	583,031.53	583,400.00	586,934.37	48,445.39	101%

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MONTH-TO-DATE AND YEAR-TO-DATE
EXPENDITURE/BUDGET ANALYSIS
12/31/2019

Account Number	Account Name	2017 Acutal	2018 Acutal	2019 Budget	2019 Actual as of 12/31/2019	2019 December Expenses	Percent YTD
4000	Equipment Replace Fund	41,604.17	41,604.17	41,604.00	41,604.00	3,467.00	100%
4020	*Maintenance & Repair	129,789.11	9,713.66	122,000.00	104,082.97	2,220.87	85%
4140	Insurance	17,144.00	18,475.25	19,030.25	18,761.00	0.00	99%
4150	Vehicle Repair/Maint	12,047.61	3,887.47	8,000.00	5,479.60	0.00	68%
4160	Haulers Fees to Contract	8,000.00	8,000.00	0.00	0.00	0.00	
4170	Contract Management	311,229.84	319,010.64	299,592.00	299,592.00	24,966.00	100%
4175	Electric	69,261.90	79,533.37	80,000.00	73,276.87	3,390.45	92%
4176	Utilities Misc	0.00	0.00	5,000.00	3,717.52	246.48	74%
4190	Bank Charges	24.35	24.00	60.00	176.00	8.00	0%
4200	Audit	2,200.00	2,300.00	2,400.00	2,400.00	0.00	100%
4220	Professional Service	1,200.00	0.00	0.00	0.00	0.00	0%
4240	Capital Purchases	0.00	0.00	152,000.00	145,247.00	57,404.00	96%
	Totals	592,500.98	482,548.76	729,686.25	694,316.96	91,702.80	95%
	**E/R Expenses	7,554.68	42,782.61	96,500.00	39,257.51	14,914.00	41%
	TOTAL EXPENSES	600,055.66	525,331.37	826,186.25	733,574.47	106,616.80	89%

**Equipment & Replacement

Rebuild Ducking Skimmer Arm	5,000.00		
Replace BOD & Ammonia probes	2,000.00	X	
Replace grit concetrator, volule & cart for pista	15,000.00	X	
Replace wooden doors	2,000.00		
Replace impellers for RAS pumps	7,500.00	X	
Replace LED parking lot light	10,000.00		X
Replace electric panel & pump	15,000.00		X
Replace electric panel in RAS	40,000.00		2020
	96,500.00		

*Maintenance & Repair

Auto Dialer Yrly Main. Fee	500.00
Effluent Testing for Permit Renewal	1,500.00
Normal Maintenance	8,000.00
UV Spare Parts	8,000.00
Road and parking lot main	4,000.00
#2 Aeration Basin repair valves lab testing	100,000.00
Sandblast & paint Clarifier #3 CARRYOVER 2018 $68,900	-
	-
	-
	122,000.00

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OPERATING FUND INCOME AND EXPENSE SUMMARY
12/31/2019

Beginning Balance	**304,947.23**
Income - Osage Beach	39,512.22
Income - Lake Ozark	6,321.11
Income - Other	-
Income - Waste Haulers' Fees	1,280.00
Interest - Checking	11.63
Income - CD Interest	183.05
Transfers From E/R Fund	-
Transfers to E/R Fund	(3,467.00)
Expenses	(88,235.80)
Ending Fund Balance	**260,552.44**
Central Bank - NOW Acct.	56,934.39
	-
CD First Bank of the Lake, 2/20/21 #101318432	103,807.68
CD Central Bank, 1/20 #151763	100,000.00
	-
Outstanding Checks:	(189.63)
	260,552.44

EQUIPMENT REPLACEMENT FUND INCOME AND EXPENSE SUMMARY
12/31/2019

Beginning Balance	**546,839.58**
Interest - Checking	115.70
Income - CD Interest	1,021.68
Transfers to E/R Fund	3,467.00
Income - Miscellaneous	-
Expenses	(16,937.00)
Ending Fund Balance	**534,506.96**
First Bank of the Lake - Money Mkt.	121,479.09
CD Providence Bank, 8/20 #1268880	207,553.78
CD First Bank of the Lake, 2/20/21 #101318431	101,942.14
CD First Bank of the Lake, 04/20 #101318430	103,531.95
	-
Outstanding Checks:	-
	534,506.96

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OUR MISSION

We partner with communities to deliver the finest water and wastewater services available at a competitive price. We are committed to keeping water safe and clean while serving people and taking care of communities with improved technical operations, careful management and financial oversight, and ensured regulatory compliance.

Alliance Water Resources, Inc.

206 S. Keene St.
Columbia, MO 65201

(573)874-8080

WATER RESOURCES®
Alliance
Professional Water and Wastewater Operations

REPORT OF OPERATIONS

LAKE OZARK/OSAGE BEACH
Joint Wastewater Treatment Plant No. 1

Month of December 2019

Submitted by Alliance Water Resources, Inc. for the

January 2020

Joint Sewer Board Meeting

SUMMARY OF FACILITY OPERATION

The Lake Ozark/Osage Beach Joint WWTP produced superior effluent quality throughout the month and was in full compliance with effluent limitations established in NPDES Permit No.MO-0103241. No leaks, no spills, and no unauthorized releases to waters of the state. No work related lost time accidents have occurred during the month.

Detailed information relating to plant performance and operations is presented as follows.

PLANT EFFLUENT QUALITY

	BOD mg/l	TSS mg/l	pH	E.coli Coliform Colonies/100 ml	Ammonia as N mg/L	O&G mg/L	Metals Selenium ug/L
Monthly Average	1.9	1.7	N/A	0	0.14	< 4.9	< 1.0
Peak Day	2.1	2.0	7.8	0	0.50	< 4.9	< 1.0
Percent Removal	99.1	99.1	N/A	N/A	N/A	N/A	N/A

NPDES EFFLUENT LIMITATIONS

	BOD mg/l	TSS mg/l	pH	E.coli Coliform Colonies/100 ml	Ammonia as N mg/L	O&G mg/L	Metals Selenium ug/ L
Monthly Average	30	30	6-9	126	2.2	10	3.6
Weekly Average	45	45		630			
Daily Max				N/A	11.5	15	9.1

PLANT HYDRAULIC AND ORGANIC LOADING

The average daily influent flow for the month was 1.235 MGD or 41% of Permitted flow with Lake Ozark contributing 12% of the total flow and Osage Beach contributing 88%. Daily influent flow BOD and TSS data is presented in Table A. Daily flow for the month and rainfall are shown in Figure 2. A three-year flow history for each of the two cities is presented in Table B.

Organic loading for the month was 66011 pounds of BOD.

BIOSOLIDS APPLICATION AND INVENTORY

Plant personnel land applied 17 tanker loads of bio-solids during the month equivalent to a total of 62,900 gallons and 20,643 pounds dry weight solids.

416,951 pounds of dry weight solids have been land applied year to date.

Bio-solids inventory in the storage tanks at the end of the month was 360,000 gallons with a level of 6.0 feet in Tank 1 and 2.0 feet in Tank 2.

WASTEHAULERS

The plant received 14 loads of septage during the month totaling 32,000 gallons.

WWTP OPERATIONS

- Decanting digesters and wasting weekly.
- Normal operations.
- The new generator start up was on the 3rd of December and everything went well.

WWTP MAINTENANCE AND REPAIR

- Performed routine maintenance throughout the month as per Antero Maintenance Data Management schedule. (New version of Operator 10 Software)
- We started having trouble with the ammonia meter that was purchased in 2004 on 11th of November and contacted Hach tech support and troubleshot it with them and was told it needed replaced. We contacted the Joint Sewer Board reps for approval and ordered a replacement on the 25th of November and received it on the 12th of December.
- Flynn Drilling was here and removed the old potable well pump & tanks on the 4th and installed the new pump, tank and controls on the 5th of December. They had to come back a couple more times to do some finishing touches and is working great now.
- We started having problems with the portable LDO probe that was purchased in 2015 on the 4th of December. We called Hach tech support and troubleshot it with them and they determined that the probe needed replaced. We contacted the Joint Sewer Board reps and received approval to purchase a replacement that same day and received it on 11th of December.
- JCI finally found a seal for the flygt lift station pump that they gave us a bid on in October to make one good pump out of two and received it back on the 19th of December.
- We came in on Christmas morning and found the furnace in the headworks/lab building had quit. We called Controlled Heating and Cooling and they came out on the 26th and found the blower motor had gone bad and installed a temporary motor until they could get one in. The replacement blower motor came in on the 27th of December and got it back in service that day.

SAFETY

- We conducted our monthly routine Safety Meeting on Hazard Communication & Vehicle Safety on the 12th of December.

REGULATORY AGENCY, INSPECTION AND REPORTS

- We filled out the EDMR on MDNR's website on the 3rd of January.

MISCELLANEOUS AND RECOMMENDATIONS

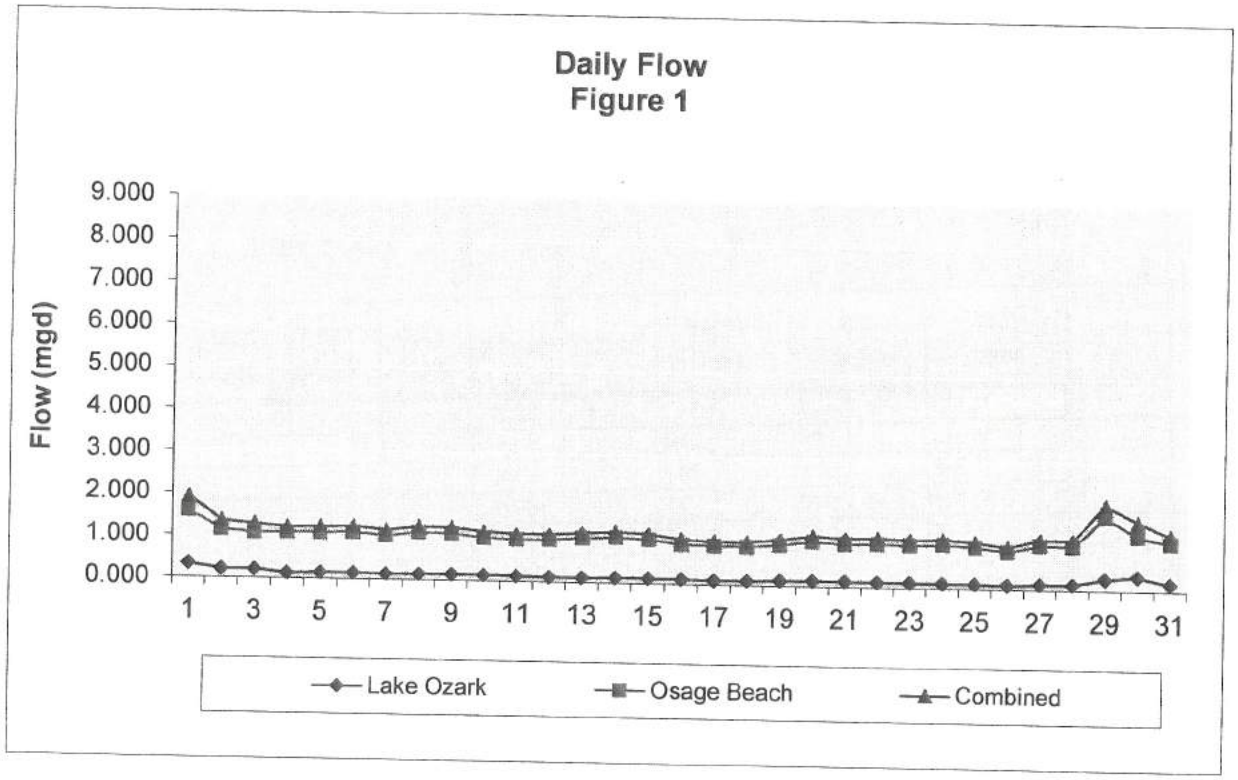
- Attached are copies of the updated 2020 Emergency Response Plan (ERP) & 2020 Plant Inventory list.

TABLE A
LAKE OZARK/OSAGE BEACH WWTP

MONTH OF December 2019

DATE		FLOW					BOD 5 MG/L			TSS MG/L		
	RAIN FALL IN.	LO mgd	OB mgd	COMB mgd	% LO	% OB	LO mg/l	OB mg/l	COMB mg/l	LO mg/l	OB mg/l	COMB mg/l
1-Dec	**0**	**0.333**	**1.579**	**1.912**	**17.4**	**82.6**						
2-Dec	0	0.210	1.140	1.350	15.6	84.4						
3-Dec	0	0.208	1.079	1.287	16.2	83.8						
4-Dec	0	0.123	1.090	1.213	10.1	89.9						
5-Dec	0	0.148	1.087	1.235	12.0	88.0						
6-Dec	0	0.146	1.106	1.252	11.7	88.3	160	175	163	102	100	148
7-Dec	**0**	**0.132**	**1.042**	**1.174**	**11.2**	**88.8**						
8-Dec	**0**	**0.144**	**1.118**	**1.262**	**11.4**	**88.6**						
9-Dec	0	0.150	1.102	1.252	12.0	88.0						
10-Dec	0	0.141	1.021	1.162	12.1	87.9						
11-Dec	0	0.123	0.995	1.118	11.0	89.0						
12-Dec	0	0.114	1.002	1.116	10.2	89.8						
13-Dec	0	0.115	1.048	1.163	9.9	90.1	165	235	173	122	140	174
14-Dec	**0**	**0.123**	**1.084**	**1.207**	**10.2**	**89.8**						
15-Dec	**0.0**	**0.124**	**1.046**	**1.170**	**10.6**	**89.4**						
16-Dec	0.3	0.118	0.942	1.060	11.1	88.9						
17-Dec	0.2	0.100	0.919	1.019	9.8	90.2						
18-Dec	0	0.114	0.912	1.026	11.1	88.9	178	310	288	122	238	280
19-Dec	0	0.123	0.967	1.090	11.3	88.7						
20-Dec	0	0.131	1.060	1.191	11.0	89.0						
21-Dec	**0**	**0.131**	**1.019**	**1.150**	**11.4**	**88.6**						
22-Dec	**0**	**0.130**	**1.031**	**1.161**	**11.2**	**88.8**						
23-Dec	0	0.123	1.009	1.132	10.9	89.1						
24-Dec	0	0.121	1.037	1.158	10.4	89.6						
25-Dec	0	0.120	0.986	1.106	10.8	89.2						
26-Dec	0	0.102	0.895	0.997	10.2	89.8						
27-Dec	0	0.131	1.052	1.183	11.1	88.9	253	205	203	142	160	192
28-Dec	**0**	**0.139**	**1.039**	**1.178**	**11.8**	**88.2**						
29-Dec	**1.3**	**0.277**	**1.745**	**2.022**	**13.7**	**86.3**						
30-Dec	0	0.339	1.291	1.630	20.8	79.2						
31-Dec	0	0.175	1.132	1.307	13.4	86.6						
SUM	1.8	4.708	33.575	38.283								
AVG		0.152	1.083	1.235	12	88	189	231	207	122	160	199

NOTE: BOLD PRINT INDICATES WEEKEND DAYS


Daily Flow
Figure 1
Flow (mgd)
9.000
8.000
7.000
6.000
5.000
4.000
3.000
2.000
1.000
0.000
1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31
Lake Ozark
Osage Beach
Combined

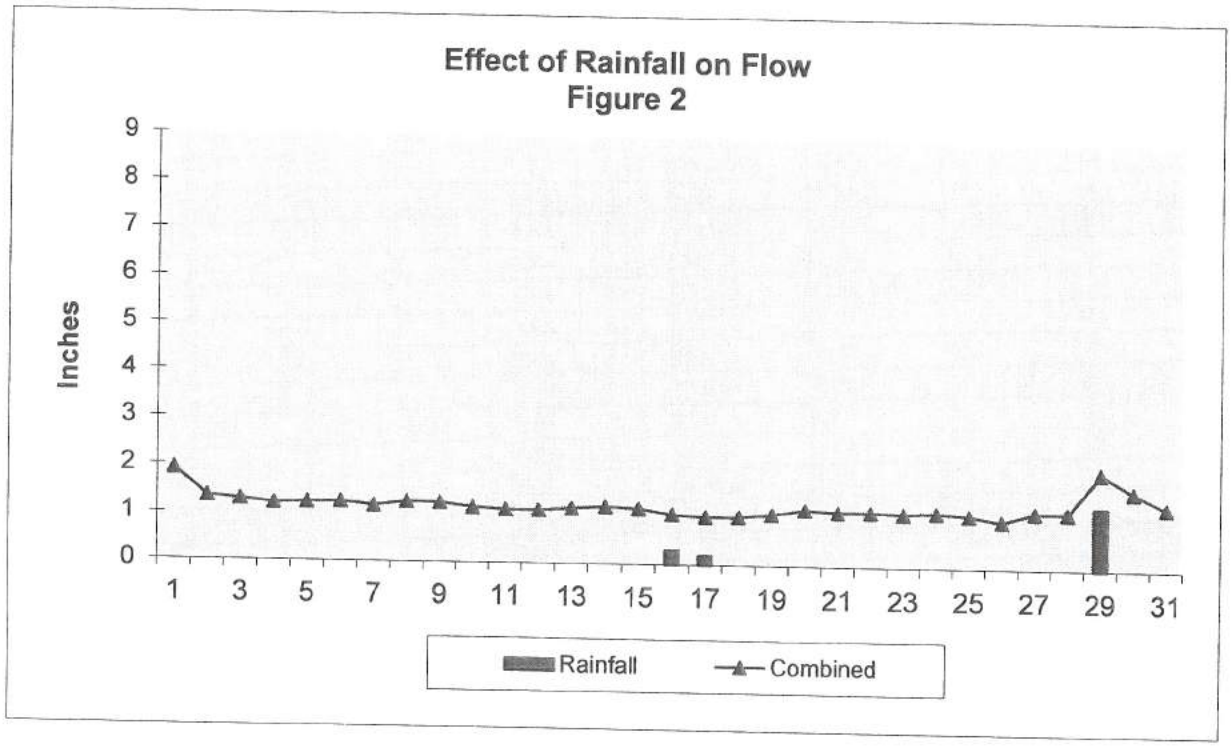

Effect of Rainfall on Flow
Figure 2
Inches
9
8
7
6
5
4
3
2
1
0
1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31
Rainfall
Combined

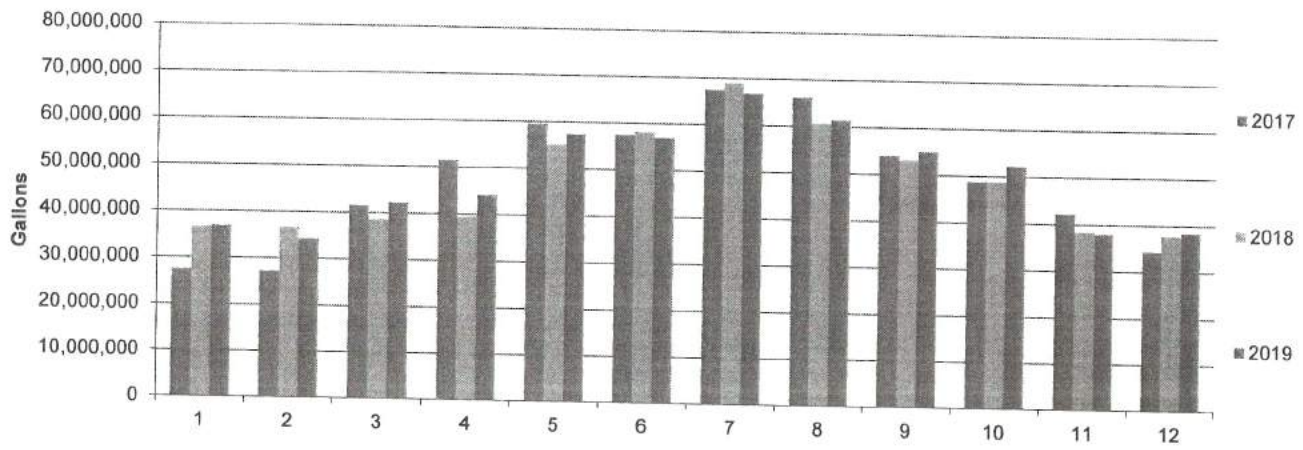
TABLE B
JOINT SEWER BOARD
Monthly Flows

2017	RAINFALL	OSAGE BEACH		LAKE OZARK		TOTAL	%
January	2.5	23,440,000	86%	3,909,000	14%	27,349,000	100%
February	0.7	23,345,000	86%	3,812,000	14%	27,157,000	100%
March	3.8	36,554,000	88%	4,844,000	12%	41,398,000	100%
April	9.8	44,665,000	87%	6,723,000	13%	51,388,000	100%
May	8.1	51,527,000	87%	7,979,000	13%	59,506,000	100%
June	2.9	50,926,000	88%	6,618,000	12%	57,544,000	100%
July	5.2	59,347,000	88%	8,092,000	12%	67,439,000	100%
August	12.4	57,736,000	87%	8,409,000	13%	66,145,000	100%
September	1.5	47,096,000	87%	6,866,000	13%	53,962,000	100%
October	7.4	42,489,000	87%	6,332,000	13%	48,821,000	100%
November	0.5	37,947,000	90%	4,244,000	10%	42,191,000	100%
December	0.9	30,459,000	89%	3,808,000	11%	34,267,000	100%
	55.6	505,531,000	88%	71,636,000	12%	577,167,000	100%

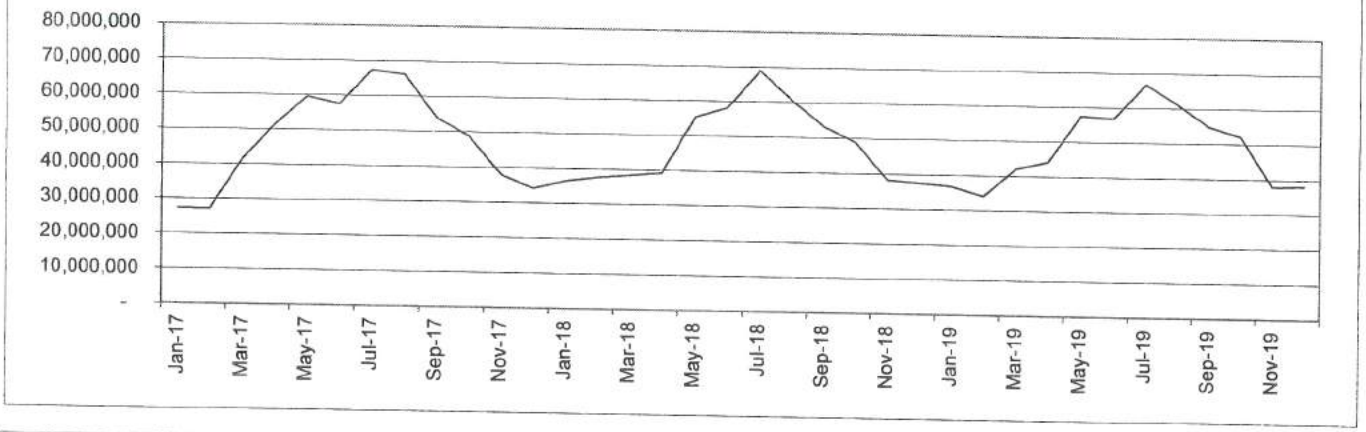
2018	RAINFALL	OSAGE BEACH		LAKE OZARK		TOTAL	%
January	2.8	32,190,000	88%	4,345,000	12%	36,535,000	100%
February	5.4	31,846,000	87%	4,861,000	13%	36,707,000	100%
March	3.2	33,424,000	87%	5,010,000	13%	38,434,000	100%
April	1.9	34,339,000	88%	4,896,000	12%	39,235,000	100%
May	5.4	47,620,000	86%	7,610,000	14%	55,230,000	100%
June	3.2	51,063,000	88%	7,125,000	12%	58,188,000	100%
July	2.7	60,484,000	88%	8,550,000	12%	69,034,000	100%
August	6.9	52,916,000	87%	7,679,000	13%	60,595,000	100%
September	3.4	46,228,000	87%	7,013,000	13%	53,241,000	100%
October	7.5	42,037,000	86%	6,738,000	14%	48,775,000	100%
November	3.6	33,221,000	87%	5,089,000	13%	38,310,000	100%
December	6.3	32,452,000	86%	5,123,000	14%	37,575,000	100%
	52.3	497,820,000	87%	74,039,000	13%	571,859,000	100%

2019	RAINFALL	OSAGE BEACH		LAKE OZARK		TOTAL	%
January	2.1	32,085,000	87%	4,708,000	13%	36,793,000	100%
February	4.4	29,492,000	86%	4,650,000	14%	34,142,000	100%
March	6.3	36,210,000	86%	5,876,000	14%	42,086,000	100%
April	4.1	37,991,000	86%	6,135,000	14%	44,126,000	100%
May	9.9	49,124,000	85%	8,333,000	15%	57,457,000	100%
June	6.0	49,051,000	86%	7,864,000	14%	56,915,000	100%
July	4.8	57,666,000	86%	9,132,000	14%	66,798,000	100%
August	6.0	53,074,000	87%	8,215,000	13%	61,289,000	100%
September	3.5	47,732,000	87%	7,165,000	13%	54,897,000	100%
October	11.1	44,971,000	86%	7,194,000	14%	52,165,000	100%
November	3.5	33,141,000	87%	4,779,000	13%	37,920,000	100%
December	1.8	33,575,000	88%	4,708,000	12%	38,283,000	100%
	63.2	504,112,000	86%	78,759,000	13%	582,871,000	100%

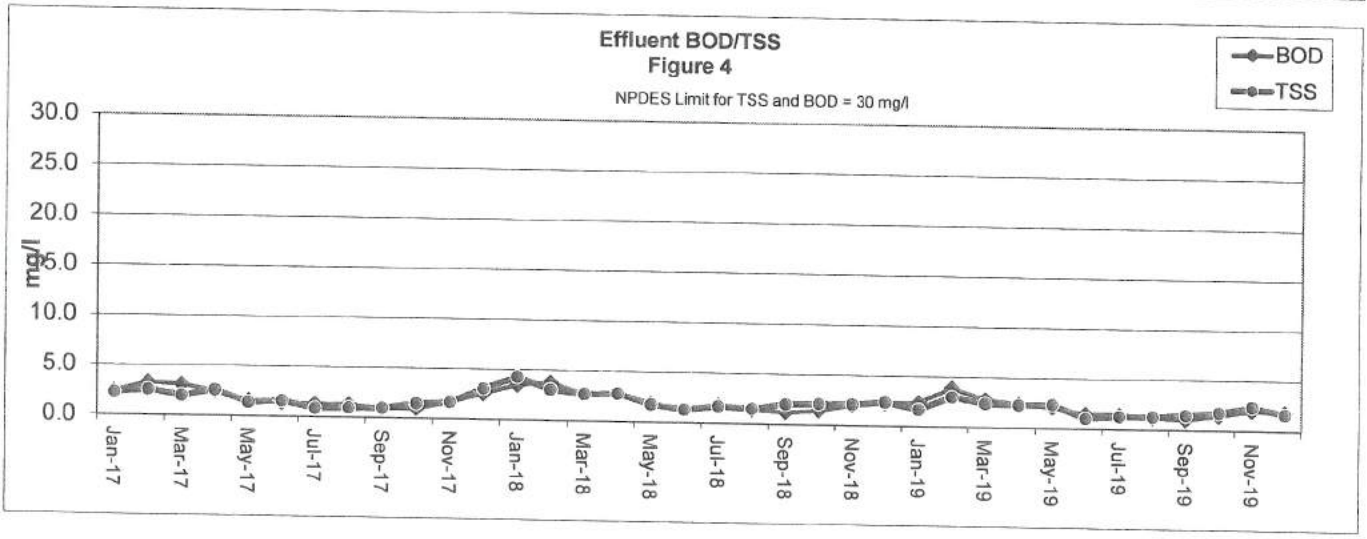
Monthly Influent Flow
Figure 3A



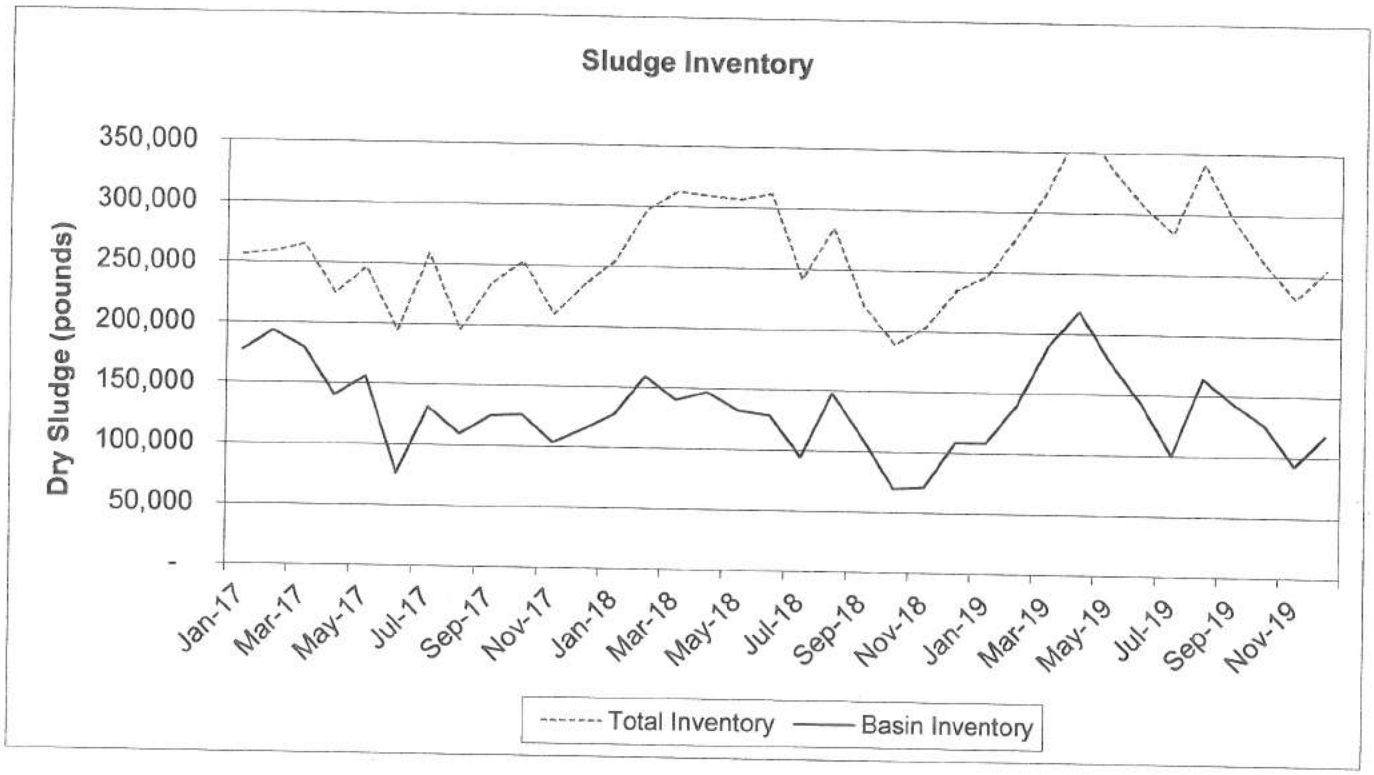
Monthly Influent Flow
Figure 3B

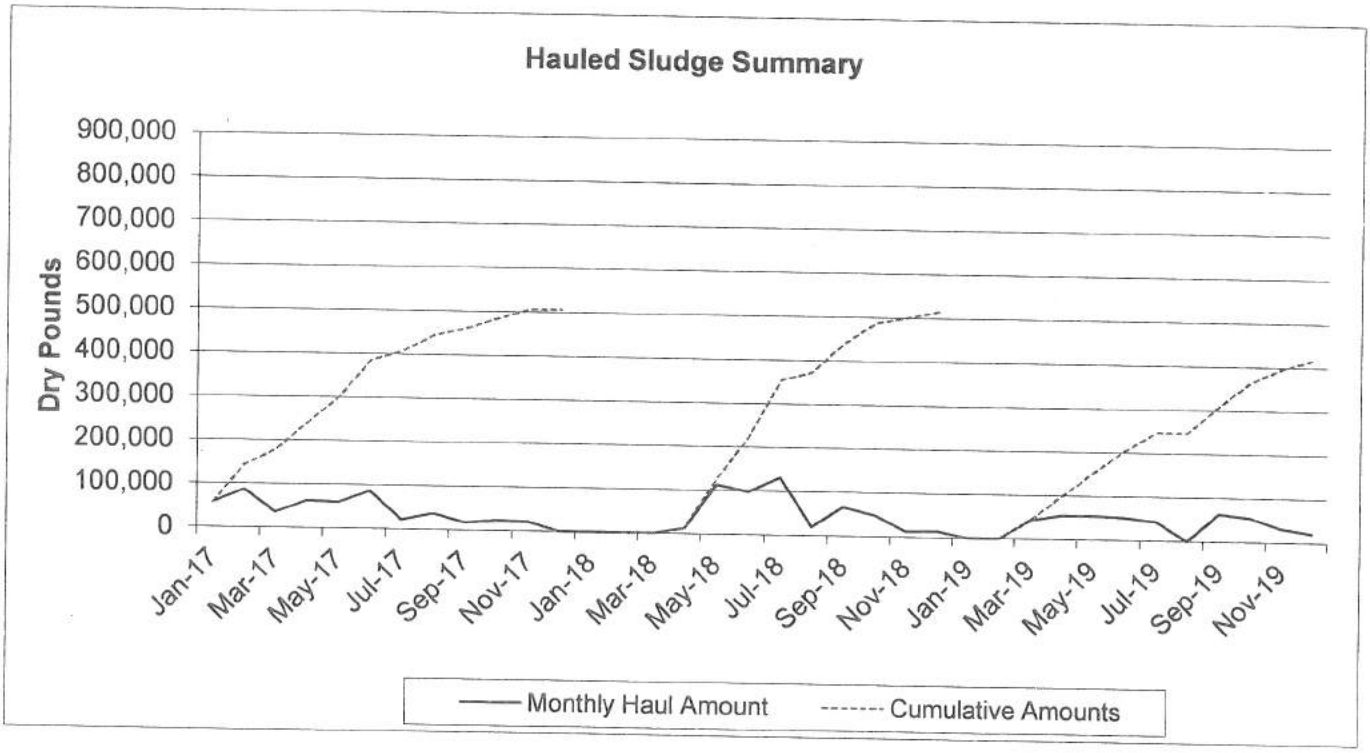


Effluent BOD/TSS
Figure 4



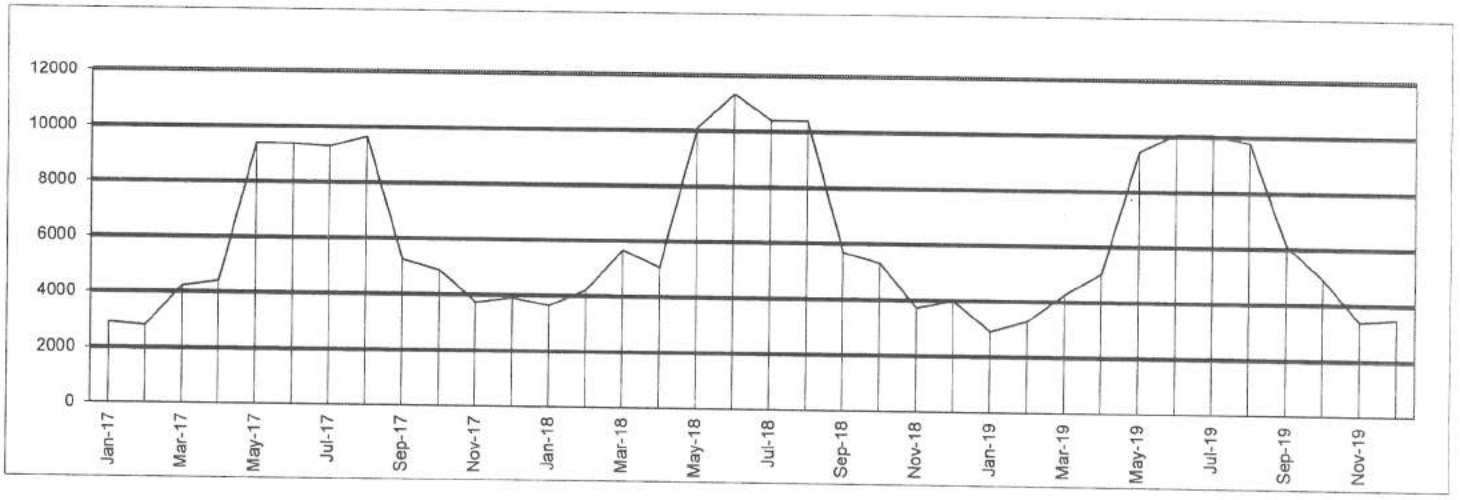
	Hauled Sludge					Basin Depths					Blanket Depths			MLSS Inventory		Blanket and MLSS Inventory		MLSS	Total Dry	Accepted Septage	
	Loads	Gallons	# Dry	% Solids	Annual Cumulative # Dry	Tank #1	Tank #2	AB #1	Basin Gallons	# Dry	Clarf #1	Clarf #2	Clarf #3	MLSS AB #1	MLSS AB #2	Gallons	# Dry	% Solids	Sludge Inventory	Loads	Gallons
Jan-17	47	173,000	56,748	3.9%	56,748	6.0	6.0	0.0	540,000	177,132	1.0	0.0	1.0	-	5,080	1,861,190	78,853	0.00508	255,986	15	37,500
Feb-17	68	251,600	86,649	4.1%	143,397	5.5	7.0	0.0	562,500	193,720	1.5	0.0	2.0	-	4,090	1,913,499	65,271	0.00409	258,991	5	12,500
Mar-17	33	122,100	34,808	3.4%	178,205	7.5	6.5	0.0	630,000	179,599	3.0	0.0	1.0	-	5,400	1,898,714	85,420	0.0054	265,019	41	102,500
Apr-17	59	218,300	61,994	3.4%	240,199	6.5	4.5	0.0	495,000	140,573	8.0	10.0	1.5	-	4,630	2,184,858	84,367	0.00463	224,939	8	20,000
May-17	51	188,700	59,556	3.8%	299,755	7.0	4.0	0.0	495,000	156,228	1.0	1.5	0.5	3,420	2,480	3,666,119	90,198	0.00295	246,426	45	116,000
Jun-17	75	277,500	85,724	3.7%	385,479	2.5	3.0	0.0	247,500	76,457	3.0	2.5	1.5	4,530	3,000	3,762,833	118,153	0.00377	194,610	33	82,500
Jul-17	20	74,000	21,631	3.5%	407,110	4.5	5.5	0.0	450,000	131,540	1.0	1.0	0.5	4,670	3,650	3,657,238	126,886	0.00416	258,426	43	107,500
Aug-17	39	144,300	37,030	3.1%	444,140	5.0	4.5	0.0	427,500	109,704	1.0	0.5	1.0	2,910	2,740	3,670,071	86,469	0.00283	196,173	41	103,500
Sep-17	16	59,200	17,311	3.5%	461,451	6.0	3.5	0.0	427,500	125,008	0.5	1.0	1.0	3,880	3,300	3,670,071	109,884	0.00359	234,892	48	122,000
Oct-17	20	74,000	23,051	3.7%	484,502	8.0	1.0	0.0	405,000	126,158	0.5	1.0	1.0	4,520	3,780	3,670,071	127,025	0.00415	253,182	10	23,500
Nov-17	20	74,000	21,292	3.4%	505,794	4.5	3.5	0.0	360,000	103,583	1.0	1.5	0.5	2,890	4,060	3,666,119	106,250	0.00348	209,832	7	17,500
Dec-17	0	-	0	3.4%	505,794	6.0	3.0	0.0	405,000	114,842	1.0	1.5	1.0	3,680	4,120	3,687,833	119,950	0.0039	234,792	7	17,500
Jan-18	0	-	0	3.4%		5.5	4.5	0.0	450,000	127,602	0.5	1.0	0.0	4,390	4,040	3,626,643	127,488	0.00422	255,090	5	12,500
Feb-18	0	-	0	3.4%	-	7.5	5.0	0.0	562,500	159,503	2.0	4.0	1.0	4,880	3,920	3,750,000	137,610	0.0044	297,113	16	40,000
Mar-18	0	-	0	3.4%	-	5.5	5.5	0.0	495,000	140,362	0.5	0.5	0.5	5,580	5,780	3,639,476	172,406	0.00568	312,769	6	15,000
Apr-18	11	40,700	12,096	3.6%	12,096	5.0	6.0	0.0	495,000	147,114	0.5	0.5	0.5	5,670	5,040	3,639,476	162,542	0.00536	309,655	8	20,000
May-18	93	344,100	112,693	3.9%	124,789	4.5	4.5	0.0	405,000	132,638	0.5	0.5	0.5	5,963	5,547	3,639,476	174,683	0.00576	307,321	10	24,500
Jun-18	88	325,000	97,758	3.6%	222,547	4.0	5.5	0.0	427,500	128,589	4.0	3.0	1.0	6,190	5,490	3,767,762	183,511	0.00584	312,100	38	95,000
Jul-18	126	466,200	131,023	3.4%	353,570	3.0	4.5	0.0	337,500	94,853	1.0	0.5	1.5	4,570	4,990	3,691,785	147,174	0.00478	242,026	42	107,000
Aug-18	12	44,400	19,441	5.3%	373,011	5.0	2.5	0.0	337,500	147,778	2.5	1.0	1.0	4,680	4,170	3,705,595	136,753	0.00443	284,531	30	75,000
Sep-18	51	188,700	66,098	4.2%	439,109	4.5	2.5	0.0	315,000	110,338	0.5	1.0	0.0	3,920	3,340	3,626,643	109,794	0.00363	220,132	45	113,500
Oct-18	38	140,600	48,447	4.1%	487,556	3.0	1.5	0.0	202,500	69,776	0.5	0.5	0.0	4,290	3,640	3,617,762	119,633	0.00397	189,409	21	59,500
Nov-18	11	40,700	12,899	3.8%	500,455	2.5	2.5	0.0	225,000	71,309	1.0	1.0	0.0	4,100	4,640	3,635,524	132,500	0.00437	203,809	8	21,500
Dec-18	14	51,800	14,688	3.4%	515,143	6.5	2.0	0.0	382,500	108,459	11.0	12.0	0.0	4,120	3,420	4,008,526	126,035	0.00377	234,494	22	55,000
Jan-19	0	-	0	3.4%		5.0	3.5	0.0	382,500	108,462	1.0	1.0	0.0	4,650	4,480	3,635,524	138,412	0.00457	246,874	19	46,500
Feb-19	0	-	0	3.4%	-	6.0	5.0	0.0	495,000	140,362	1.0	1.0	0.0	4,570	4,740	3,635,524	141,141	0.00466	281,503	31	79,500
Mar-19	36	133,200	43,139	3.9%	43,139	6.0	7.0	0.0	585,000	189,462	0.5	1.0	0.0	4,780	3,920	3,626,643	131,571	0.00435	321,033	9	21,500
Apr-19	39	144,300	53,940	4.5%	97,079	5.5	7.5	0.0	585,000	218,676	1.5	0.5	1.0	5,720	4,530	3,678,952	157,248	0.00513	375,923	23	61,500
May-19	49	181,300	54,866	3.6%	151,945	8.0	5.0	0.0	585,000	177,036	3.0	1.5	1.0	5,150	5,160	3,723,357	160,077	0.00516	337,113	12	25,500
Jun-19	44	162,800	51,872	3.8%	203,817	7.0	3.0	0.0	450,000	143,381	2.0	4.0	1.5	5,610	4,810	3,771,714	163,886	0.00521	307,267	19	47,500
Jul-19	37	136,900	43,633	3.8%	247,450	3.0	4.0	0.0	315,000	100,397	2.0	3.0	0.5	6,060	5,830	3,710,524	183,973	0.00595	284,370	36	84,000
Aug-19	0	-	0	3.8%	247,450	5.5	6.0	0.0	517,500	164,006	5.0	3.0	0.5	5,660	5,680	3,763,810	177,982	0.00567	341,988	29	72,500
Sep-19	58	214,600	62,487	3.5%	309,937	7.0	4.0	0.0	495,000	144,134	2.0	1.0	1.0	4,460	5,310	3,696,714	150,607	0.00489	294,741	22	55,000
Oct-19	50	185,000	54,742	3.5%	364,679	7.5	2.0	0.0	427,500	126,498	2.5	3.0	1.0	4,170	4,350	3,741,119	132,916	0.00426	259,414	40	97,000
Nov-19	29	107,300	31,629	3.5%	396,308	3.5	3.5	0.0	315,000	92,853	3.5	5.0	0.0	4,980	3,850	3,750,977	138,115	0.00442	230,968	15	36,000
Dec-19	29	62,900	20,643	3.9%	416,951	6.0	2.0	0.0	360,000	118,148	1.0	1.0	0.0	5,090	3,940	3,635,524	136,896	0.00452	255,044	14	32,000


Sludge Inventory
Dry Sludge (pounds)
350,000
300,000
250,000
200,000
150,000
100,000
50,000
-
Jan-17
Mar-17
May-17
Jul-17
Sep-17
Nov-17
Jan-18
Mar-18
May-18
Jul-18
Sep-18
Nov-18
Jan-19
Mar-19
May-19
Jul-19
Sep-19
Nov-19
Total Inventory
Basin Inventory

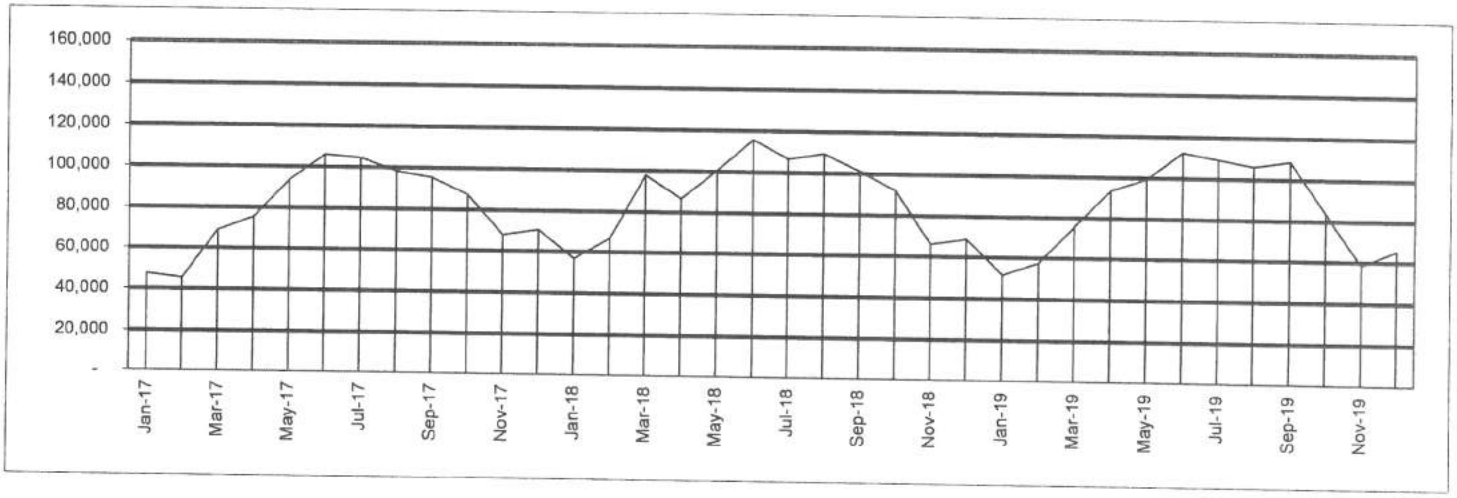

Hauled Sludge Summary
Dry Pounds
900,000
800,000
700,000
600,000
500,000
400,000
300,000
200,000
100,000
0
Jan-17
Mar-17
May-17
Jul-17
Sep-17
Nov-17
Jan-18
Mar-18
May-18
Jul-18
Sep-18
Nov-18
Jan-19
Mar-19
May-19
Jul-19
Sep-19
Nov-19
Monthly Haul Amount
Cumulative Amounts

	Electric Cost	Kilowatts Used
Jan-17	2904	47,480
Feb-17	2796	45,240
Mar-17	4233	69,210
Apr-17	4411	75,480
May-17	9413	93,494
Jun-17	9388	106,070
Jul-17	9310	104,700
Aug-17	9666	98,220
Sep-17	5246	95,470
Oct-17	4874	87,240
Nov-17	3738	68,100
Dec-17	3909	70,820
Jan-18	3640	56,750
Feb-18	4207	66,930
Mar-18	5667	98,010
Apr-18	5060	86,650
May-18	10116	100,520
Jun-18	11336	115,750
Jul-18	10417	106,550
Aug-18	10400	109,290
Sep-18	5685	101,170
Oct-18	5317	92,210
Nov-18	3731	66,280
Dec-18	3990	68,840
Jan-19	2926	51,490
Feb-19	3295	57,450
Mar-19	4251	75,830
Apr-19	5014	93,570
May-19	9452	99,330
Jun-19	10074	112,400
Jul-19	10066	109,190
Aug-19	9784	106,020
Sep-19	6115	108,680
Oct-19	4920	83,790
Nov-19	3390	58,410
Dec-19	3482	65,660

Electric Cost



Kilowatts Used



MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY

Discharge Monitoring Report For Municipal Wastewater Treatment Plants

NAME OF FACILITY		LOCATION ADDRESS & CITY		COUNTY/REGION
Lake of the Ozarks Regional WWTP #1		#3 Anderson Road		Miller/SWRO
MONTH/YEAR	PERMIT NUMBER	OUTFALL NUMBER	TYPE TREATMENT FACILITY	
Dec-19	MO-0103241	#001	Oxidation Ditch/UV/Sludge Holding-sludge is land applied	

	INFLUENT				EFFLUENT								% Removal	
DATE	pH UNITS	BOD mg/L	TSS mg/L	TEMP °C	FLOW MGD	pH UNITS	BOD mg/L	TSS mg/L	Ammonia as N mg/l	DO mg/L	E. coli COLFRM #/100 ML	TEMP °C	BOD mg/L	TSS mg/L
1	7.0			12.9	2.369	7.4				6.4		12.2		
2	7.3			12.3	1.782	7.5				7.1		11.5		
3	6.9			13.5	1.676	7.4				6.8		10.7		
4	7.2			13.3	1.745	7.6				6.6		11.2		
5	6.5			13.0	1.709	7.4			0.01	6.8		11.1		
6	6.7	163	148	13.6	1.614	7.3	1.8	1.5		6.2		11.7	98.9	99.0
7	6.8			12.7	1.504	7.5				6.5		10.6		
8	6.8			13.4	1.697	7.5				5.6		10.8		
9	6.5			14.1	1.600	7.4				5.3		12.1		
10	7.0			12.9	1.549	7.4				5.7		10.4		
11	7.0			12.6	1.578	7.6				6.2		10.1		
12	6.6			13.7	1.618	7.5			0.50	6.4		10.4		
13	7.2	173	174	11.8	1.456	7.4	2.0	1.8		6.1		10.0	98.8	99.0
14	6.9			12.8	1.543	7.3				5.8		10.1		
15	7.1			12.5	1.611	7.8				6.7		9.3		
16	7.2			11.7	1.509	7.5				6.3		8.8		
17	6.7			11.6	1.466	7.5			0.03	6.9		8.3		
18	6.7	288	280	11.8	1.515	7.3	1.8	2.0		6.8		8.5	99.4	99.3
19	6.9			11.4	1.564	7.6				6.9		8.6		
20	6.9			11.9	1.536	7.5				6.3		9.0		
21	7.0			12.5	1.596	7.5				6.2		8.9		
22	7.0			11.7	1.550	7.6				6.2		9.4		
23	6.8			12.0	1.517	7.6				6.2		9.7		
24	7.0			11.1	1.492	7.6				6.1		9.1		
25	7.1			11.3	1.459	7.7				6.4		9.5		
26	6.7			12.3	1.289	7.5			0.02	6.7		10.8		
27	6.8	203	192	11.5	1.522	7.5	2.1	1.5		5.9		10.6	99.0	99.2
28	7.2			13.3	1.537	7.4				5.4		11.9		
29	7.1			13.2	2.504	7.4				4.6		12.8		
30	7.0			11.7	1.993	7.4				5.6		11.2		
31	7.1			10.8	1.714	7.6				6.7		9.9		
Total					50.814									
Avg		207	199	12	1.639		1.9	1.7	0.14	6.2	0.0	10.3	99.0	99.1
Min	6.5	163	148	11	1.289	7.3	1.8	1.5	0.01	4.6	0.0	8.3	98.8	99.0
Max	7.3	288	280	14	2.504	7.8	2.1	2.0	0.50	7.1	0.0	12.8	99.4	99.3

MONTHLY MONITORING					QUARTERLY MONITORING					
DATE	Oil & Grease mg/L	Selenium µg/L	SM1 Hardness mg/L	SM2 Hardness mg/L	Phosphorus mg/L	SM1 Phosphorus mg/L	T. Nitrogen mg/L	SM1 T. Nitrogen mg/L	TR. Cadmium ug/L	TR. Copper µg/L
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12	< 4.9	< 1.0	278	308						
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
31										
Total	< 4.9	< 1.0	278	308						
Avg	< 4.9	< 1.0	278	308						
Min	< 4.9	< 1.0	278	308						
Max	< 4.9	< 1.0	278	308						

OPERATIONAL CONTROLS/LABORATORY TEST REQUIRED FOR "ACTIVATED SLUDGE" PROCESSES

DATE	SLUDGE DISP. LBS. DRY WEIGHT	#1 Aeration Basin, O-Ditch, Etc. MIXED LIQUOR				#2 Aeration Basin, O-Ditch, Etc. MIXED LIQUOR				*Weather Condition		
		* DO	** MLSS	*Settleability		* DO	** MLSS	*Settleability		Outside * Ambient	*RAIN	Time
				*30 min	Temp			*30 min	Temp	Temp		
		mg/l	mg/l	ml	° C	mg/l	mg/l	ml	° C	° F	inches	
1		2.6	2,720	360	11.8	2.6	3,500	580	12.0	40	0	7:30
2		5.8	3,690	580	10.8	2.8	4,680	840	11.3	35	0	7:30
3		2.3	3,290	410	11.2	2.6	3,300	540	11.3	31	0	7:30
4		4.3	4,470	710	11.2	4.3	3,890	630	11.7	34	0	7:30
5		2.7	4,780	800	11.1	4.0	3,970	650	11.8	34	0	7:30
6		3.5	5,040	800	11.9	3.8	4,150	650	12.2	42	0	7:30
7		2.2	4,940	800	10.9	3.9	4,280	670	11.0	28	0	7:30
8		1.9	4,490	740	11.3	2.7	4,750	760	11.5	38	0	7:30
9		1.1	4,150	550	12.5	1.0	5,170	800	12.5	52	0	7:30
10		3.2	4,040	600	10.9	1.1	5,550	850	11.1	28	0	7:30
11	7,220	3.1	4,620	790	10.1	1.8	4,890	820	10.6	27	0	7:30
12	7,406	2.2	5,360	840	10.6	3.1	4,360	700	11.0	43	0	7:30
13	6,017	1.1	5,100	820	10.1	2.1	4,540	820	10.1	38	0	7:30
14		1.5	5,060	860	10.3	3.4	4,400	800	10.4	39	0	7:30
15		2.1	5,120	820	9.4	4.1	4,590	820	9.5	33	0	7:30
16		2.4	4,860	850	8.8	3.7	4,860	850	8.4	29	0.3	7:30
17		3.5	4,630	810	8.6	4.1	4,770	820	8.7	22	0.2	7:30
18		3.7	5,110	840	9.4	4.2	4,540	840	8.9	30	0	7:30
19		3.2	5,090	840	9.2	3.7	4,620	840	9.0	27	0	7:30
20		2.8	5,050	840	9.2	4.3	4,410	740	9.9	31	0	7:30
21		2.5	5,310	850	9.7	3.9	4,190	730	9.7	32	0	7:30
22		2.5	5,330	870	10.1	3.9	4,130	710	9.7	30	0	7:30
23		1.2	5,660	850	9.7	4.4	4,150	730	10.1	31	0	7:30
24		1.3	5,090	820	9.7	4.5	4,080	720	9.4	32	0	7:30
25		1.9	4,720	760	10.3	4.7	4,670	820	10.4	39	0	7:30
26		2.7	4,340	650	11.4	3.0	4,930	800	11.6	46	0	7:30
27		2.8	4,180	670	11.0	3.0	5,100	830	11.0	39	0	7:30
28		1.7	4,430	740	12.1	2.2	4,810	810	11.9	53	0	7:30
29		1.0	4,380	720	12.7	1.1	4,480	750	12.7	51	1.3	7:30
30		1.0	5,040	830	11.1	2.1	4,420	720	11.1	37	0	7:30
31		2.3	5,090	850	9.7	4.6	3,940	720	9.9	33	0	7:30

COMMENTS:

TESTS PERFORMED BY (PRINT)	SIGNATURE	PHONE #	DATE
John Hornback	John Hornback	(573)365-0455	1/3/2020
REPORT APPROVED BY (PRINT)	SIGNATURE	PHONE #	DATE
Gary Hutchcraft	Gary Hutchcraft	(573)365-0455	1/3/2020

*Required Daily (Monday -/Friday)

**Required 1/week

State of Missouri
Department of Natural Resources
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

PERMITTEE NAME/ADDRESS

Dep. of Natural Resources
(REGIONAL OFFICE)
Southwest Regional Office
2040 W. Woodland
Springfield, MO 65807-5912
4178914300
4178914399 (fax)

NAME: Lake of the Ozarks Regional WWTP 1
ADDRESS: #3 Anderson Road
LAKE OZARK , MO 65049

MO0103241	001 A
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	12	01	TO	2019	12	31

NOTE: READ PERMIT AND GENERAL INSTRUCTIONS BEFORE COMPLETING THIS FORM.

Parameter		MASS		Unit	CONCENTRATION			Unit	FREQUENCY OF ANALYSIS	SAMPLE TYPE	LAB CODE
BOD, 5-day, 20 deg. C (00310)	REPORTD	*****	*****		*****	2.1	1.9	mg/L	Weekly	24 Hour Composite	
Stage Type: End of Pipe	REQRMNT	*****	*****		*****	Weekly Average : 45	Monthly Average : 30		Weekly	24 Hour Composite	
BOD, 5-day, percent removal (81010)	REPORTD	*****	*****		*****	*****	98.8	%	Monthly	Calculated	
Stage Type: End of Pipe	REQRMNT	*****	*****		*****	*****	Monthly Average Minimum : 85		Monthly	Calculated	
Flow, in conduit or thru treatment plant (50050)	REPORTD	2.504	1.639	Mgal/d	*****	*****	*****		Daily	Total Measured	
Stage Type: End of Pipe	REQRMNT	Daily Maximum : Monitoring Required	Monthly Average : Monitoring Required		*****	*****	*****		Daily	Total Measured	
Nitrogen, ammonia total (as N) (00610)	REPORTD	*****	*****		0.50	*****	0.14	mg/L	Weekly	Grab	
Stage Type: End of Pipe	REQRMNT	*****	*****		Daily Maximum : 11.5	*****	Monthly Average : 2.2		Weekly	Grab	
Oil and grease (soxhlet extr.) tot. (00550)	REPORTD	*****	*****		<4.9	*****	<4.9	mg/L	Monthly	Grab	
Stage Type: End of Pipe	REQRMNT	*****	*****		Daily Maximum : 15	*****	Monthly Average : 10		Monthly	Grab	
pH (00400)	REPORTD	*****	*****		7.3	*****	7.8	SU	Weekly	Grab	
Stage Type: End of Pipe	REQRMNT	*****	*****		Minimum : 6.5	*****	Maximum : 9.0		Weekly	Grab	
Selenium (Se), total recoverable (00981)	REPORTD	*****	*****		<1.0	*****	<1.0	ug/L	Monthly	Grab	
Stage Type: End of Pipe	REQRMNT	*****	*****		Daily Maximum : 9.1	*****	Monthly Average : 3.6		Monthly	Grab	

GENERAL PERMIT REQUIREMENTS OR COMMENTS:
OUTFALL-SPECIFIC COMMENTS::
PARAMETER-SPECIFIC COMMENTS:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

OPERATOR IN RESPONSIBLE CHARGE			
Gary Hutchcraft		7305	
TYPED OR PRINTED NAME		CERTIFICATE NUMBER	
PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT		TELEPHONE	5733650455
Gary F Hutchcraft	Gary F Hutchcraft		2020-01-03 09:55:25
TYPED OR PRINTED NAME	SIGNATURE		Date

State of Missouri
Department of Natural Resources
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

PERMITTEE NAME/ADDRESS

Dep. of Natural Resources
(REGIONAL OFFICE)
Southwest Regional Office
2040 W. Woodland
Springfield, MO 65807-5912
4178914300
4178914399 (fax)

NAME: Lake of the Ozarks Regional WWTP 1
ADDRESS: #3 Anderson Road
LAKE OZARK , MO 65049

MO0103241 | 001 A
PERMIT NUMBER | DISCHARGE NUMBER

MONITORING PERIOD
FROM 2019 12 01 TO 2019 12 31

NOTE: READ PERMIT AND GENERAL INSTRUCTIONS BEFORE COMPLETING THIS FORM

Parameter		MASS		Unit	CONCENTRATION			Unit	FREQUENCY OF ANALYSIS	SAMPLE TYPE	LAB CODE
Suspended Solids, percent removal (81011)	REPORTD	*****	*****		*****	*****	99.0	%	Monthly	Calculated	
Stage Type: End of Pipe	REQRMNT	*****	*****		*****	*****	Monthly Average Minimum : 85		Monthly	Calculated	
Total Suspended Solids (TSS) (00530)	REPORTD	*****	*****		*****	2.0	1.7	mg/L	Weekly	24 Hour Composite	
Stage Type: End of Pipe	REQRMNT	*****	*****		*****	Weekly Average : 45	Monthly Average : 30		Weekly	24 Hour Composite	

GENERAL PERMIT REQUIREMENTS OR COMMENTS:
OUTFALL-SPECIFIC COMMENTS::
PARAMETER-SPECIFIC COMMENTS:

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OPERATOR IN RESPONSIBLE CHARGE			
Gary Hutchcraft		7305	
TYPED OR PRINTED NAME		CERTIFICATE NUMBER	
PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT		TELEPHONE	5733650455
Gary F Hutchcraft	Gary F Hutchcraft		2020-01-03 09:55:25
TYPED OR PRINTED NAME	SIGNATURE		Date

PERMITTEE NAME/ADDRESS

State of Missouri
Department of Natural Resources
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Dep. of Natural Resources
(REGIONAL OFFICE)
Southwest Regional Office

2040 W. Woodland
Springfield, MO 65807-5912
4178914300
4178914399 (fax)

NAME: Lake of the Ozarks Regional WWTP 1
ADDRESS: #3 Anderson Road
LAKE OZARK , MO 65049

MO0103241	SM2 A
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	2019	12	01	TO	2019	12	31

NOTE: READ PERMIT AND GENERAL INSTRUCTIONS BEFORE COMPLETING THIS FORM.

Parameter		MASS		Unit	CONCENTRATION			Unit	FREQUENCY OF ANALYSIS	SAMPLE TYPE	LAB CODE
Hardness, total (as CaCO3) (00900)	REPORTD	*****	*****		308	*****	308	mg/L	Monthly	Grab	
Stage Type: Instream Monitoring	REQRMNT	*****	*****		Daily Maximum : Monitoring Required	*****	Monthly Average : Monitoring Required		Monthly	Grab	

GENERAL PERMIT REQUIREMENTS OR COMMENTS:
OUTFALL-SPECIFIC COMMENTS:
PARAMETER-SPECIFIC COMMENTS:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

OPERATOR IN RESPONSIBLE CHARGE			
Gary Hutchcraft		7305	
TYPED OR PRINTED NAME		CERTIFICATE NUMBER	
PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT		TELEPHONE	5733650455
Gary F Hutchcraft	Gary F Hutchcraft	2020-01-03 09:55:25	
TYPED OR PRINTED NAME	SIGNATURE	Date	

LAKE OZARK/OSAG WTP
Operation R

FOR DECEMBER (month) 2019 (year)

DATE	INITIAL	PLANT INFLUENT FLOW LO (mgd)	FLOW DB (mgd)	FLOW TOTAL (mgd)	BOD-LO (mg/l)	BOD-DB (mg/l)	BOD-TOTAL (mg/l)	TSS-LO (mg/l)	TSS-DB (mg/l)	TSS-TOTAL (mg/l)	AMMONIA as N	pH	TEMP C
1	JH	0.333	1.579	1.912								7.02	12.9
2	JH	0.210	1.140	1.350								7.30	12.3
3	GH/DS	0.208	1.079	1.287							17.7	6.90	13.5
4	JH/DS	0.123	1.090	1.213								7.24	13.3
5	JH/DS	0.148	1.087	1.235							27.9	6.54	13.0
6	JH/DS	0.146	1.106	1.252	160	175	163	102	100	148		6.69	13.6
7	JH/DS	0.132	1.042	1.174								6.75	12.7
8	JH/DS	0.144	1.118	1.262								6.77	13.4
9	GH/DS	0.150	1.102	1.252								6.53	14.1
10	JH/DS	0.141	1.021	1.162								6.96	12.9
11	GH/DS	0.123	0.995	1.118								7.04	12.6
12	JH/DS	0.114	1.002	1.116							28.1	6.58	13.7
13	JH	0.115	1.048	1.163	165	235	173	122	140	174		7.15	11.8
14	JH	0.123	1.084	1.207								6.92	12.8
15	JH	0.124	1.046	1.170								7.11	12.5
16	JH	0.118	0.942	1.060								7.23	11.7
17	JH/DS	0.100	0.919	1.019							37.8	6.67	11.6
18	JH/DS	0.114	0.912	1.026	178	310	288	122	238	280		6.65	11.8
19	JH/DS	0.123	0.967	1.090								6.90	11.4
20	JH/DS	0.131	1.060	1.191								6.86	11.9
21	GH/DS	0.131	1.019	1.150								6.97	12.5
22	GH/DS	0.130	1.031	1.161								6.95	11.7
23	GH/DS	0.123	1.009	1.132								6.83	12.0
24	GH/DS	0.121	1.037	1.158								7.04	11.1
25	GH/DS	0.120	0.986	1.106								7.14	11.3
26	JH/DS	0.102	0.895	0.997							24.6	6.67	12.3
27	JH/DS	0.131	1.052	1.183	253	205	203	142	160	192		6.75	11.5
28	JH	0.139	1.039	1.178								7.22	13.3
29	JH	0.277	1.745	2.022								7.14	13.2
30	JH	0.339	1.291	1.630								6.98	11.7
31	JH	0.175	1.132	1.307								7.12	10.8
TOTAL		4.708	33.575	38.283	756	925	827	488	638	794	136.1	214.6	384.9
MAX		0.339	1.745	2.084	253	310	288	142	238	280	37.8	7.3	14.1
MIN		0.100	0.895	0.995	160	175	163	102	100	148	17.7	6.53	10.8
AVG		0.152	1.083	1.235	189	231	207	122	160	199	27.2	6.92	12.4

DATE	ENVIRONMENTAL CONDITIONS WEATHER	PRECIPITATION (inches)	TEMPERATURE (degrees F)	OXIDATION DITCH NO. 1 MIXED LIQUOR SUSPENDED SOLIDS (mg/l)	SETTLOMETER	SVI	pH	DO (mg/l)	OXIDATION DITCH NO. 2 MIXED LIQUOR SUSPENDED SOLIDS (mg/l)	SETTLOMETER	SVI	pH	DO (mg/l)	CLARIFIER NO 1 DEPTH OF SLUDGE BLANKET (feet)	CLARIFIER NO 2 DEPTH OF SLUDGE BLANKET (feet)	CLARIFIER NO 3 DEPTH OF SLUDGE BLANKET (feet)
1	O	0	40	2,720	360	132	7.22	2.6	3,500	580	166	7.24	2.6	1.0	1.0	0
2	PC	0	35	3,690	580	157	7.35	5.8	4,680	840	179	7.33	2.8	1.0	2.5	0
3	C	0	31	3,290	410	125	7.04	2.3	3,300	540	164	7.03	2.6	1.0	1.0	0
4	C	0	34	4,470	710	159	7.45	4.3	3,890	630	162	7.41	4.3	2.0	2.5	0
5	O	0	34	4,780	800	167	6.91	2.7	3,970	650	164	6.81	4.0	3.5	2.5	0
6	O	0	42	5,040	800	159	6.97	3.5	4,150	650	157	6.94	3.8	1.0	1.0	0
7	C	0	28	4,940	800	162	7.11	2.2	4,280	670	157	7.46	3.9	2.0	2.0	0
8	C	0	38	4,490	740	165	7.22	1.9	4,750	760	160	7.10	2.7	2.0	2.5	0
9	O	0	52	4,150	550	133	7.22	1.1	5,170	800	155	6.90	1.0	2.0	5.0	0
10	PC	0	28	4,040	600	148	7.39	3.2	5,550	850	153	7.21	1.1	3.0	6.0	0
11	C	0	27	4,620	790	171	7.39	3.1	4,890	820	168	7.22	1.8	2.5	2.5	0
12	O	0	43	5,360	840	157	7.06	2.2	4,360	700	161	7.00	3.1	5.0	3.0	0
13	PC	0	38	5,100	820	161	7.16	1.1	4,540	820	180	7.22	2.1	4.0	3.0	0
14	O	0	39	5,060	860	170	7.16	1.5	4,400	800	182	7.23	3.4	1.0	1.0	0
15	O	0	33	5,120	820	160	7.53	2.1	4,590	820	179	7.55	4.1	1.0	1.0	0
16	S	0.3	29	4,860	850	175	7.36	2.4	4,860	850	175	7.44	3.7	2.0	2.0	0
17	O	0.2	22	4,630	810	175	7.23	3.5	4,770	820	172	7.13	4.1	2.5	3.5	0
18	O	0	30	5,110	840	164	7.02	3.7	4,540	840	185	6.92	4.2	2.5	2.0	0
19	C	0	27	5,090	840	165	7.27	3.2	4,620	840	181	7.09	3.7	2.0	3.0	0
20	C	0	31	5,050	840	166	7.22	2.8	4,410	740	168	7.12	4.3	2.0	1.0	0
21	C	0	32	5,310	850	160	7.16	2.5	4,190	730	174	7.07	3.9	3.0	3.0	0
22	C	0	30	5,330	870	163	7.39	2.5	4,130	710	172	7.22	3.9	3.0	2.0	0
23	C	0	31	5,660	850	150	7.30	1.2	4,150	730	176	7.27	4.4	3.0	2.5	0
24	PC	0	32	5,090	820	161	7.32	1.3	4,080	720	176	7.49	4.5	3.0	3.0	0
25	C	0	39	4,720	760	161	7.44	1.9	4,670	820	176	7.38	4.7	2.5	2.0	0
26	C	0	46	4,340	650	150	7.17	2.7	4,930	800	162	7.00	3.0	2.0	2.0	0
27	O	0	39	4,180	670	160	7.48	2.8	5,100	830	163	7.11	3.0	2.0	3.0	0
28	O	0	53	4,430	740	167	7.27	1.7	4,810	810	168	7.30	2.2	1.0	1.0	0
29	O	1.3	51	4,380	720	164	7.25	1.0	4,480	750	167	7.24	1.1	6.0	5.0	0
30	O	0	37	5,040	830	165	7.21	1.0	4,420	720	163	7.25	2.1	3.0	1.0	0
31	C	0	33	5,090	850	167	7.27	2.3	3,940	720	183	7.34	4.6	1.0	1.0	0
TOTAL		1.8	1104	145,180	23,270	4,939	225	76.1	138,120	23,360	5,248	223	101	72.5	73.5	0
MAX		1.3	53	5,660	870	175	7.53	5.8	5,550	850	185	7.55	4.7	6.0	6.0	0
MIN		0	22	2,720	360	125	6.91	1.0	3,300	540	153	6.81	1.0	1.0	1.0	0
AVG		0.06	36	4,683	751	159	7.24	2.5	4,455	754	169	7.19	3.2	2.3	2.4	0.0

DATE	PLANT EFFLUENT, SM1 UPSTREAM & SM2 DOWNSTREAM FLOW EFF (mgd)	pH	BOD (mg/l)	TOTAL SUSPENDED SOLIDS (mg/l)	DO (mg/l)	AMMONIA as N	TEMP C	E. Coli	OIL & GREASE (Monthly)	SELENIUM (Monthly)	SM1 HARDNESS (Monthly)	SM2 HARDNESS (Monthly)	T.R. PHOSPHORUS (Quarterly)	SM1 T.R. PHOSPHORUS (Quarterly)	TOTAL NITROGEN (Quarterly)	SM2 TOTAL NITROGEN (Quarterly)	T.R. CADMIUM (Quarterly)	T.R. COPPER (Quarterly)	RETURN SLUDGE FLOW (mgd)	SUSPENDED SOLIDS (mg/l)	WASTE SLUDGE TO STORAGE FLOW (gallons)	WASTED DRY LBS
1	2.369	7.40			6.4		12.2												0.845	3,350		
2	1.782	7.51			7.1		11.5												0.644	7,765	45,000	2,914
3	1.676	7.35			6.8		10.7												0.716	5,630		
4	1.745	7.63			6.6		11.2												0.859	6,130		
5	1.709	7.36			6.8	0.01	11.1												0.796	7,685		
6	1.614	7.30	1.8	1.5	6.2		11.7												0.551	9,300	45,000	3,490
7	1.504	7.48			6.5		10.6												0.798	7,295		
8	1.697	7.46			5.6		10.8												0.701	7,815		
9	1.600	7.42			5.3		12.1												0.555	7,800		
10	1.549	7.44			5.7		10.4												0.853	6,500		
11	1.578	7.58			6.2		10.1												0.788	6,900		
12	1.618	7.45			6.4	0.50	10.4		<4.9	<1.0	278	308							0.775	7,080		
13	1.456	7.36	2.0	1.8	6.1		10.0												0.812	7,685	45,000	2,884
14	1.543	7.32			5.8		10.1												0.741	7,255		
15	1.611	7.82			6.7		9.3												0.888	7,335		
16	1.509	7.47			6.3		8.8												0.841	7,835		
17	1.466	7.46			6.9	0.03	8.3												0.826	7,405		
18	1.515	7.30	1.8	2.0	6.8		8.5												0.765	5,655		
19	1.564	7.55			6.9		8.6												0.700	7,415	90,000	5,566
20	1.536	7.51			6.3		9.0												0.632	6,815		
21	1.596	7.49			6.2		8.9												0.840	6,155		
22	1.550	7.60			6.2		9.4												0.802	7,010		
23	1.517	7.60			6.2		9.7												0.704	7,950	45,000	2,984
24	1.492	7.62			6.1		9.1												0.751	6,480		
25	1.459	7.71			6.4		9.5												0.829	5,595		
26	1.289	7.50			6.7	0.02	10.8												0.727	7,440		
27	1.522	7.54	2.1	1.5	5.9		10.6												0.666	7,345	45,000	2,757
28	1.537	7.39			5.4		11.9												0.592	5,260		
29	2.504	7.37			4.6		12.8												0.828	13,610		
30	1.993	7.35			5.6		11.2												0.610	9,160	45,000	3,438
31	1.714	7.63			6.7		9.9												0.651	7,110		
TOTAL	50.814	232	7.7	6.8	193	0.56	319	0	<4.9	<1.0	278	308	0	0	0	0	0	0	23.086	223,765	360,000	24,033
MAX	2.504	7.82	2.1	2.0	7.1	0.50	12.8	0	<4.9	<1.0	278	308	0	0	0	0	0	0	0.888	13,610	90,000	5,566
MIN	1.289	7.30	1.8	1.5	4.6	0.01	8.3	0	<4.9	<1.0	278	308	0	0	0	0	0	0	0.551	3,350	45,000	2,757
AVG	1.639	7.48	1.9	1.7	6.2	0.14	10.3	0.0	<4.9	<1.0	278	308	0.0	0.0	0.0	0.0	0.0	0.0	0.745	7,218	51,429	3,433

Use following abbreviations R-rain, S-snow, O-overcast, C-clear, PC-partly cloudy

Prepared by GH, JH, DS

Approved by GH

Date 1/3/2020

Lake Ozark / Osage Beach Joint Wastewater Plant
INVENTORY LIST
January 2020

TOOLS

* & X = New 2019

Item No.	Quantity & Item
1	1 - Craftsman 3 drawer tool box
2	1 - Craftsman 5 drawer tool box
3	1 - Assortment SAE Allen wrenches
4	1 - Assortment Metric Allen wrenches
5	1 - 3/8 SAE T Allen wrench
6	1 - Set 3/8 Allen wrench sockets 1/8 - 1/2
7	1 - Set SAE & Metric nutdrivers in tool bag
8	7 - SAE nutdrivers 3/16 - 1/2
9	7 - Metric nutdrivers 5mm - 11mm
10	5 - Torx screwdriver assorted sizes
11	1 - Assortment of straight & Philips screwdrivers
12	1 - 1/2"staight screwdriver socket
13	1 - 1/4"deep socket set 4mm -14mm
14	1 - 1/4" deep socket set 3/16 - 1/2
15	1 - 1/4" shallow socket set 4mm - 13mm
16	1 - 1/4" shallow socket set 5/32 -1/2 w/ 2 & 3" extensions
17	1 - 1/4"Ratchet
18	1 - 40 piece 1/4 & 3/8 socket set, in RAS basement
19	1 - 3/8" X 1/4" socket adapter
20	1 - 3/8" deep & shallow socket set 3/8 - 3/4
21	1 - 3/8"deep socket set 9mm - 19mm
22	1 - 3/8" Craftsman socket set 3/8 - 13/16
23	2 - 3/8" 1 1/2" extensions & 1 - 6" ext.
24	1 - 3/8" Ratchet
25	4 - 3/8" 6 point sockets 1/4 - 7/16
26	2 - 3/8" spark plug sockets 5/8 & 13/16
27	2 - 1/2" Ratchets & 1 set 1/2" extensions 2, 3 & 6"
28	1 - 1/2" deep socket set 3/8 - 13/16
29	1 - 1/2" socket shallow socket set 9mm - 21mm
30	1 - 1/2" socket shallow socket set 7/16 - 1 1/4
31	6 - KD brand 3/4" sockets, 1 3/8, 1 7/16, 1 1/2, 1 5/8, 1 13/16 & 2 3/4"
32	1 - 3/4" Breaker bar & 16" extension, True craft
33	1 - 10 piece ignition wrench set 4mm - 13mm
34	1 - 10 piece ignition wrench set 5/32 - 7/16
35	2 - Boxed end wrench's 1/2-9/16 & 5/8-11/16
36	3 - 3/8, 4 - 7/16, 2 - 11/16, 2 - 3/4, 2 - 13/16, 2 - 7/8 combination wrenches
37	4 - 15/16, 4 - 1", 3 - 1 1/16, 5 - 1 1/4 & 4 - 1 1/18 comb. wrenches
38	3 - open end wrenches 7/16-17/32, 5/8-11/16, & 3/4-7/8
39	1 - Set pm comb. Wrench's 1/4 thru 7/8 in pouch
40	3 - snap ring pliers
41	2 - pair channel lock pliers, 1 blue handle & 1 black
42	2 - pair electrical channel lock pliers, 6 & 10"
43	1 - set of left handed drill bits

Lake Ozark / Osage Beach Joint Wastewater Plant
INVENTORY LIST
January 2020

TOOLS

* & X = New 2019

Item No.	Quantity & Item
44	6 - electrical screwdrivers, 3 straight & 3 philips head
45	2 - wire stripers
46	1 - pair lineman pliers
47	1 - pair needle nose pliers
48	1 - pair side cutters, 6"
49	3 - 10" Vise grip pliers, 2 curved jaw & 1 straight
50	2 - 6" Vise grip pliers, 1curved & 1 needle jaw
51	1 - yellow handle tin snips
52	1 - 12" crescent wrench, Craftsman
53	3 - pipe wrenches, 18", 24", & 36"
54	1 - 10" Stanley level
55	1 - 24" Craftsman level
56	2 - 25' Task Force tape measures
57	2 - 6" pocket metal rules
58	1 - points file
59	1 - file assortment
60	1 - rasp file
61	2 - Concrete trowel
62	1 - feeler gauge
63	1 - tool bag
64	1 - ice pick
65	1 - punch & chisel set
66	1 - 2" C clamp & 2 - 4" C clamps
67	2 - putty knives
68	1 - parts brush
69	1 - ball peen hammer
70	1 - 4lb shop hammer
71	1 - claw hammer
72	1 - 10 lb sledge hammer
73	1 - rubber mallet
74	1 - hacksaw
75	3 - wire brushes
76	1 - tire gauge
77	1 - 6" square
78	2 - rag pullers
79	1 - crow bar
80	1 - garden rake
81	1 - round point shovel
82	1 - flat shovel
83	1 - 10lb straight bar
84	1 - pick
85	1 - anti freeze tester
86	1 - flat bar

Lake Ozark / Osage Beach Joint Wastewater Plant
INVENTORY LIST
January 2020

TOOLS

* & X = New 2019

Item No.	Quantity & Item
87	1 - Craftsman 28 pc. tap & die set
88	1 - Black & Decker drill & driver set
89	1 - 7" carbide masonry drill bit set 3/16 - 3/4
90	3 - masonry bits, 1/4, 5/16 & 3/8
91	1 - Black & Decker metal drill bit set, 1/16 to 1/2 & HS bits assorted sizes
92	2 - gear pullers, 1 large & 1 small
93	1 - Black & Decker 3/8 variable speed drill
94	1 - mini copper tubing cutter
95	1 - PVC cutter
97	1 - 1/2" Electric Impact Wrench
98	1 - Sandblaster w/ 24ft of hose & 2 bags of blasting material
99	1 - Hitachi hammer drill*

SLUDGE TRUCK TOOLS

100	1 - grease gun
101	1 - 20 piece Stanley SAE Comb. end wrenches 1/4 - 7/8
102	1 - Set Comb. End wrenches 8mm - 18mm
103	1 - Rubber maid tool bag
104	4 - Stanley flathead screwdrivers
105	2 - Stanley phillips screwdrivers
106	AC Delco T20x4" star screwdriver
107	AC Delco 2x1 1/2" phillips screwdriver
108	AC Delco 1/4"x1 1/2" slotted screwdriver
109	13 oz. Wood handle claw hammer
110	RayOVac industrial flashlight
111	25' task force tape measure
112	7 WR vise grip
113	10 WR vise grip
114	Stanley lineman pliers 84-113
115	Stanley wire cutters 84-060
116	Stanley crescent wrench 85-763
117	1 - Set of wheel chocks
118	1 - log chain
119	1 - air hose
120	1 - assortment Buse fuses & 1157 bulbs

MISCELLANEOUS EQUIPMENT

121	1 - Ryobi 18 volt Drill, Circular Saw, Recip saw, Flashlight, Vacuum Combo Kit w/2 batteries
122	1 - Millermatic Wire feed welder w/helmet & gloves
123	1 - 10-3 50ft & 1 - 10-3 100ft Extension cord
124	4 - metal lockers in men's restroom
125	2 - metal lockers in women's restroom
126	1 - plastic mop bucket w/wringer
127	1 - Gorilla ladder MPX-22

Lake Ozark / Osage Beach Joint Wastewater Plant
INVENTORY LIST
January 2020

MISCELLANEOUS EQUIPMENT

Item No.	Quantity & Item	* & X = New 2019
128	1 - 4' step ladder, fiberglass	
129	1 - 6' step ladder, fiberglass	
130	10' stepladder, wood	
131	24' 300 lb rated extension ladder, aluminum	
132	24' 300 lb. rated extension ladder, fiberglass	
133	2 - set of plastic saw horses	
134	1 - 6"x 10' suction hoses	
135	2 - 6" x 25' suction hose	
136	1 - 4" x 60' suction hose	
137	1 - 4" x 15' discharge hose @ septic unloading station	
138	1 - Schumacher battery charger model SE-82-6	
139	1 - DieHard 12 volt automatic battery charger/engine starter model 28.71331*	X
140	1 - 100' extension cord	
141	1 - 50' extension cord	
142	1 - 1 gallon plastic gas cans	
143	2 - 5 gallon steel safety gas cans	
144	1 - misc. log chains, headwork's tool room	
145	3 - 50'x1 1/2" fire hoses with 2 nozzles	
146	5 - Garden hoses	
147	1 - mechanic creeper	
148	2 - Craftsman gas leaf blowers, one not running	
149	1 - Craftsman 4 cycle weed eater	
150	1 - Stihl weed eater, not running	
151	1 - Kawasaki weed eater, not running	
152	1 - cherry picker (engine hoist)	
153	1 - 9 gallon portable air tank	
154	1 - Campbell Hausfield 26 gallon air compressor	
155	1 - CH air drill	
156	1 - CH air ratchet	
157	1 - CH air grinder	
158	1 - CH air impact wrench	
159	1 - CH air chisel w/4 chisels	
160	1 - air tire inflator	
161	1 - Pro-Arc oxy-acc torch kit & tanks	
162	1 - Pro-Force 33 paint sprayer	
163	1 - 15 gal 12 volt portable sprayer	
164	1 - 60gal Ingersoll Rand in UV building	
165	1 - 3 ea. grease gun	
166	1 - Cowhbian 5" multi bench vise	
167	3 - shop vac's	
168	2 - drum dollies	
169	1 - Commercial Elec. Amp meter, HDSA 500	
170	1 - Commercial Elec. Multi meter, HDM 4100	

Lake Ozark / Osage Beach Joint Wastewater Plant
INVENTORY LIST
January 2020

MISCELLANEOUS EQUIPMENT

* & X = New 2019

Item No.	Quantity & Item
171	2 - insulated fuse pullers, 1 large & 1 small
172	1 - GB circuit tester
173	1 - 3/8 hammer drill
174	1 - Skil 14.4 drill kit, w/ battery & charger
175	1 - Black & Decker bench grinder
176	1 - Black & Decker hand grinder, 4 1/2"
177	1 - 115V 3/8 VSR Drill/ Driver
178	1 - propane torch, elec. Start
179	1 - strap 1 ton come along
180	2 - chain come alongs, 1 ton & 3 ton
181	1 - cable come along, 1 ton
182	1 - 2 ton floor jack
183	1 - 12 ton high lift jack
184	2 - yellow air hoses
185	1 - 100gal. Portable Diesel fuel tank
186	1 - Fluke T5-1000 Volt/Amp meter
187	1 - wheel barrow
188	1 - garden cart
189	1 - Garden power 65ft. 5/8" Auto-Retractable Garden Hose reel
190	1 - portable hand work light
191	1 - portable work light stand w/ dual mounted lights
192	2 - Strong Arm electric winches
193	1 - AMT 3" trash pump w/wheel kit
194	1 - 3" 50ft & 1 - 30ft suction/discharge hose w/couplings
195	1 - North Star 3000 PSI Steam and Hot Water Pressure Washer
196	1 - Warn 120 volt Winch/Hoist for pulling UV channel basket
197	1 - Chapin Homepro backpack sprayer

OFFICE INVENTORY

198	1 - wooden desk
199	1 - metal desk
200	4 - Office chairs
201	3 - file cabinets, 1 - 4 drawer & 2 - 2 drawer
202	1 - 3 shelf bookshelf
203	1 - PC , w, speaker in monitor, keyboard, and surge arrest---DELL
204	1 - MFC-7360N Brother copier / printer
205	1 - conference table
206	27 - folding steel chairs
207	3 - Phones (cradle style)
208	1 - Fellowes paper shredder
209	1 - Bissell vacuum cleaner
210	1 - Emerson TV / VCR Combo (for training)
211	1 - Emerson microwave

Lake Ozark / Osage Beach Joint Wastewater Plant
INVENTORY LIST
January 2020

* & X = New 2019

212	1 - Magic chef refrigerator	
213	1 - Culligan water cooler	

CONSUMABLE MATERIALS

214	2 - 500 Gallon propane tanks, w/ 515 gallons as of 1/6/20	

VEHICLE'S

215	1 - TRYN SP-575X-1 Mini Pro Tailgate Spreader SN#190730300540SP-575	X
216	1 - 2018 Ford F-250 w/Knaplied snow blade vin# 1FTBF2B66JEC64283	
217	1 - 1994 Volvo White GMC Sludge Truck vin# 4V2JCBE75R833094	
218	1 - 1985 GMC 4 Wheel Drive Field Truck vin# 1GDL7D1YDV529996	
219	1 - Kabota ZG123S 48" Zero-Turn Mower	

LABORATORY EQUIPMENT

Item No.	Quantity & Item	
220	1 - OHAUS adventurer analytical balance	
221	1 - Orion & 1 no name brand bench top electrode arms	
222	1 - USA Bluebook electric stirrer	
223	3 - Isco Auto samplers, 1 - NI-CAD batteries, 1 small & 1 larger charger	
224	1 - Isco Auto sampler pump	
225	1 - Hach Sension+ MM340 Ammonia meter* & probe*	X
226	1 - Hach HQ411D pH/mv meter & probe with stand	
227	1 - Allied stirrer and hot plate	
228	1 - Vector spotlight, for discharging Isco batteries	
229	2 - VWR ASTM certified / calibrated thermometers	
230	2 - Nalgene desiccators	
231	1 - muffle furnace-Therolyne	
232	1 - vacuum pump-Fisher	
233	1 - sterilizer-Electric Steno Clave	
234	1 - centrifuge-IEC centrifuge, not in use	
235	1 - Incubator-Fisher ISO temp	
236	1 - drying oven-Fisher ISO temp oven	
237	1 - portable D.O. meter-YSI 550-A	
238	1 - BOD meter & probe--YSI 5905, not in use, obsolete	
239	1 - BOD Incubator- Fisher low temp model 307	
240	1 - microscope-Micromaster	
241	1 - Lab refrigerator-Marvel Division	
242	2 - timers-West Bend	
243	1 - Hanna portable pH meter	
244	2 - Hach HQ40D meters, 1 with LBOD probe* & 1 w/ Rugged LDO probe*	X
245	1 - Hach Distillation Glassware set for Ammonia	
246	1 - Thermo Hot plate for distillation	
247	2 - Igloo Ice Maker for Samplers	

Lake Ozark / Osage Beach Joint Wastewater Plant
INVENTORY LIST
January 2020

SAFETY EQUIPMENT

Item No.	Quantity & Item	* & X = New 2019
248	15 - Safety Glasses / Goggles	
249	2 - Face Shield	
250	2 - UV Face shields	
251	4 - Rubber Gloves	
252	25 - Disposable Gloves	
253	6 - Dust Mask/Respirators	
254	2 - Ear Protection muffs & 6 pair disposable ear plugs	
255	1 - Eye Wash Stations	
256	2 - Back Supports	
257	1 - Gas Detector / Monitor, portable RKI GX-3R*	X
258	1 - Lock Out/Tagout Station	
259	2 - Full Body Harness	
260	2 - Lanyards	
261	1 - Tripod and Winch	
262	3 - First Aid Kits	
263	6 - Fire Extinguishers, Plant	
264	1 - Fire Extinguishers, Office	
265	3 - Fire Extinguishers, Vehicles	

SPARE EQUIPMENT & PARTS

266	4 - electrical contact relay for pista grit*	X
267	1 - 3 phase monitors for lift stations	
268	3 - Allen Bradley PLC I/O Boards for UV control panel	
269	60 - UV bulbs	
270	57 - UV quartz sleeve - **20***	X
271	3 - UV ballast	
272	2 - UV air cylinder rebuild kit & 2 outer bands	
273	2 - New UV air cylinder	
274	1 - UV air cylinder hose, approx. 20 ft.	
275	15 - Wiper Rings	
276	1 - UV bulb cord w/6 bulb sockets	
277	1 - Blue Poly tubing for outdoor UV panel 5ft 6mm & 5ft 10mm	
278	4 - UV sensor brushes	
279	1 - blower for digesters	
280	1 - Vac pump rebuild kit for 1600 gal Field Gymmy sludge truck	
281	1 - Carboy for BOD water	
282	1 - electric cylinder valve for back of sludge truck	
283	1 - Fluorescent bulb ballast & 20 T-8 bulbs	
284	1 - quantity of assorted ¾, & 1" PVC pipe fittings	
285	1 - quantity of assorted nuts & bolts	
286	1 - Transtector ACP-100 surge suppressor	
287	1 - Transtector PDS 1 tube surge protector	
288	1 - Alternating relay for lift stations	

The Lake of the Ozark Regional Wastewater Treatment Plant #1

Emergency Response Plan, Emergency Operations Plan, Emergency Action Plan, and Fire Protection Plan

January 2020

Purpose

The purpose of the Emergency Response Plan (ERP) is to provide for an organized response to an emergency situation at the Lake of the Ozarks Regional Wastewater Treatment Plant #1 (WWTP). The primary emphasis in the ERP is to minimize risk to public health, and to minimize damage to private and public property. The secondary emphasis in the ERP is to provide the best possible wastewater treatment in the event of an emergency situation.

Table of Contents

	Page #
Section I	
• Preliminary Damage Assessment Check List	02
• Personnel Inventory, Contact Order & Training	03
• Facility Emergency Equipment Inventory	04
• Command Post Designation	04
• Communication Policy	05
• Emergency Action Plan	06
• Fire Protection Plan & Hot Work Permit	07-08
• Emergency Identification and Analysis	09
• Facilities Security	10
• Priority Equipment and Processes	10
• Emergency Response Guidelines	11
Section II	
• Damage and Response	12-16
Section III	
• Contingency Plan for Total Loss of Power	16
• Contingency Plan for High Flows	16
• Contingency Plan for Toxic Chemical Releases	17
• Contingency Plan for SSO's	18
• Contingency Plan for Sludge Spills	18
Appendix 1	
• List of Key Contacts & Local Utilities/Services/Suppliers	19-22
Appendix 2	
• Chemical List & Facilities Map	23-24
Appendix 3	
• Standard Conditions for NPDES Permits	25
Appendix 4	
• Daily Readings-Weekly Maintenance Instructions	25-26
Appendix 5	
• Permit Required Confined Spaces & Entry Permit	26-28
Appendix 6	
• Lockout Instructions & LOTO Permit	29-30
Appendix 7	
• Deviation Notification Form & Wastewater Bypass Report Form	31-32

Preliminary Damage Assessment Checklist

- ☐ Call key plant personnel, starting with Contact Order on page 3 of this ERP. Determine need for additional personnel.
- ☐ Notify fire department if appropriate.
- ☐ Identify person in charge at the site.
- ☐ Make preliminary site evaluation, determine extent of physical and operating damage. (Check piping, pumps, basins, structures, look for seepage, leaks, cracks, landslides, broken pipes and drains).
- ☐ Check for downed power lines and propane gas odors and notify Ameren UE if necessary.
- ☐ If damage appears intentional, notify police (site may be a crime scene).
- ☐ Take steps to keep public safe, use barricades, etc. Remove obstacles that will prevent emergency vehicle access.
- ☐ Person in charge should contact key Joint Sewer Board Representatives to inform of situation and discuss further anticipated notifications.
- ☐ If environmental damage is likely, notify MDNR.
- ☐ If public health is at risk, notify local health department.
- ☐ Develop mitigation and recovery plan.

Section I

A. Personnel Inventory, Contact Order & Training

1: Personnel Inventory

Name	Title	Office Phone	Home Phone	Mobile Phone
Gary Hutchcraft	Local Manager II	573-365-0455		573-216-8398
John Hornback	Supervisor	573-365-0455	573-369-2761	573-480-4065
Darren Shenkel	Utiltiy Worker I	573-365-0455		816-215-5550
Gary Johnson	Division Manager	573-874-8080	573-234-7946	314-581-6024
Mark Mahler	Director of Compliance & Safety	573-874-8080	Ext. 226	573-825-8169
Tony Sneed	Director of Operations	573-874-8080	Ext. 203	256-278-1264
Tim Geraghty	AWR President	573-874-8080	Ext. 229	314-575-4738

2: Contact Order

Contact Order	Corporate Office Contact	Division Contact	Outside Support Contact
1		Gary Hutchcraft	
2		John Hornback	
3		Darren Shenkel	
4			Lonnie Madole
5			Kevin Klein
6			Josh Thompson
7	Gary Johnson		
8	Tony Sneed		
9	Tim Geraghty		

Client Contact:	Jenna Woods Matt Michalik

3: Annual Staff Training Goals

* CPR – First Aid
* Confined Space Entry
* Vehicle Safety – Defensive Driving
* Hazard Communication
* Work Area Protection – Traffic Around Job Sites
* Lockout – Tagout
* Back Safety/Lifting Methods
* Respiratory Protection
* Emergency Action and Fire Prevention

4: Emergency Response Plan shall be reviewed and updated on an annual basis

B. Facility Emergency Equipment Inventory

1. Communications

a. Cell Phones

The following Cell numbers have been assigned to staff:

Gary Hutchcraft	573-216-8398
John Hornback	573-216-3878 (duty phone)
Darren Shenkel	573-216-3878 (duty phone)

b. Telephones

WWTP Plant Voice	573-365-0455
WWTP Plant Dialer	573-365-0455
WWTP Duty Cell	573-216-3878

2. Safety Equipment

a. Full body harness (2) - (Admin. Bldg.)
b. Lanyard & spreader bar – (Admin. Bldg.)
c. Tripod and hoist - (Admin. Bldg.)
d. 4-gas Drager X-am 2000 gas detector - (Admin. Bldg.-office)

3. Other Equipment

a. Ford 6" trash pump, City owned (Lake Ozark)
b. 60' of 6" suction hose, City owned (Lake Ozark). 60' of 4" suction hose w/ 4 to 6" adapter.
c. AMT 3" trash pump, w/ 30' and 50' hoses w/ quick couplers.
d. Dodge Dakota, 2WD pickup truck w/ tire chains.
e. Volvo White GMC Sludge pump truck w/ 3700 gallon tank.
f. GMC 4 Wheel drive Field pump truck with 1600 gallon tank w/ 20' of 6" suction hose.
g. Wire feed Welder (1)
h. Oxygen and Acetylene torch set w/ 50' hose.

C. Command Post Designation

- The command post for the WWTP shall be in the Administration building-office at the WWTP. If conditions make this impossible, then the command post shall be located at a designated site provided for by the Joint Sewer Board.
- All communications shall be coordinated through the City.

D. Communications Policy

1-Report all emergency situations (if possible), to Gary Hutchcraft

If Gary cannot be contacted, then call the people on the following list until someone is notified of the emergency situation.

	Work	Mobile	Home
• Darren Shenkel	573-365-0455	816-215-5550	
• John Hornback	573-365-0455	573-480-4065	573-369-2761
• Lonnie Madole	573-378-5737	573-789-5242	
• Kevin Klein	573-378-5737	573-378-8510	
• Josh Thompson	573-364-8790	573-308-6229	573-762-9941
• Gary Johnson	573-874-8080x275	314-581-6024	573-234-7946
• Tony Sneed	573-874-8080x302	256-278-1264	
• Tim Geraghty	573-874-8080 x229	314-575-4738	

What qualifies as an emergency situation?

Generally speaking, an emergency situation can be anything that has the potential to cause danger to human health, and or damage to property. We can easily extend the meaning of an emergency situation to be anything that has the potential to cause damage to the environment. The practical application thus being: an emergency situation is any situation that has the potential to cause a violation of the NPDES permit.

The NPDES permit is a combination of both numeric and narrative standards that are developed to protect the designated uses of the stream that the Lake of the Ozarks Regional WWTP #1 discharges into. The permit also contains standards that cover wastewater discharges from the collection system.

The following outline lists some (not all) of the situations that qualify as an emergency situation that should trigger notification.

Surcharge
- Wet Weather
- Dry Weather

Loss of treatment
- Power Fail
- Equipment damage
- Toxic Shock
- Short Circuit

Sabotage

2 - In an emergency situation the following information shall be communicated:
- What has been damaged,
- If no damage, why is there an emergency,
- Is there a threat to public health,
- Is there damage to public and/or private property,
- Has treatment been affected,
- Are NPDES permit violations occurring,
- Will NPDES permit violations result from the emergency,
- Are there any safety issues due to the emergency,
- Are help and/or equipment needed to eliminate the emergency?

3-The MODNR will have to be contacted when Section B, 2A-B, (noncompliance notification standards, published in the 'Standard Conditions for NPDES Permits'), have been reached. A copy of these standards is included in the text of this plan on page 24. Follow the directions listed in the 'notification standards'.
MODNR Southwest Regional Office
Phone: 1-417-891-4300 or Environmental Emergency Response 1-573-634-2436
2040 W. Woodland
Springfield, MO 65807

Always notify the Joint Sewer Board and Corporate before MODNR notification. When notifying the MODNR always record the name of who you are talking to, and the time and date of the notification. Give the following information: what the violation is per notification standards, and what our actions are to eliminate the violation. Be factual; do not assume anything. Finally, find out if the DNR requires written notification concerning the violation.

In the 2 drawer file cabinet by the copier, the file that is marked "DNR Bypass forms" there are two report forms that need to be filled out in any bypass situation, and/or any operations - treatment emergency that reaches notification standards. One report form (Wastewater Bypass Report Form) is for the MODNR, and the other report form (Deviation Notification Form) is for AWR corporate. These forms are also included in Appendix 8 of this manual.

E. Emergency Action Plan

- Procedures for reporting a fire or other emergency situations.

    1. Call 911 and report the situation
    2. If the land line phones don't work, try cells and direct connects
    3. Determine if a response is safe and or necessary
    4. Determine whether or not evacuation is necessary

- Procedures for emergency evacuation including type of evacuation and exit route assignments.

    1. If an emergency evacuation is necessary follow the exit routes posted in the buildings.
    2. All evacuees shall meet at the main entrance gate, and determine what action needs to be taken, and if support can be given to emergency response personnel.

- Procedures to be followed by employees who remain to operate critical plant operations before they evacuate.

    1. If employees need to stay behind to operate critical plant operations, they shall establish communications with an employee who has already evacuated. Communications shall be on a routine basis with information conveyed relating to the safety of the remaining employee, current operation conditions, safety related conditions, etc.
    2. The employee who stayed behind shall evacuate if life threatening conditions present themselves, or if there is evidence that a condition may become life threatening.

- Procedures to account for all employees after evacuation.

    1. As specified above, all employees who evacuate shall meet just outside the entrance gate. An accounting of all employees shall be determined.

- Assignments

    1. The on-call operator shall be designated as the employee who stays behind.
    2. The local manager shall ensure that communications are being carried out with the employee who stayed behind
    3. The local manager is responsible for making an accounting of all employees.

F. Fire Protection Plan

- Assure that hazardous accumulations of combustible waste material are controlled.
    1. Place used rags in the metal used rag container.
    2. Keep trash picked up and trash cans empty on a regular basis.
    3. Complete and turn in the required hot work permit for all welding or grinding activities.
    4. Keep a 30 minute fire watch after any welding operation has ended.
    5. Keep combustible liquids in the storage cabinets. Keep the cabinet doors closed.

- Identify high risk areas and develop plans to minimize potential fire hazards.
    1. The highest risk area for fires is in the shop. Plans to minimize the risk of a fire include: use of storage cabinets for gasoline, paints, etc. Use of metal trash cans with lids for the storage of used shop rags. And the control of trash accumulation on the floor and in the trash cans.

Alliance WATER RESOURCES

HOT WORK PERMIT/ CHECKLIST

Location:	Date:	Supervisor:
Work to be done:		
Special Precautions:		
Time Started:	Time Completed:	
Signed:	Date:	

(Individual responsible for Hot Work authorization.)

ATTENTION

Before approval of the Hot Work Permit, the Supervisor or appointee shall inspect the work area and confirm that all precautions have been taken to prevent fire.

Yes	No	N/A	Precautions
			Is all cutting and welding equipment in good repair/ condition?
			Has pre-task Tool Box Talk been administered?

Yes	No	N/A	Within 25 Feet of Work
			Floor/ ground clear of combustibles if possible?
			Combustible floors wet down, covered, or shielded?
			No combustible material or flammable liquids?
			Combustibles and flammable liquids covered or shielded?

Yes	No	N/A	Work on Enclosed Equipment
			Equipment cleaned of all combustibles?
			Containers/ drums purged of flammable vapors/ materials?

Yes	No	N/A	Fire Watch
x			To be provided during and 30 minutes after work completion?
x			Supplied with fire extinguisher and or small charged fire hose?
x			Trained in the use of equipment and emergency procedures?

Yes	No	N/A	Final Check-Up
			Completed 30 minutes after work completion?
Supervisor Signature:			Date:

(To be signed by individual responsible for Final Check-Up, after its completion.)

G. Emergency Identification and Analysis

Emergency	Analysis
Severe storms, high wind, lightning, floods.	• Damage can range from low to medium depending on severity of storm. • Electrical supply, electrical pathways, exposed equipment and equipment located in underground vaults (when flooding is a concern), are most susceptible to damage.
Severe cold, ice storms, blizzards.	• Damage can range from low to medium depending on severity of conditions. • Temperatures below -15° F are cause for emergency response with outside equipment and with buildings that require additional heat to protect equipment with exposed moving parts. In these conditions always make sure the lift stations lids are closed. • Ice storms and blizzards can cause damage to the electrical supply and also hinder access to the Wastewater Treatment Plant.
Earthquakes.	• Damage can range from low to high. • A major earthquake has the potential to cause extensive damage to all phases of wastewater collection and wastewater treatment since a lot of equipment is located underground. • Damage can also occur in weak links of a collection system or weak areas of concrete basins, which may not be apparent by visual observation.
Sabotage, civil unrest, riots, terrorist attacks.	• Damage can range from low to high on electrical supply, and any equipment that is exposed and can be easily damaged (i.e. bar screen, electrical control panels, lift stations, lab-office building equipment, etc.). • Measures to prevent damage from terrorist attacks are detailed in the following section on facilities security.
Air borne chemicals, water borne chemicals, toxic chemical spills, weapons of mass destruction.	• Damage to bacteria mass in the treatment process, and can also affect health of treatment personnel. • Caution should always be taken when confronting a chemical - biological emergency. • If weapons of mass destruction are suspected to have caused the emergency, then treat the affected area as a crime scene and call local authorities.

H. Facilities Security:

The following topics should be analyzed and developed to increase security to its highest Level at the WWTP:

1. Detection (the ability to detect a security threat),

2. Access (deter access to the WWTP),

3. Delay (provide a layered barrier system to delay access to the WWTP)

4. Respond (develop an organized response to a breach in security)

I. Priority Equipment and Processes.
The following list is a list of equipment and/or processes in the order of relative importance to the wastewater treatment process. The list shall be used as a guide when determining what equipment and/or processes need to be placed into service first, second, and so on, when there is a widespread emergency. The list is organized into two categories: WWTP mechanical (piping and valves), and equipment (which includes structures).

Mechanical	Treatment Equipment
1. Raw sewage force mains to WWTP.	1. Oxidation Ditches (at least one aerator per unit that WW is entering)
2. Gravity thru Oxidation Ditches.	2. Final Clarifiers (1,2 & 3).
3. Gravity mains from oxidation ditches to final clarifiers splitter boxes.	3. Adjustable weir gate valves at basins
4. Gravity to Clarifiers.	4. Adjustable weir gate valves at splitter box for Clarifiers
5. Sluice gates in Oxidation Ditches and UV channels for draining purposes	5. Lift Station between aeration basins
6. RAS force main back to Ditches	6. RAS electric pinch valves in middle room of headwork's bldg.
7. RAS waste from clarifiers	7. Waste valves
8. Sludge waste force mains to sludge storage cells.	8. Waste valve pit and waste manhole on top of hill and at bottom by Digesters

J. Emergency Response Guidelines.

1. General Guidelines.

- **Analysis and Planning.** If time permits conduct an initial meeting with staff to assess an expected emergency situation. Outline potential damage to specific equipment, processes, or structures. Plan a strategy to prevent potential damage and/or minimize its effects on public health, property, and wastewater treatment.

- **Inspect.** After the onset of an emergency, inspect WWTP for damage. Follow all applicable safety regulations and lock out and secure any unsafe areas.

- **Communicate.** Document damaged units, and unsafe areas. If damage creates immediate threats to public health, properties, and/or wastewater treatment, contact Joint Sewer Board, AWR, and State; to advise of situation. Consult communications policy on page 4.

- **React.** Execute activities to eliminate threats to public health, property, and/or wastewater treatment. Refer to 'Damage and Response' section of this plan to help direct the activities. Collect necessary samples, as NPDES permit requires. Develop best treatment plan in the event of an emergency that disables one or several process units. Contact City's for emergency purchasing authority. Contact vendors for needed supplies.

- **Communicate.** Update the Joint Sewer Board, AWR, and State as needed. Log important observations and actions.

- **Repair.** Make necessary repairs to bring damaged units back up to full operations.

- **Review.** Review emergency response with staff and make adjustments in the ERP if necessary.

In a widespread emergency, AWR staff will be required to assist the Joint Sewer Board. In this situation, one staff member (two staff if there are safety concerns), will be responsible for implementing the initial steps of the above guidelines.

Section II

Damage and Response

Damage to the WWTP can result in threats to public health and/or damage to private or public property. Damage can also result in an interruption of wastewater treatment in various degrees. The WWTP are constructed of several process units that are linked together to convey and treat the wastewater. This section looks at the possible effects of damage to these process units, and what type of responses can be made to limit the threat to public health, property damage, and the continuation of wastewater treatment.

Process Unit:
Main Power Supply

Key Components:
3 phase power lines from sub, pole and pad mounted transformers feeding MCC1 which feeds MCC2. When power goes out the standby/backup generator will automatically come on and feed both MCC1 & 2 but everything will not come back on automatically. Manually restart all equipment that was going before outage if capable following every precaution mentioned in this ERP.

Effects of Damage
Power lines-

- In severe cases one or all of the power lines can be severed which will result in power loss to the WWTP.
- If power lines are severed upstream from the pole or pad mounted transformers then power loss will affect MCC1 & MCC2
- Power loss of more than 8 hours has the potential to cause the ditches to go septic and the sludge in the clarifiers to surface and bulk and/or cause a violation of permit limits.

Transformers-

- Loss of one or more of the pole or pad mounted transformers will cause power loss to MCC1.

Response
Power lines-

- Call Ameren UE and find out how soon they can make it out. Once you have a response then call the Local Manager and inform, then let him make the decision on what to do next.
- At the least the employee on emergency Duty must stay until Ameren UE restores power or a relief operator shows up to relieve him and once power is restored bring one piece of equipment back on line at a time.

Transformers- ,

- Checks to see if fuses have blown or flipped down on the pole mounted transformer by the main power control room at the Headwork's Bldg. and inform Ameren UE of it. If that is what it is then, it will be an easy fix for them. **Never try to attempt to flip fuses back up on your own, Let Ameren UE do it.**

Process Unit:
Head Works

Key Components:
MCC1 and MCC2 control power and control equipment (unit specific), mechanical bar screens, grit chamber, grit solids pump, RAS pumps, non-pot and potable pumps.

Effects of Damage
In general-

- In any case, if damage is severe enough to disrupt either the mechanical bar screen, and/or the grit chamber/grit solids pump; both units can be bypassed. This condition is acceptable for a few days.

Response
In general-

- If units must be bypassed, do so immediately by placing a stop gate in its appropriate positions; this job requires two people.
- Install the manual bar screen as needed.
- Do not allow flow into the grit chamber if the paddle drives, grit solids pump, are not working, for more than couple of days.
- If damage results in the loss of the heater then emergency heating needs to be set up in sub-freezing weather.
- Pump out the grit chamber if it will be out of service during sub-freezing weather and are experiencing icing conditions.
- If necessary, also pull the Auto bar screen up and install manual bar screen; this will require getting in influent channel and hooking come-along to eyelets on bottom of bar screen and lifting it up out of the way so you can install the manual screen. This job requires at least 2 people.
- When bringing units back into service the mechanical bar screen shall receive top priority over the grit chamber, grit solids pump.

Process Unit:
Secondary Treatment

Key Components:
MCC1 and MCC2, aerator control box, control power and control equipment, oxidation ditch 1, and oxidation ditch 2.

Effects of Damage

In general-

- MCC1 power center is utilized to operate the aeration equipment.
- The most critical aeration equipment are the motors and gear boxes that drive the Carrousels. At least one should be in operation at all times.
- Loss of the oxidation ditches will result in at least a 60% reduction in treatment.
- Loss of air to the bacteria in the oxidation ditches for more than: 4 hours in the summer, and 24 hours in the winter, will create anoxic conditions and could possibly kill the bacterial population.

Response

In general-

- The oxidation ditches can, (one at a time), be isolated from the WW treatment process.
- If all aeration equipment is down make arrangements to get a minimum of one carrousel per ditch in operation ASAP.
- Note: If there has been a toxic spill in the collection system, one of the oxidation ditches can be made ready to accept the toxic waste, and then taken out of the process to further treat the toxic waste.
- If bacterial population is killed, plan to get seed from Camdenton or other surrounding communities.

Process Unit:
Clarification

Key Components:
Clarifier splitter box
MCC1 feeds MCC2.
Final clarifiers 1, 2, 3
Control power and control equipment.
Clarifier drive units, skimming mechanism, scraper mechanism, sludge withdrawal, RAS pumps, RAS force main, WAS force main, and clarifier gravity drain

Effects of Damage

In general-

- Severe cold is the most likely threat to damage the clarifiers.
- Earthquakes could cause considerable damage to underground piping.
- There is one inlet line and one drain line on clarifiers #1 and #2, with no drain on #3, so it is appropriate to state that any damage to underground piping could result in total disruption to the function of the clarifiers.
- Damage to sludge withdrawal equipment will disrupt the return of sludge to the oxidation ditches and thus stockpile the sludge in the affected clarifiers.

Response

In general-

- In severe cold, the skimming mechanisms should be modified to minimize potential damage to the skimmer arm/rake mechanism.
- A means of maintaining surface water disturbance (i.e. water sprays) is necessary to keep the surface from forming thick ice.
- Constant attention shall be given to the clarifiers during extreme cold conditions.
- Emergency pumping may be required to remove sludge from the clarifiers. This can be accomplished with the sludge pump truck on a routine interval. Clarifiers 1, and 2, should be placed back into service first.
- Note: Clarifier 3 cannot be drained dry by means gravity drain mains; it has to be pumped dry by RAS pumps.

Process Unit:
RAS Pump Building (basement)

Key Components:
MCC1 feeds MCC2, control power and control equipment, discharge piping, and check valves, discharge valves, force main, pumps/motors.

Effects of Damage

Main power-

- Will disable pumps and may lead to the stockpiling of sludge in the clarifiers. If left unchecked sludge can be discharged into the receiving stream.

Control power, control equipment-

- Will disable pumps in the automatic mode. Pumps can be operated manually (unless control transformer is damaged).

Piping and valves-

- Damage will inhibit operation of pumps.

Pumps and motors-

- Can disable one or all pumps.
- There are five pumps in the RAS pump building, which should greatly minimize the chance of losing total pumping capacity.

Response

Main power-

- If there is a power loss feeding the pump building then check to see if you have lost a leg of your 3 phase power in MCC2?
- If there is an interruption of main power within the control panel then isolate the problem (motor starter contacts, thermal overloads, fuses, etc.) and correct.
- Be aware that high amps indicate a motor overload (shorted windings, bad bearings, pump obstructions, etc.), and should be corrected before placing any motor back into service.

Control power, control equipment-

- If pumps operate on hand but not on auto then there is a problem with either the control power and/or the control equipment.
- Check control voltages.

Piping and valves-

- If there is damage to suction piping and/or check valves, then the damage shall be repaired, (ASAP if all pumps are affected; emergency pumping may have to be provided in this situation).
- If damage to piping and valves occurs downstream from the check valve, the damage should be repaired as required to allow RAS to be conveyed under pressure.

Pumps and motors-

- If all pumps are disabled then isolate the problem with each pump and plan corrective action based on which pump can be repaired the fastest. Make repairs to that pump then proceed to the next, etc.

Process Unit:

Sludge Digestion and Sludge Storage

Key Components:

Motor control center at digesters, positive displacement blowers air suction and discharge piping, air distribution piping and diffusers, sludge loading station, force main(s), valves.

Effects of Damage

In general-

- Damage will most likely have a minimal effect except in a situation where the sludge basins are discharging sludge.
- Loss of aeration will turn the sludge basins into facultative storage.
- Long-term loss of air may damage the diffusers.

Response

In general-

- If the sludge basins are discharging sludge then action should be taken immediately to contain the sludge and prevent it from reaching the receiving stream.
- If flood conditions exist, let water recede and then evaluate the situation. If sludge spill takes place fill out MODNR SSO/Bypass and AWR Deviation Notification forms, found in (Appendix 7). Make needed repairs and get back on line ASAP.
- Loss of air should be addressed as time permits.

Section III

Contingency Plans

Contingency Plan for Total Loss of Electrical Power

Goal: Develop strategies and to assign specific duties to plant staff: to provide for continuance of pumping at critical points of Plant; and to provide for at least primary treatment at the wastewater plant.

Response:

1. The employee on call must come to the plant and make sure the generator is going, then get into service one aerator in each ditch and at the minimum 2 clarifiers depending on flow conditions.
2. Get into service the head works building equipment.
3. In below freezing weather check to make sure heaters in all buildings are operating properly.
4. Check to make sure that lift stations are operating properly.
5. Check status of wastewater plant.
6. Check all lift stations, secure by taking one of the two pumps off line, and providing emergency pumping if needed.
7. Conduct a meeting to evaluate the situation and make necessary decisions as the need arises.

Contingency Plan for High Flows

Goal: Minimize solids wash out and provide for best treatment of all influent flow.

Note: During a high flow event both oxidation ditches will be needed to prevent solids wash out.

Response: Response depends on whether one ditch is in service or if both ditches are in service. Great care must be used when, at the onset of high flows, that sludge blanket depths are monitored. If sludge blankets are rising then several options present themselves, first, more clarifiers can be placed into service, if any is out, second, #1 and #4 carrousel aerators can be shut off reduce mixing in the ditch (es), third, #3 and #6 can be taken out of service to further reduce mixing in the ditch (es), fourth, all aerators can be taken out of service (for short periods of time, i.e. up to 8 hours) to eliminate mixing in the ditch (es). Or a combination of the above measures can be used. The overall goal is to save the mixed liquor suspended solids (mlss) in the ditch from being discharged in the receiving stream. Past high flow events have

demonstrated that proper management of flow through the plant can achieve good treatment (within NPDES permit standards). It is also important to note that effluent sampling should be done during high flow events to assure that NPDES permit standards are being met, and that proper documentation in the plant daily bench sheet must be maintained on all process changes to manage high flows. Whenever all the carrousel aerators are shut off to prevent solids wash out the event must be reported as a bypass at the WWTP. Always leave 1 aerator in each ditch going if at all possible, even if it means moving the oxidation ditch inlet gates to aerators #3 and #6 and running only those aerators. This will give the mixed liquor suspended solids (mlss) time to settle in the ditch before entering the clarifiers.

Bulking Sludge

Response:

If a clarifier is bulking sludge and flows are normal for dry weather, first raise splitter box gate to the clarifier or clarifiers that are bulking, then go over to the RAS pinch valve and open them up all the way and if that doesn't calm things down then go down in the RAS basement and clean pumps.

If the pumps are not clogged but is flowing clear water then there is probably a short circuit in the clarifier caused by structural damage of the rake mechanism. Shut flow off to the clarifier and drain it and check for damage. Put other clarifiers (if one is down) on line as appropriate.

If the pump is not clogged and the discharge is dirty, then check the other clarifier to see if it is bulking as well. There could be a toxic shock. First try shutting the aerators off closest to the outlet weir gates and if that doesn't work try moving the basin inlet gates to, (#3 and #6) and running only those aerators, will minimize solid loss, and may be an appropriate response.

Contingency Plan for Toxic Chemical Release

Toxic chemical release to the wastewater treatment plant will most likely take place in one of two forms, regardless of the toxic agent.

The first likely scenario would be the discovery, containment and cleanup of a fuel leak. This would involve participation of Lake Ozark Fire Department, Lake Ozark Emergency Response personnel and a HAZMAT unit. In order to accept this type of waste a few conditions must be met: first, the BTEX test result (if available) should be less than 2.13 mg/l; and second, the plant is operating under dry weather flow conditions. If both conditions are met then the waste can be placed into one of the basins that has been determined to be used for that purpose. The waste can then be diluted and intermittently fed into the treatment process to minimize shock on the biological community in the treatment process. Bench testing of the waste can also be performed to demonstrate if there will be problems to the bacterial community.

The second most likely scenario would be notification of a toxic release into the sewer system. This has never happened (at least the notification part) but if this condition should arise then the most likely first response would be to divert all flow to the designated basin. The second step would be to ascertain what type of toxic chemical it is (ask for MSDS information) and how much of the toxic chemical is in the system. The third step would be notification of City or Cities, Corporate and MODNR. With data available try to estimate when the chemical will arrive at the treatment plant and how long it will take to flush the chemical from the sewer system. This information will determine the length of time all flow will need to be diverted before it is safe to resume normal flow. Again, the availability of taking one basin off line will allow temporary containment (provided dry weather flows) and the ability to further treat the chemical and either release the chemical into the treatment process or allow for its removal and disposal at another location.

Contingency Plan for SSO's

SSO's can occur in both wet and dry weather.

Wet weather SSO's are usually caused by inflow and infiltration (I&I) of storm water into the wastewater collection system. A high rate of I&I can cause hydraulic overloading in the collection pipes and thus create an overflow in a manhole or a lift station.

Dry weather SSO's can occur due to collection pipe blockages, long term power fails, and /or lift station pump malfunction.

Whenever an SSO is observed use the Missouri Department of Natural Resources Wastewater Bypass Report Form (Appendix 7), along with the Deviation Notification Form (Appendix 7) to record the SSO event. Copies of these reports must be kept on file along with daily and monthly reports file. Wet weather bypasses at the WWTP are reported on the monthly monitoring report, and filed accordingly.

When bypasses occur at the treatment plant (flow discharged from the WWTP without proper treatment, and/or all aerators are shut off), then document the bypass in the plant daily bench sheet and start the effluent composite sampler. Bypasses from WWTP shall be noted on the monthly DMR, Daily bench sheet and Plant log book; until further notice.

Contingency Plan for Sludge Spills

Whenever sludge spills occur, documentation and cleanup services must begin immediately.

Documentation –

- Describe in the log book the location, cause and amount of the sludge spill.
- If the spill is greater than 25 gallons then treat the spill as a bypass and fill out the necessary documents (Appendix 7) and report the incident to the control authorities.

Clean Up –

- Treat spill area with lime
- Remove spilled material and dispose at the WWTP.
- If spill occurs on a public road way then use appropriate traffic control and warning signals as necessary

Appendix 1

Local Radio Stations

Call Letters	Frequency	Location	Phone#	Fax#
KRMS	AM 1150	Osage Beach, Mo	573-302-7000	
KRMS	FM 93.5	" " "	573-348-2779	
KLOZ	FM 92.7	" " "	573-302-1993	
KTKS	FM 95	Versailles, MO	573-378-5669	573-378-6640

Local Television Stations

Call Letters	Channel	Location	Phone#	Fax#
KMOS	PBS 7	Warrensburg, MO	573-543-4155	
KRCG	CBS 13	Jefferson City, MO	573-896-5144	

Local Newspapers

Name of Paper	Address	Contact Person	Phone#	Fax#
Lake News Focus	5107 Hwy. 54 Osg Bch		573-348-6050	
Lake Sun Leader	450 N. Hwy. 5 Camdenton	Justin	573-346-2132	
Eldon Advertiser	415 S, Maple St., Eldon		573-392-5658	
Leader-Statesman	104 W. Jasper, Versailles		573-378-5441	
Westside Star	400 N. Main St., Grvs Mls		573-374-3100	

Systems Personnel

Name	Position	Work Phone#	Mobile Phone#	Home Phone#
Gary Hutchcraft	Local Manager II	573-365-0455	573-216-8398	
John Hornback	Supervisor	573-365-0455	573-480-4065	573-369-2761
Darren Shenkel	Utility Worker I	573-365-0455	816-215-5550	
Gary Johnson	Division Manager	573-874-8080	314-581-6024	573-234-7946
Mark Mahler	Director of Compliance & Safe	573-874-8080 x226	573-825-8169	
Tony Sneed	AWR Director of Operations	573-874-8080 x203	256-278-1264	

City Personnel

Name	Position	Work Phone#	Mobile Phone#
Jeana Woods	City Admin. Osage Beach	573-302-2000 ext. 1010	573-280-1174
Chad Stark	Osage Beach Sewer Foreman	573-302-2000 ext 2006	573-280-2473
Dave VanDee	City Admin. Lake Ozark	573-365-5378	573-280-6992
Matt Michalik	Dir. P/W Lake Ozark	573-365-5378	573-216-6063
L.O. Police Dept.		573-365-5371	
O.B. Police Dept.		573-302-2010	

City Engineer

Name	Company	Work Phone#	Mobile Phone#	Fax#

Sewer Board

Name	Position/Department	Work Phone#
John Olivarri	Mayor / Osage Beach	573-302-2000
Gregory Massey	Board Member / Osage Beach	573-302-2000
Gary Hamner	Board Member / Osage Beach	573-302-2000
Gerry Murawski	Mayor / Lake Ozark	573-365-5378
Judy Neal	Board Member / Lake Ozark	573-365-5378

Local and County Authorities

Name	Position	Phone#	Fax#
Lake Ozark Fire Dept.		573-365-3380 or 911	573-365-3758
Osage Beach Fire Dept.		573-348-1221 or 911	
Miller Co. Sheriff Dept.		573-369-2341 or 911	
L.O. Police Dept.		573-365-5371 or 911	
O.B. Police Dept.		573-302-2010 or 911	
Miller County Health Dept.		573-369-2359	
Camden County Health Dept.		573-346-5479	

Local Ambulance Service

Name	Phone#	Emergency #
Osage Beach	573-302-2010	911
Miller County	573-369-2444	911

System Maps/Drawings

Name	Position	Work Phone#	Mobile Phone#	Home Phone#
Gary Hutchcraft	Local Manager	573-365-0455	573-216-8398	
	Osage Beach	573-302-2000		
Matt Michalik	Dir. P/W Lake Ozark	573-365-5378	573-216-6063	

Local Utilities/Services/Suppliers

Service	Contact	Company	Phone#	Mobile Phone
Phone	Bruce	AT&T	800-286-8313	573-286-0954
Electric	Brent	Ameren UE	800-552-7583	573-694-5914
Propane		Ferrell Gas	573-392-5400	573-280-7184
UV System	Walt Williams	ITT Wedeco	704-409-9818	
Standby Generator	Nelson Coblentz	Martin Energy Group	800-436-9190	573-681-8027
Laboratory	Colleen	Pace Labs	913-563-1406	
Electrician	Steve Durban	Aesthetix Electric	573-348-1429	573-219-0043
Electrician	Seth Agnew	Catalyst Electric	573-552-8488 ext 2	
Truck Repair	Larry	Roemer Equipment Repair	573-348-3733	
Truck Repair	Monte	Rapid Mobile Repair Ser.	573-346-3217	
Heat A/C	Herb	Controlled Heating & Air	573-348-5455	
Heat A/C & KVAR		Comfort Heating & Cooling	573-348-9999	
Auto Mechanic		Precision Auto	573-348-2233	
Auto Mechanic			573-365-1111	
Instrumentation	Mike Ross	Vandevanter Engineering	636-225-8133	314-422-2872
Instrumentation	Scott Keith	ECCO Electric	573-348-1798	573-524-3399
Electric Motors	Jim	Bowling Electric	573-346-4355	
Pumps / Motors	B.J. Hedrick	Evans Enterprises	417-886-8886	417-844-3607
Pumps / Motors	Ben	JCI / MEMC	573-636-7061	573-694-9555
Clarifiers	Field Service	Eimco	801-526-2000	
Pumps / Motors, Aerator Gear Boxes	Bruce	S & S Electric	573-581-7667	
Backhoe / Dirt Work	Steve Butler	Drain Masters, LLC		573-216-1169
Building Repair	Jeff Carroll	Above & Beyond	573-302-0354	573-286-2006
Building Repair	John	Missouri Builders	573-636-7733	
Chemical Supplier	Larry Startin	Brenntag	417-887-3663	417-593-0108
Digester Aerators	Patrick	EDI	573-474-9456	
Truck Tires	Delbert	Purcell Tire	573-348-4010	573-836-0038
Truck Tires	Kevin	McKnight Tire	573-635-0101	573-338-3350
Truck Tires	Correy	Clark Tire	573-374-8854	573-434-4539
Piping Supplies	Justin	HD Waterworks Supply	573-348-1273	
Welding Service	Gary Koerber	GL Welding		573-680-3957

Waste Haulers

Source	Address	Phone#
Amos Septic	Linn Creek, MO	573-346-5992
Camden County	Lake Ozark, MO	573-374-5850
Bullock Septic	Laurie, MO	573-374-6688
A & A Septic	Camdenton, MO	573-346-5123

Emergency Rental Equipment

Company	Equipment	Location	Contact Person	Phone#
Midway Rental	All Types	Eldon, MO	Jim or Tom Dial	573-392-1611
Lake Lifestyle Rentals	All Types	Osage Beach, MO		573-348-3250
A-B Rental	All Types	Camdenton, MO		573-346-7700

MODNR Contacts

Names	Office	Phone #	Fax #
Troy Potteiger	Osage Beach	573-348-4103	573-348-2568
E.C. West	Springfield	417-891-4300	417-891-4399
Sieu T. Dang	Springfield	417-891-4300	417-891-4399
Emergency Response	After Hours Call	573-634-2436	

Appendix 2

Chemical List / Facility Map

Chemicals:

Lab Office Building
- Hydrochloric acid
- Sulfuric acid
- Sodium Hydroxide
- Denatured Alcohol
- Weed Killer

Maintenance Room/Shop (located in old Chlorine Tank room) or UV building
- Chevron Gear Lube
- Transmission fluid
- Motor oil, various grades
- Anti-Freeze
- WD-40
- Dry Film Silicone
- Chain Lubricant

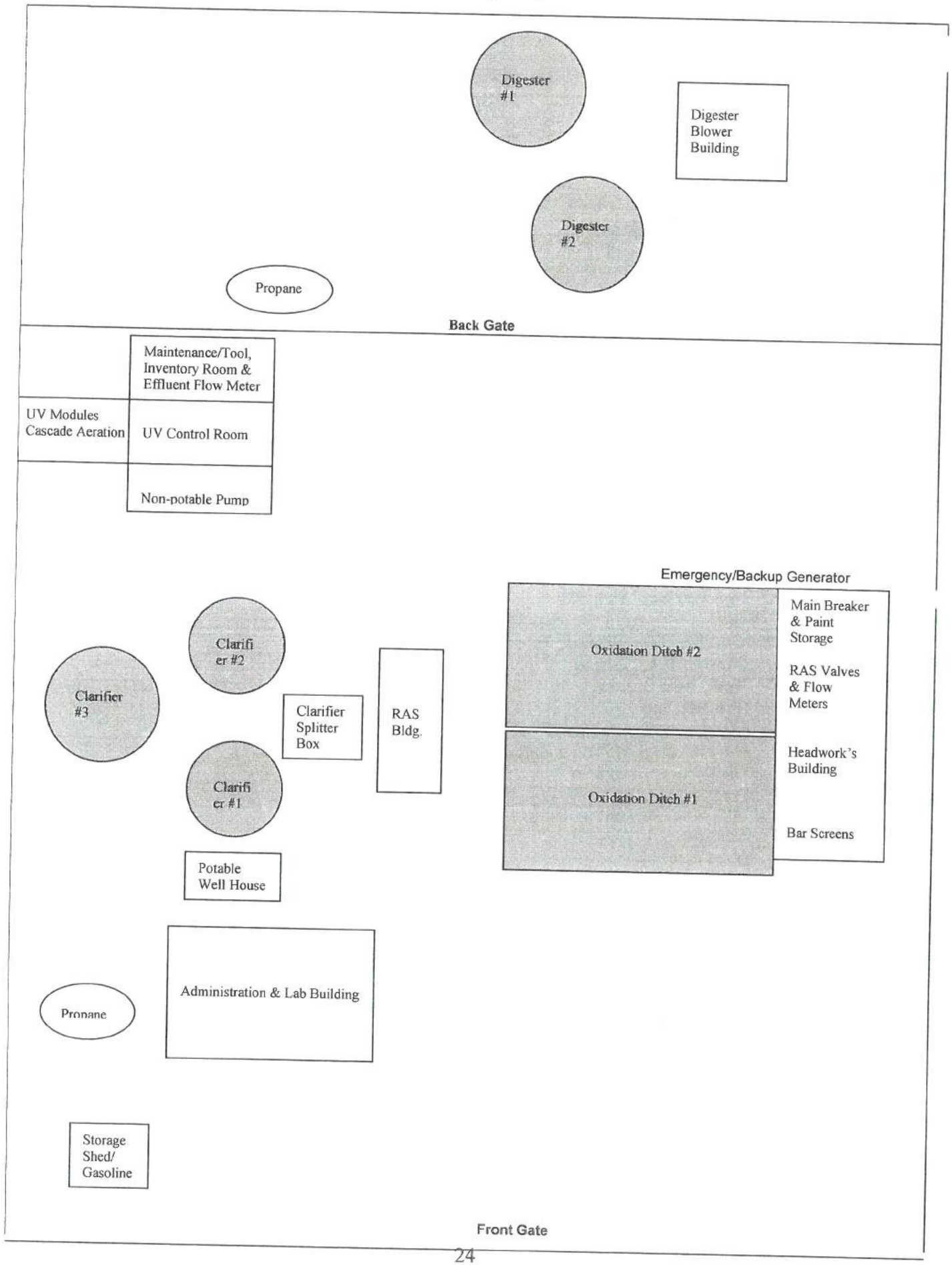
Sludge Digester Blower Building
- Hydrated bag Lime, 50lb bags

Headwork's Bldg. Storage Room
- Chevron Tube Grease
- Mystic tube Grease
- Hydraulic fluid
- Assorted cans spray paint
- Assorted cans building and grounds paint
- Paint thinner / solvents

Storage Shed by Admin. Bldg.
- Gasoline
- Weed eater oil

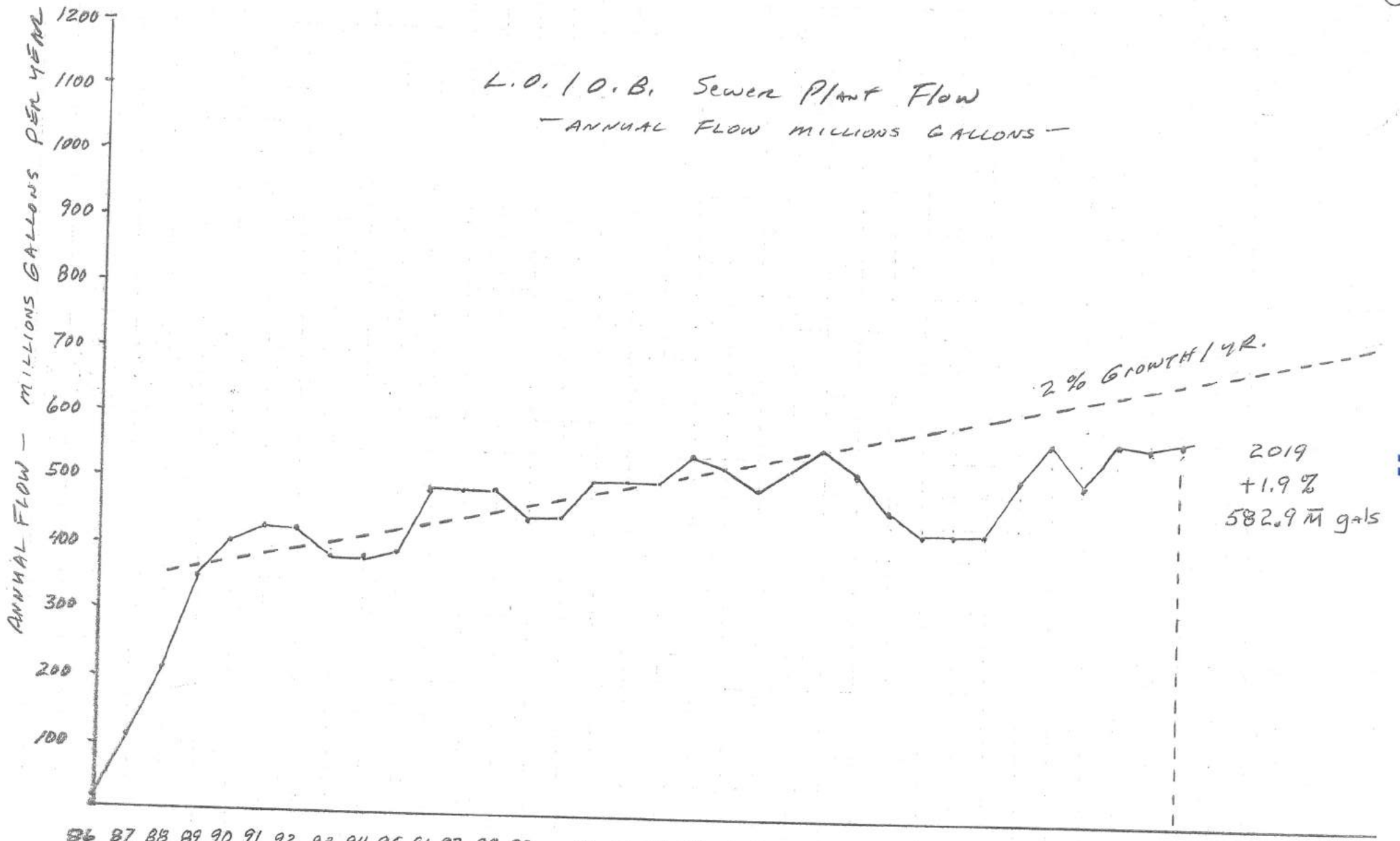
There are two 500-gallon liquid propane tanks located on the property; one is north of UV building and one west of Admin. Bldg. There is a 100-gallon portable diesel tank located normally stored at the sludge digester building over the hill.

Facility Map



L.O./O.B. Sewer Plant Flow

— ANNUAL FLOW MILLIONS GALLONS —

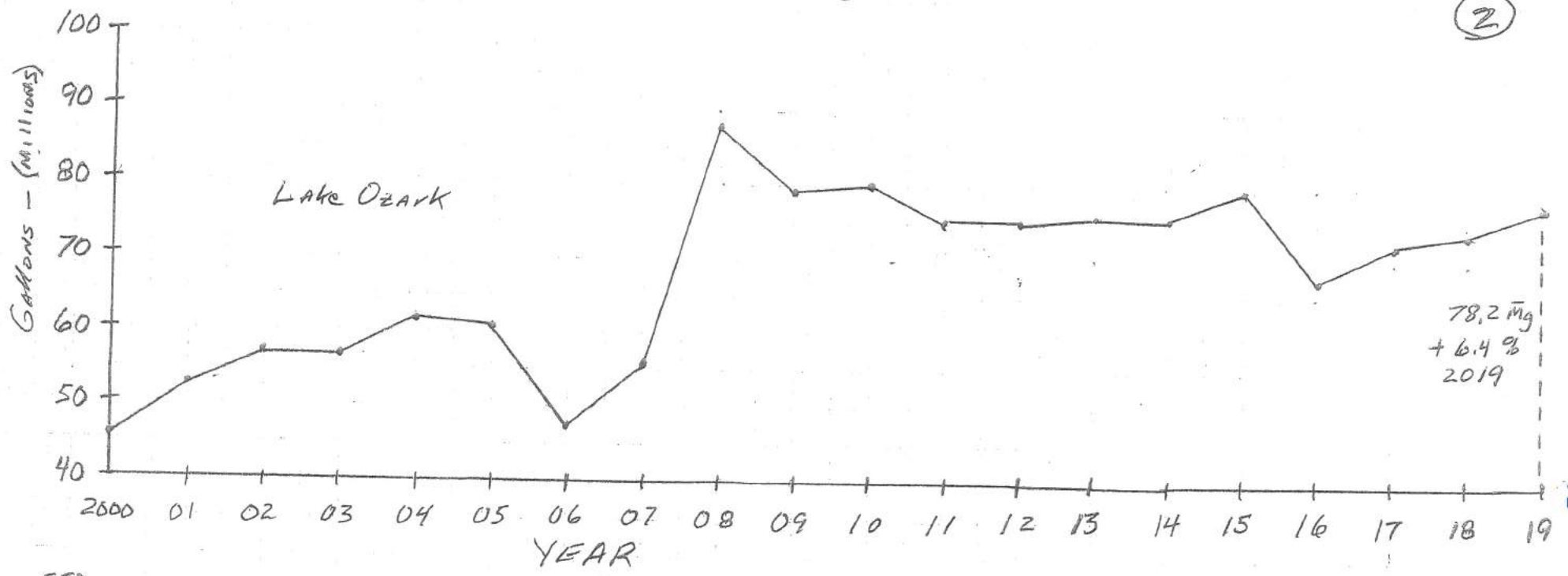


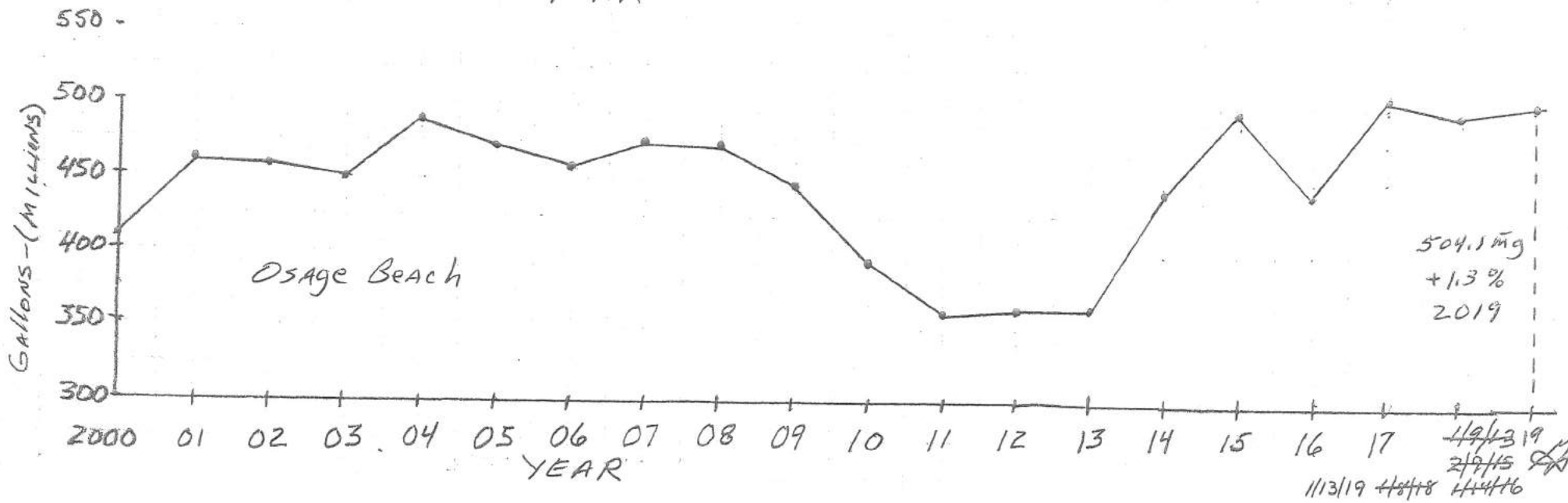
1/13/20 ~~11/4/16~~ ~~11/8/18~~ ~~11/9/13~~ ~~2/4/15~~ ~~11/15/11~~ ~~11/7/12~~ ~~6/15/09~~ ~~11/19/10~~

75

— SEWER FLOWS —
L.O. & O.B.

(2)

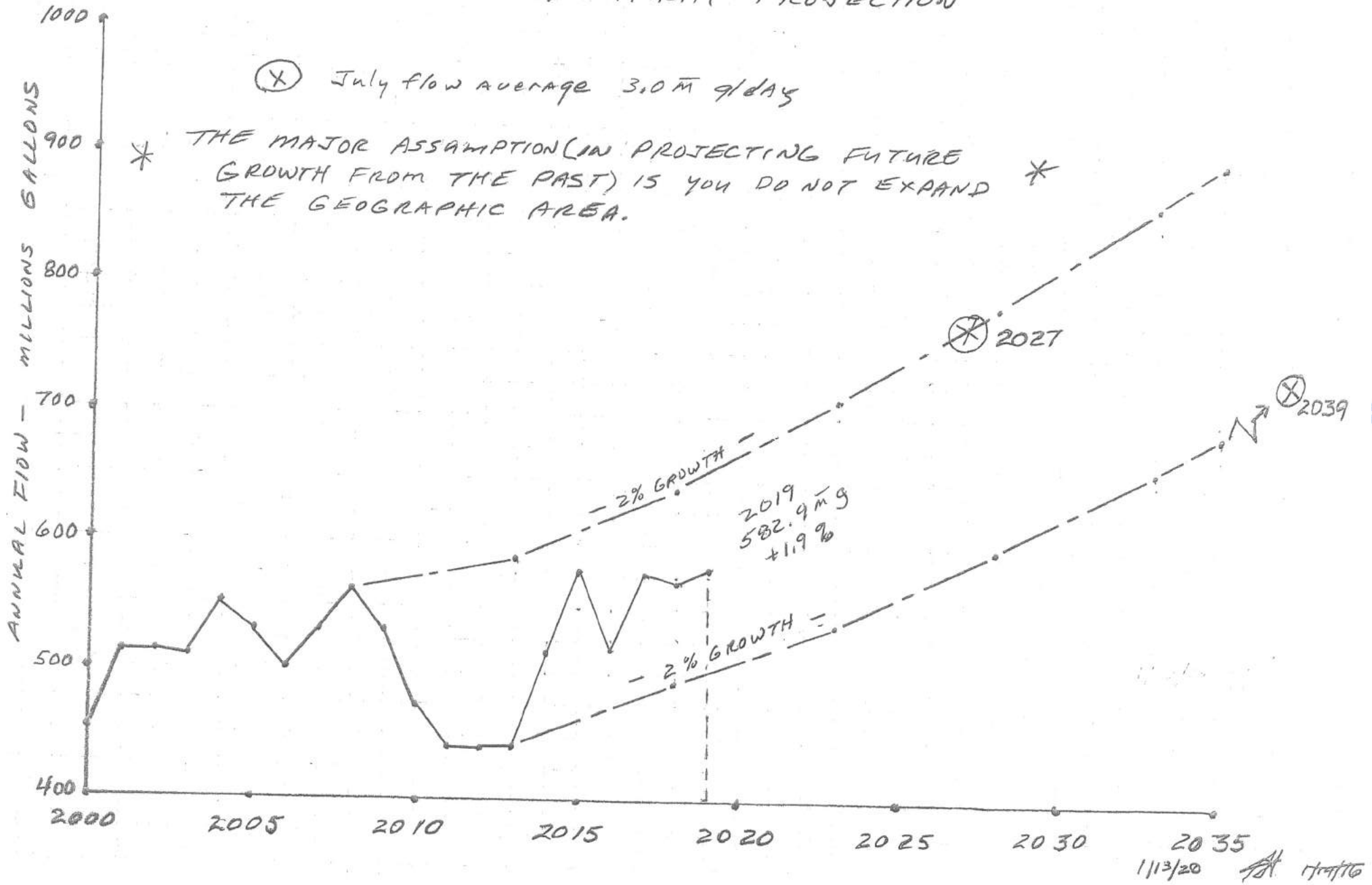




~~11/9/13~~ 2/9/15 ~~11/13/19~~ ~~4/8/18~~ ~~4/4/16~~

L.O. — O.B. SEWER PLANT
GROWTH / CAPACITY PROJECTION

(3)



1/13/20 HMTG