Municipal Water Pollution Prevention (MWPP) Annual Report Calendar Year 2013

For the

Jefferson County Wastewater Treatment Plants

as required by the
Alabama Department of Environmental Management NPDES Program

Prepared by
Jefferson County Commission
Environmental Services Department

May 31, 2014

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For the

Cahaba River WWTP

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May 31, 2014

JEFFERSON COUNTY COMMISSION

DAVID CARRINGTON - PRESIDENT
GEORGE F. BOWMAN
SANDRA LITTLE BROWN - PRESIDENT PRO TEMPORE
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ENVIRONMENTAL SERVICES

TONY PETELOS, COUNTY MANAGER

Office of

DAVID DENARD
Director of Environmental Services
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May 31, 2014

Mr. Nic Caraway, Water Division
Alabama Department of Environmental Management
Water Division – Municipal Branch
P.O. Box 301463
Montgomery, AL 36130-1463

RE: Municipal Water Pollution Prevention (MWPP)
Annual Report Calendar Year 2013

Mr. Caraway:

The Jefferson County Environmental Services Department submits the above referenced report for the Cahaba River Wastewater Treatment Facility, NPDES Permit No. AL0023027. Included is information as required in ADEM Form 41701/06ml, bypass/overflow event reports, MWPP Sewage Sludge Survey, and the Plant & Collection System Personnel Inventory.

If you have any questions regarding this information, please contact me at 205.325.5979 or Celeste Brown at Jefferson County Barton Laboratory at 205.238.3859.

Sincerely,

David Denard, Director
Environmental Services Department

pc: Celeste Brown, JCESD Barton Laboratory
Daniel White, JCESD Deputy Director
Gary Nelson, Cahaba River WWTP

MUNICIPAL WATER POLLUTION PREVENTION (MWPP)

ANNUAL REPORT

SUBMITTED BY:

TREATMENT FACILITY: Cahaba River WWTP NPDES #: AL0023027

MUNICIPALITY: Jefferson County Environmental Services Dept. COUNTY: Jefferson

CONTACT PERSON: David Denard
Municipal Official

Director of Environmental Services
Title

Telephone #: 205-325-5979 Fax #: 205-325-5239

Email Address: denardd@jccal.org

CHIEF OPERATOR: Gary Nelson
Name

Telephone #: 205-987-0648 Fax #: 205-402-7427

Email Address: nelsong@jccal.org

Date: May 14, 2014

REVIEWED BY: Daniel White P.E., ESD Engineer
Consulting Engineer

Telephone #: 205 214 8610 Fax #: 205 325 5688

Date: May 14, 2014

MWPP Annual Report
Information Source List

The following information will be needed to complete the compliance maintenance report that covers the calendar year of 2013 (due **May 31,** 2014).

Part 1 A. The average plant influent flow for each month (million gallons per day/MGD) during the year.
B. The average plant influent BOD (CBOD) for each month (mg/l and lb/day) in the year.
C. The plant's average design flow (MGD) and design BOD loading (lbs/day).

Part 2 A. The monthly average permit and DMR effluent concentration for BOD (CBOD), TSS, NH3-N, and/or TKN in mg/l for the year
B. The monthly average effluent limits and DMR loading for BOD, TSS, NH3-N, and/or TKN in lbs/day for the year

Part 3 The age of the treatment plant defined as the number of years since the last major reconstruction to increase the organic or hydraulic capacity of the plant. The last calendar year minus the year the new construction was brought on-line.

Part 4 Bypass and overflow information. This is the number of bypass or overflow events of untreated wastewater due to heavy rain or equipment failure whether intentional or inadvertent from all collection systems tributary to the treatment facility.

Part 5 A. Describe the characteristics and quantity of sludge generated.
B. If sludge is landspread, how many months of sludge storage does the plant have? This should include on-site and off-site storage from the treatment plant. The digestor capacity may be used in the calculation.

Part 6 A. Sludge Disposal Method
B. The number of approved land disposal sites for sludge available, and how many months or years these disposal sites will these be available for use.

Part 7 The number of sewer extensions installed in the community last year--the design population, design flow, and design BOD for each sewer extension.

Part 8 Operator Certification

Part 9 Financial Status

Part 10 Subjective Evaluation

Part 11 Summary Sheet

State of Alabama
MWPP Annual Report
Department of Environmental Management

Instructions to the Operator-in-Charge

1. Complete all sections of the MWPP Report to the best of your ability.

2. Parts 1 through 8 contain questions for which points will be generated. These points are intended to communicate to the Department and the governing body or owner the actions necessary to prevent effluent violations. Enter the point totals from Parts 1 through 8 on Part 11: Summary Sheet.

3. Add the point totals on Part 11: Summary Sheet.

4. Submit the MWPP Report to the governing body and the consulting engineer and owner for review and approval.

5. The governing body should pass a resolution which contains the following points:

   a. The resolution should acknowledge the governing body or owner has reviewed the MWPP Report.

   b. The resolution should indicate what actions will be taken to prevent effluent violations.

   c. The resolution should provide any other information the governing body or owner deems appropriate.

6. **The MWPP Report and the resolution must be submitted by May 31st to Municipal Section, Water Division, ADEM, P.O. Box 301463, Montgomery, AL 36130-1463.**

Facility Name: Cahaba River WWTP

Part 1: Influent Loading/Flows

A. List the average monthly volumetric flows and BOD_5 ($CBOD_5$) loadings received at your facility during the last calendar year.

Month	Column 1 Average Monthly Flowrate (MGD)	Column 2 Average Monthly BOD_5 ($CBOD_5$) Concentration (mg/l)	Column 3 Average Loading BOD_5 ($CBOD_5$) (lbs/day**)
January	11.8	108	9612
February	12.3	85	8670
March	10.6	120	9761
April	9.5	117	9204
May	8.5	156	10600
June	8.9	140	10392
July	9.3	142	10922
August	10.0	107	8460
September	8.3	150	10398
October	5.5	169	7811
November	6.3	164	8357
December	10.0	110	8722
Annual Avg.	9.2	131	9409

**As reported on NPDES Discharge Monitoring Reports (DMRs) and as required by EPA's NPDES Self-Monitoring System, User Guide, March 1985.

B. List the average design flow and average design BOD_5 loading for the facility below. If you are not aware of these design quantities, contact your consulting engineer or the Alabama Department of Environmental Management.

	Average Design Flow	Average Design BOD_5 Loading (lbs/day)
Design Criteria	12.0	19912
90% of the Design Criteria	10.8	17921

C. How many times did the monthly flow (Column 1) to the WWTP exceed 90% of design flow? _____ (Check the appropriate point total)

☑ 0 - 4 = 0 points ☐ 5 or more = 5 points

D. How many times did the monthly flow (Column 1) to the WWTP exceed the design flow? ____ (Check the appropriate point total)

☐ 0 = 0 points ☑ 1 - 2 = 5 points ☐ 3 - 4 = 10 points ☐ 5 or more = 15 points

E. How many times did the monthly BOD_5 (or $CBOD_5$)* loading (lbs/day) (Column 3) to the WWTP exceed 90% of the design loading? ____ (Check the appropriate point total)

☑ 0 - 1 = 0 points ☐ 2 - 4 = 5 points ☐ 5 or more = 10 points

F. How many times did the monthly BOD_5 (or $CBOD_5$)* loading (lbs/day) (Column 3) to the WWTP exceed the design loading? _____ (Check the appropriate point total)

☑ 0 = 0 points ☐ 1 = 10 points ☐ 2 = 20 points ☐ 3 = 30 points ☐ 4 = 40 points ☐ 5 or more = 50 points

G. Enter each point value marked for Cthrough F and enter the sum in the appropriate blank below.

C points = 0

D points = 5

E points = 0

F points = 0

TOTAL POINTS VALUE OR PART 1 5

Enter this value on Part 11: Summary Sheet.

*To obtain equivalent BOD_5 loading for comparison with design loading for those permittees using influent $CBOD_5$, divide annual average $CBOD_5$, loading in lbs/day from Part 1, A by 0.7.

Facility Name: Cahaba River WWTP

Part 2: Effluent Quality/Plant Performance

A. List the monthly average permit limits for the facility in the blanks below and the average monthly effluent DMR BOD_5, ($CBOD_5$) TSS, NH_3-N and/or TKN concentration produced by the facility during the last calendar year.

(1) NPDES Permit Concentration

	Months	BOD_5 ($CBOD_5$) (mg/l)	TSS (mg/l)	NH_3-N (mg/l)	TKN (mg/l)
Permit Limit	Dec-April	10.0	30.0	2.0	4.0
	May-Nov	4.0	30.0	1.0	2.0

(2) DMR Concentration

Qtr	Month	BOD_5 ($CBOD_5$) (mg/l)	TSS (mg/l)	NH_3-N (mg/l)	TKN (mg/l)
1	January	0.74	0.69	.003	0.27
	February	0.73	0.65	0.0	0.19
	March	0.80	1.35	0.0	0.25
2	April	0.57	0.72	.002	0.22
	May	0.55	1.77	0.0	0.25
	June	0.60	1.42	0.0	0.29
3	July	0.78	0.88	0.0	0.23
	August	0.78	0.82	0.0	0.22
	September	0.73	1.36	0.0	0.33
4	October	0.70	1.21	0.0	0.37
	November	0.72	0.33	0.0	0.35
	December	0.82	0.56	0.062	0.30
	Annual Avg.	0.71	0.98	0.01	0.27

B. List the monthly average permit limit and DMR loadings below.

(1) NPDES Permit Loading

	Months	BOD_5 ($CBOD_5$) (lbs/day)	TSS (lbs/day)	NH_3-N (lbs/day)	TKN (lbs/day)
Permit Limit	May-Nov	400	3002	100	200
	Dec-April	1000	3002	200	400

(2) DMR Loading

Qtr	Month	BOD_5 ($CBOD_5$) (lbs/day)	TSS (lbs/day)	NH_3-N (lbs/day)	TKN (lbs/day)
1	January	65	74	0.33	27
	February	75	65	0	19
	March	65	126	0	22
2	April	44	59	0.22	18
	May	38	125	0	17
	June	44	108	0	22
3	July	60	76	0	17
	August	66	65	0	18
	September	51	95	0	23
4	October	32	54	0	17
	November	38	21	0	18
	December	69	52	5.59	25
	Annual Avg.	54	77	0.51	20

C. During the past year did the BOD_5 concentration (mg/l) and/or loading (lbs/day) exceed the product of 1.4 times the monthly average permit limit during two months of any consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

D. During the past year did the BOD_5 concentration (mg/l) and/or loading (lbs/day), exceed the monthly average permit limit during four months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

E. During the past year did the effluent TSS concentration (mg/l) or loading (lbs/day) exceed the product of 1.4 times the monthly average permit limit during two months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

F. During the past year did the TSS concentration (mg/l) and/or loading (lbs/day) exceed the monthly average permit limit during four months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

G. During the past year did the NH_3-N or TKN concentration (mg/l) and/or loading (lbs/day) exceed the product of 1.4 times the monthly average permit limit during two months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

H. During the past year did either the NH_3-N or TKN concentration (mg/l) and/or loading (lbs/day), exceed the monthly average permit limit during four months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

I. Enter each point value checked for C through H in the blanks below.

C Points = 0
D Points = 0
E Points = 0
F Points = 0
G Points = 0
H Points = 0

HIGHEST INDIVIDUAL POINT VALUE FOR PART 2 (C-H) 0 (HIGHEST POINT = 121)
Enter this value on Part 11: Summary Sheet.

Facility Name: Cahaba River WWTP

Part 3: Age of the Wastewater Treatment Facility

A. What year was the wastewater treatment plant constructed or last reconstructed? 2005

Subtract the above answer from the report year to determine age:

Age = (Last Calendar year) - (Answer to A)

Age 8 = (2013) - (2005)

Enter Age in Part C below.

B. Check the type of treatment facility employed.

		Factor
X	Mechanical Treatment Plant	2.0
_____	Aerated Lagoon	1.5
_____	Stabilization Pond	1.0
_____	Other (Specify:_____)	1.0

C. Multiply the factor listed next to the type of the facility your community employs by the age of your facility to determine the total point value for Part 3:

2.0 (Factor) x 8 (Age) = 16 TOTAL POINT VALUE FOR PART 3

Enter the above value on Part 11: Summary Sheet. If the total point value exceeds 40, enter 40 on Part 11: Summary Sheet.

Facility Name: Cahaba River WWTP

Part 4: Bypassing and Overflows

A. How many bypass or overflow events of untreated wastewater occurred in the last year at the WWTP due to heavy rain? 0

B. How many bypass or overflow events of untreated wastewater occurred in the last year prior to the headworks of the WWTP due to heavy rain? 0

C. How many of the bypass or overflow events listed in Parts A and B have been corrected such that future bypass or overflow events at the same location due to heavy rain are not anticipated? 0

D. Add together Answers A and B and subtract Answer C from that total.
A + B – C = _____(Check the appropriate point total.)

☑ 0 = 0 points ☐ 1 = 5 points ☐ 2 = 10 points ☐ 3 = 15 points ☐ 4 = 20 points ☐ 5 = 25 points ☐ 6 = 30 points
☐ 7 = 35 points ☐ 8 = 40 points ☐ 9 = 45 points ☐ 10 = 50 points ☐ 11 or more = 100 points

E. How many bypass or overflow events of untreated wastewater occurred in the last year at the WWTP due to equipment failure? (This includes clogged/broken lines or manholes.) 0

F. How many bypass or overflow events of untreated wastewater occurred in the last year due to equipment failure prior to the headworks of the WWTP? (This includes clogged/broken lines or manholes.) 16

G. How many of the bypass or overflow events listed in Parts E and F have been corrected such that future bypass or overflow events at the same location due to the same equipment failure are not anticipated? 16

H. Add together Answers E and F and subtract Answer G from that total.
E + F - G = _____(Check the appropriate point total.)

☑ 0 = 0 points ☐ 1 = 5 points ☐ 2 = 10 points ☐ 3 = 15 points ☐ 4 = 20 points ☐ 5 = 25 points ☐ 6 = 30 points
☐ 7 = 35 points ☐ 8 = 40 points ☐ 9 = 45 points ☐ 10 = 50 points ☐ 11 or more = 100 points

I. Add point values circled in D and H and enter the total in the blank below.

TOTAL POINT VALUE FOR PART 4 0
Enter this value on Part 11: Summary Sheet.

All bypass or overflow events that have occurred in the last year (for any reason) must be individually reported with this MWPP report.

Facility Name: Cahaba River WWTP

Part 5: Sludge Quantity and Storage

A. Please provide information concerning sludge quantity, characteristics, and storage practices based on available data as requested on the *MWPP Sewage Sludge Survey,* ADEM Form 419.

B. How many months of sludge storage capacity does the wastewater treatment facility have available, either on-site or off-site? (i.e., How many months can the facility operate without land spreading or disposing of sludge?) 4 months

(Check the appropriate point total.)

Greater than or equal to 4 months	= 0 points	☑
Less than 4 months, but greater than or equal to 3 months	= 10 points	☐
Less than 3 months, but greater than or equal to 2 months	= 20 points	☐
Less than 2 months, but greater than or equal to 1 month	= 30 points	☐
Less than one month	= 50 points	☐

TOTAL POINT VALUE FOR PART 5 0
Enter this value on Part 11: Summary Sheet.

Part 6: Sludge Disposal Practices and Sites

A. Please provide the sludge disposal practices and site information based on available data as requested on the *MWPP Sewage Sludge Survey,* ADEM Form 419.

B. How many months or years does the facility have access to and approval for sufficient land disposal sites to provide proper land disposal? (Check the appropriate point total.)

36 or more months	= 0 points	☐
24 - 35 months	= 10 points	☐
12 - 23 months	= 20 points	☑
6 - 11 months	= 30 points	☐
Less than 6 months	= 50 points	☐

TOTAL POINT VALUE FOR PART 6 20
Enter this value on Part 11: Summary Sheet.

Facility Name: Cahaba River WWTP

Part 7: New Development

Are there any major new developments (industrial, commercial, or residential) in the last calendar year or anticipated in the next 2-3 years such that either flow or BOD_5 loadings to the sewage system could significantly increase? Estimate additional loadings below.

Design Population:_____ Equivalent (PE)	Design Flow:_____MGD	Design BOD_5:_____lbs/day

List industrial and/or residential developments.

No major new development planned.

Will the additional loading overload the plant? (Check the appropriate point total.)

No = 0 points ☑ Yes = 121 points ☐

Enter the point total in the blank below.

TOTAL POINT VALUE FOR PART 7 0 (highest point total = 121)
Enter this value on Part 11: Summary Sheet.

Part 8: Operator Certification

Complete the *Plant and Collection System Personnel Inventory,* ADEM Form 441.

Do both the plant operator and collection system staffing comply with ADEM Administrative Code; Division 10, Operator Certification Program? (Check the appropriate point total.)

Yes = 0 points ☑ No = 121 points ☐

TOTAL POINT VALUE FOR PART 8 0 (highest point total = 121)
Enter this value on Part 11: Summary Sheet.

Facility Name: Cahaba River WWTP

Part 9: Financial Status

A. Are User-Charge Revenues sufficient to cover operation and maintenance expenses? If no, how are O&M costs being financed? ***Include user charge rates***.

Revenues are sufficient. The below values are based on a 5/8" meter and 6,000 gallons water use. Jefferson County has a three tier block rate structure for residential users for 0-3, 4-6, and 7+ ccf water use.

Residential Minimum 15.00 Plus rate 6.02; 9.36; 10.69 /1,000 gal.

Industrial Minimum 15.00 Plus rate 10.51 /1,000 gal.

Monthly residential rate based on 6,000 gallons usage $ 56.04 (includes 15% credit for residential)

Please complete the above information based on your user charge rates for the report year. You may attach a sample water and sewer bill for clarity.

B. What financial resources are available to pay for the wastewater improvements and/or reconstruction needs?

In 2013, Jefferson County issued Series 2013 Sewer Warrants that fund capital improvements through 2023 at an annual average rate of $71.9 million over the 10-year period.

Part 10: Subjective Evaluation

A. Describe briefly the physical and structural conditions of the wastewater treatment facility.

Most of the WWTP was upgraded or newly constructed in 2005 and is in good condition. Some equipment and processes were constructed in the 1970s, 80s, and 90s and are in fair to average condition. Maintenance and refurbishments are planned for assets needing improvements.

B. Describe the general condition of the sewer system (sewer lines, manholes, lift stations).

The Cahaba sewer system includes roughly 1,950,000' of pipe and 23 pump stations. The system's performance is acceptable but showed a higher incidence of SSOs than desired. SSES investigations have been completed, and repairs, replacements, and improvements are planned for summer 2014.

C. What sewage system improvements does the community have planned for construction in the next 5 years?

Cahaba River WWTP to Valley Creek WWTP Sludge Force Main; Repairs, replacements, and collection system rehabilitation bidding summer 2014; (4) Hoover area pump station improvements; Cahaba River WWTP Phase I (under construction) and Phase II TMDL Improvements.

D. What is the theoretical design life of the plant, and what is the estimated remaining useful life of the wastewater treatment facility?

The useful design life of structures is 50 years and associated mechanical and electrical equipment is between 15-25 years. Most of the WWTP was upgraded or newly constructed in 2005. The estimated remaining useful life is 42 years.

E. What problems, if any, over the last year have threatened treatment or conveyance within the system?

The SSOs in Cahaba in 2013 were primarily caused by blockages from grease. The County is committed to reducing preventable SSOs through improved maintenance practices and system renewal.

F. Is the community presently involved in formal planning for treatment facility upgrading?

No.

G. How many days in the last year were there residential backups at any point in the collection system for any reason other than clogging of the lateral connection? 19

H. Does the plant have a written plan for preventive maintenance on major equipment items? If yes, describe.

Yes. O & M Manuals are used for all equipment maintenance schedules. Preventive maintenance schedules are input into the INFOR maintenance system and PM work orders are automatically generated. All equipment PM schedules and records are maintained in the INFOR system.

I. Does this preventive maintenance program depict frequency of intervals, types of lubrication, and other preventive maintenance tasks necessary for each piece of equipment? (Check the appropriate response.) Yes ☑ No ☐

J. Are these preventive maintenance tasks, as well as equipment problems, being recorded and filed so future maintenance problems can be assessed properly? (Check the appropriate response.) Yes ☑ No ☐

K. Describe any major repairs or mechanical equipment replacement made in the last year and include the approximate cost for those repairs. Do not include major treatment plant construction or upgrading programs.

UV Rebuild (2 Banks) $133,128; UVT Analyzer $17,000; Cerlic TSS Meter $3,400;

Dewatering Press Gearboxes $7,299; Al Seier Expansion Joint Replace $9,000; A/C Blower Building $6,000;

Dewatering Press Solids Meter $2,400; BNR 25 HP Gear Box $25,535

L. List any additional comments. (Attach additional sheets if necessary.)

None

Facility Name: Cahaba River WWTP

Part 11: Summary Sheet

1. Enter in the values from Parts 1 through 8 in the left column below. Add the numbers in the left column to determine the MWPP Report point total the wastewater system generated for the previous calendar year.

Actual Values	Maximum Possible
Part 1 5 points	80 points
Part 2 0 points	121 points
Part 3 16 points	40 points
Part 4 0 points	200 points
Part 5 0 points	50 points
Part 6 20 points	50 points
Part 7 0 points	121 points
Part 8 0 points	121 points
Total 41 points	783 points

2. Check the facility type that best describes the plant's treatment and disposal of wastewater.

- [✓] Mechanical plant with surface water discharge
- [ ] Aerated Lagoon or stabilization pond with surface water discharge
- [ ] Mechanical plant using land disposal of liquid wastes
- [ ] Aerated Lagoon or stabilization pond using land disposal of liquid wastes

3. Check the range that describes the action needed to address problems identified in the report.

- [✓] 0 - 70 pts. Actions as Appropriate*
- [ ] 71 - 120 pts. Departmental Recommendation Range*
- [ ] 121 – 783 Municipality Action Range*

***Other actions may be required by NPDES outside the scope of this report.**

4. Complete the *Municipal Water Pollution Prevention Resolution Form*, ADEM Form 418.

5. In Question 1, do any of the actual point values in the left column equal the maximum possible points in the right column? (Check the appropriate response) Yes ☐ No ☑

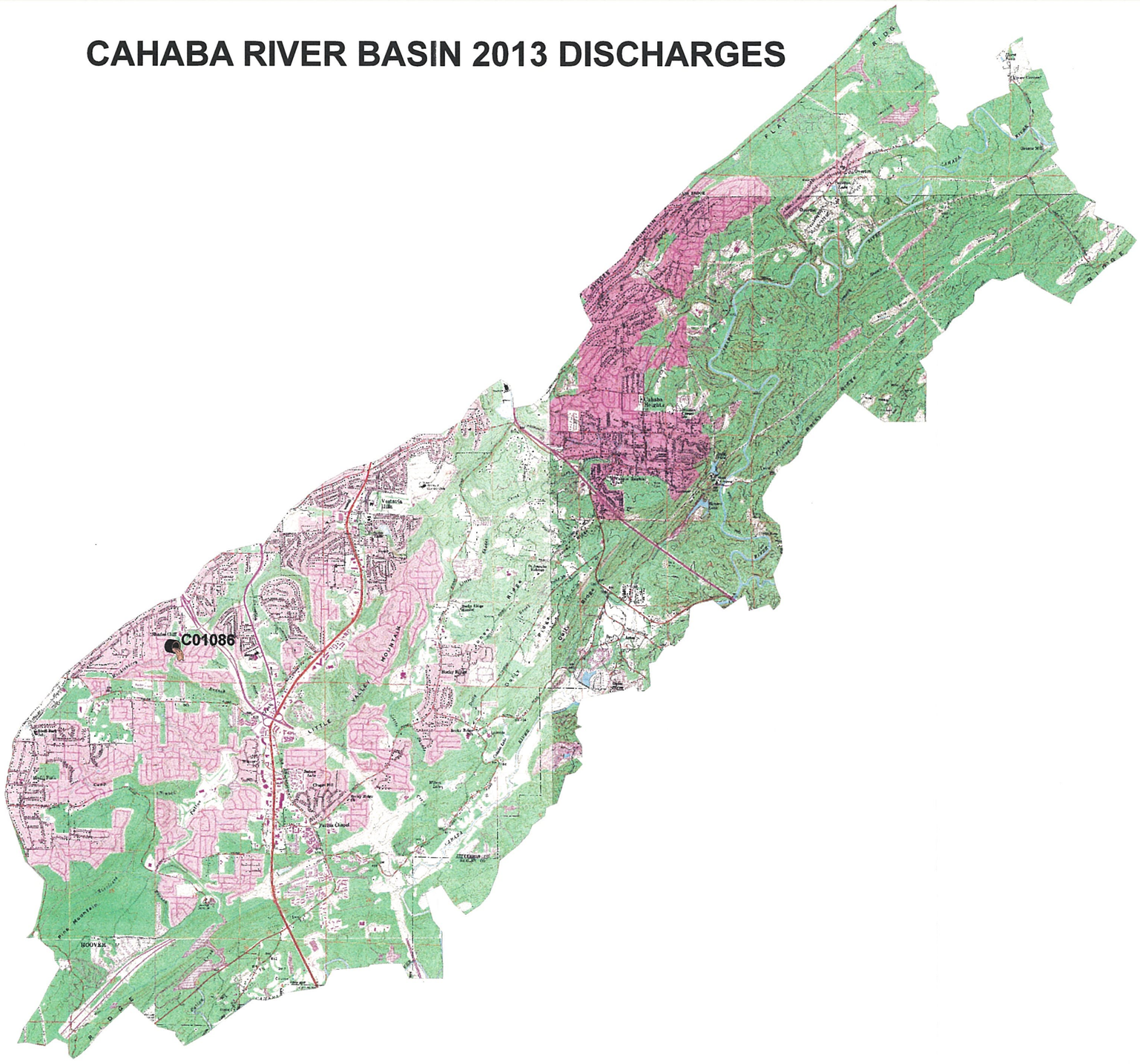
If yes, provide a written explanation for this situation in the space below.

Cahaba River Wastewater Treatment Plant

ATTACHMENT 2 – Raw Sewage Bypass and

SUMMARY

CAHABA RIVER BASIN 2013 DISCHARGES



NOTE: OVERFLOWS SHOWN ARE OVER 10,000 GALLONS.

JEFFERSON COUNTY
ENVIRONMENTAL SERVICES
PLOTTED: 2-11-14

Summary of Unpermitted Discharges - Cahaba River

January 01, 2013 through December 31, 2013

NOTE: Quantities shown in the column "Est. Volume" are ESTIMATED ONLY. These estimates are the County's best determination of the discharge volume, based upon site-determinable information and accepted estimating methods. However, such estimates are subject to a high number of variables which are completely beyond the County's control and which can have a significant effect upon the calculated amount. Therefore, these estimates are to be used for relative comparison only, not as actual discharge volumes.

Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*
C01050	1/30/13	2650 Gresham Drive	Cahaba	Ground Absorbed	312	Manhole	Grease/ Rags	Moderate Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
C01076	4/26/13	220 Summitt Blvd	Cahaba	Storm Drain	4,698	Manhole	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
C01077	4/30/13	2650 Gresham Dr	Cahaba	Little Shades Creek	172	Manhole	Grease/ Rags/ Rocks	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
C01086	8/9/13	2250 Sumpter St/ 2317 Dartmouth Dr	Cahaba	Ground Absorbed/ Storm Drain/ Huckleberry Branch	36,052	Manhole	Construction Damage/ Roots/ Rocks	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes: Construction crews working at Shades Mountain Elementary knocked the ring and lid off of the manhole causing sewer lines to be filled with gravel.										
C01103	12/29/13	3701 Chestnut Ridge Place	Cahaba	Ground Absorbed	1,080	Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04325	1/14/13	105 Summit Blvd (Summit PS)	Cahaba	Ground Absorbed	340	Pump Station	P.S. Equipment Failure	Moderate Rain	Pump Station Repaired	Brian Champion	Sewer Maintenance Supervisor
	Notes: #2 pump cable was caught in the pump causing the main breaker to trip disabling both pumps. The breaker was reset which restored station and stopped overflow.										

NOTE: Quantities shown in the column "Est. Volume" are ESTIMATED ONLY. These estimates are the County's best determination of the discharge volume, based upon site-determinable information and accepted estimating methods. However, such estimates are subject to a high number of variables which are completely beyond the County's control and which can have a significant effect upon the calculated amount. Therefore, these estimates are to be used for relative comparison only, not as actual discharge volumes.

Event No.	Date Reported	Location	Collection System	Ultimate Destination	Est. Vol. (gal)	Source	Cause	Weather	Action Taken	Person Reporting	Title
M04336	1/24/13	2240 Rocky Ridge Rd	Cahaba	Ground Absorbed	1,048	Manhole	Roots/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04370	3/11/13	2844 Regal Circle	Cahaba	Drainage Ditch/ Storm Drain	112	Manhole	Grease	Moderate Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04374	3/18/13	2219 Avanti Lane	Cahaba	Hurricane Creek	756	Manhole	Debris/ Rags	Light Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04396	4/15/13	4830 Pinedale Way	Cahaba	Storm Drain	678	Cleanout	Roots	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04442	9/5/13	1760 Napier Dr	Cahaba	Ground Absorbed	120	Manhole	Grease/ Roots/ Rags	No Rain	Blockage Repaired	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04455	10/16/13	3224 Mockingbird Ln	Cahaba	Ground Absorbed		Cleanout	Plug in the Line	No Rain	By-pass Pump Started	Brian Champion	Sewer Maintenance Supervisor
	Notes: Volume was not determinable.										
M04470	11/26/13	3416 Water Oak Drive	Cahaba	Drainage Ditch/ Shades Creek	4,550	Cleanout	Debris	Heavy Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04478	11/29/13	2000 Montreat Pkwy	Cahaba	Storm Drain	50	Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										

NOTE: Quantities shown in the column "Est. Volume" are ESTIMATED ONLY. These estimates are the County's best determination of the discharge volume, based upon site-determinable information and accepted estimating methods. However, such estimates are subject to a high number of variables which are completely beyond the County's control and which can have a significant effect upon the calculated amount. Therefore, these estimates are to be used for relative comparison only, not as actual discharge volumes.

Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*
M04481	12/3/13	1628 Stonewall Dr	Cahaba	Storm Drain	3,625	Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04499	12/21/13	3234 Tyrol Lane	Cahaba	Storm Drain	250	Manhole	Grease/ Roots	Moderate Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										

Cahaba River Wastewater Treatment Plant

ATTACHMENT 3 – MWPP Sewage Sludge

SURVEY

2013 MWPP SEWAGE SLUDGE SURVEY

Facility Background Information:

1. Facility Information — Permit Number: AL0023027
   - Name: Cahaba River Wastewater Treatment Plant
   - Street Address: 3900 Veona Daniels Road
   - County: Jefferson

2. Facility Contact
   - Name: Gary Nelson
   - Title: Plant Manager
   - Telephone: (205) 987-0648
   - Permittee Name: Jefferson County Commission
   - Mailing Address: Suite A-300, 716 Richard Arrington, Jr. Blvd. N.
     Birmingham, AL 35203

Facility Flow Information

1. Facility Wastewater Treatment Capacity
   - Avg. Daily Flow for 2012: 9.2 MGD
   - Facility Design Capacity: 12.0 MGD

2. Estimated Septage Quantity Handled (Residuals Removed from Septic Tank Systems)
   - Average Domestic Septage: N/A gallons per month
   - Average Commercial Septage: N/A gallons per month

3. Method of Septage Processing
   - [ ] Mixed with Influent Wastewater for Treatment
   - [ ] Mixed with Sewage Sludge
   - [x] N/A

4. Estimated Percentage Contributing Wastewater Flow
   - Residential: 90 %
   - Industrial: %
   - Other: 10 % Describe: Commercial

5. List type of wastewater treatment process(es) utilized at this facility:
   Screening, Grit Removal, 5-Stage BNR Process, Clarification, Sand Filtration, UV Disinfection

6. Estimated sewage sludge wasting rate at this facility: lb/day dry weight
   or 105,816 gallons per day

7. Estimated untreated sludge received from off site: N/A lb/day dry weight
   or gallons per day

8. Estimated percent solids of combined sewage sludge prior to treatment: 1.0 %

9. List the sewage sludge treatment processes used in preparing sludge for final use or disposal:

	Sludge Quantity (untreated pounds per day)
Thickening	
Aerobic Digestion	
Mechanical Dewatering (Belt Filter Press)	

10. Estimate the total volume of sludge generated: 1,207 (dry U.S. tons per year)

Sludge Disposal Methods

1. Which of the following describes the current method of sewage sludge disposal for this facility:

	Current Practices: Approved by ADEM Yes	Current Practices: Approved by ADEM No	Current Practices: Quantity (dry U.S. tons/year)	Proposed Practices: Approved by ADEM Yes	Proposed Practices: Approved by ADEM No
a. [x] Land Application, Bulk Shipped			1,207		
[x] Agriculture	x				
[ ] Forest					
[ ] Public Contact					
[ ] Lawn/Home Garden					
b. [ ] Land Application, Bagged/Other Container					
[ ] Agriculture					
[ ] Forest					
[ ] Public Contact					
[ ] Lawn/Home Garden					
c. [ ] Incineration					
d. [ ] Subtitle D Landfill (Disposal Only)					
e. [ ] Lined Treatment Lagoon or Stabilization Pond					
f. [ ] Unlined Lagoon or Stabilization Pond					
g. [ ] Other (Please Describe)					

2. If "f" was selected above and sludge is stored for 2 or more years, enter the distance between the surface disposal site and the property line: N/A feet

Pollutant Concentrations:

1A. Enter the total concentrations of the following analytes using existing data. Do not enter TCLP results.
Flat Top/Bessie Mines Land Reclamation Site

Analyte	Concentration (mg/kg or ppm)	Sample Type	Sample Date	Detection Level of Analysis (PQL), mg/kg
Arsenic	<PQL	GRAB	*	11.0
Cadmium	<PQL	GRAB	*	5.0
Chromium	19.3	GRAB	*	6.0
Copper	426.7	GRAB	*	5.0
Lead	<PQL	GRAB	*	12.0
Mercury	1.2	GRAB	*	0.03
Molybdenum	8.1	GRAB	*	6.0
Nickel	20.0	GRAB	*	6.0
Selenium	<PQL	GRAB	*	12.0
Zinc	781.7	GRAB	*	8.0
Ammonium-Nitrogen	N/A	N/A	*	N/A (.05)
Nitrate-Nitrogen	N/A	N/A	*	N/A (.05)
Total Kjeldahl Nitrogen	49,333	GRAB	*	0.09

2. Enter the estimated or determined percent solids of the sewage sludge when sampled for the above analysis: 12 %

Treatment Provided for Sewage Sludge at the Facility

1. Which class of pathogen reduction does the sewage sludge meet at the facility? (As defined in 40 CFR Part 503)

- [ ] Class A
  - [ ] Alternative A1 - Time and Temperature
  - [ ] Alternative A2 - Alkaline Treatment
  - [ ] Alternative A3 - Analysis and Operation
  - [ ] Alternative A4 - Analysis Only
  - [ ] Alternative A5 - Processes to Further Reduce Pathogens (PFRP)
    - [ ] Heat Drying
    - [ ] Pasteurization
    - [ ] Composting
    - [ ] Thermophilic Aerobic Digestion
    - [ ] Gamma Ray Irradiation
    - [ ] Heat Treatment
    - [ ] Beta Ray Irradiation
  - [ ] Alternative A6 - PFRP Equivalent _____

- [x] Class B
  - [x] Alternative B1 - Fecal Coliform Count
  - [x] Alternative B2 - Process to Significantly Reduce Pathogens (PSRP)
    - [x] Aerobic Digestion
    - [ ] Composting
    - [ ] Air Drying
    - [ ] Lime Stabilization
    - [ ] Anaerobic Digestion
  - [ ] Alternative B3 - PSRP Equivalent _____

- [ ] Neither or Unknown

Vector Attraction Control

- [ ] Option 1 - Minimum 38% Reduction in Volatile Solids
- [ ] Option 2 - Anaerobic Processes, with Bench-Scale Demonstration of Volatile Solids Reduction
- [ ] Option 3 - Aerobic Processes, with Bench-Scale Demonstration of Volatile Solids Reduction
- [ ] Option 4 - Specific Oxygen Uptake Rate (SOUR) for Aerobically Digested Sludge
- [ ] Option 5 - Aerobic Processes plus Elevated Temperature
- [ ] Option 6 - Raised pH to 12 and Retained at 11.5
- [ ] Option 7 - 75% Solids with no Unstabilized Solids
- [ ] Option 8 - 90% Solids with Unstabilized Solids
- [ ] Option 9 - Injection Below Land Surface
- [x] Option 10 - Incorporation into Soil within 6 or 8 Hours
- [ ] Option 11 Covering Active Sewage Sludge Unit Daily
- [ ] None of the Above

Groundwater Monitoring

1. If disposal practice is surface disposal or land application, is groundwater monitoring required or performed at the site?

- [ ] Yes
- [x] No

(If yes, please submit a copy of the groundwater monitoring reports along with this survey. Also please provide the approximate depth to groundwater and the groundwater monitoring procedures used to obtain the data.)

Land Application of Sewage Sludge

Answer the following questions if sewage sludge is applied to land.

1. If sewage sludge is land applied in bulk form, what type of crop or other vegetation is grown on this site?

Tifton Bermuda Grass, Ryegrass

2. If sewage sludge is land applied in bulk form, what is the nitrogen requirement for this crop or vegetation?

600 lb/acre/year (Reclamation Site)

3. If sewage sludge is land applied in bulk form, briefly describe the nature of any complaints filed from neighbors?

Note: Permittees that submitted the "Annual Report Review Form" for sludge to the EPA may submit a copy with the MWPP in lieu of this Attachment.

Cahaba River Wastewater Treatment Plant

ATTACHMENT 4 – Plant and Collection System

Personnel Inventory

PLANT AND COLLECTION SYSTEM PERSONNEL INVENTORY

FACILITY NAME: Cahaba River WWTP PLANT GRADE: IV

PERMIT NUMBER: AL0023027

PLANT SUPERINTENDENT: Gary Nelson TEL. # (205) 987-0648

SYSTEM MANAGER: David Denard TEL. # (205) 325-5979

PLANT OPERATORS:

	NAME	GRADE OR TRAINEE STATUS	OPERATOR NO.	EXP. DATE
1.	Gary Nelson	IV	C003933	2/28/2016
2.	Jeremy Creel	IV	C001691	11/30/2015
3.	Derrick Brooks	IV	C001433	8/31/2016
4.	Tommy Carney	IV	C004047	9/30/2016
5.	Zada Nygren	IV	C003372	6/30/2015
6.	Bill Morrow	IV	C003750	12/31/2014
7.	Andrew Hudson	IV	C000779	11/30/2015
8.	Joe Willoughby	IV	C002615	9/30/2015
9.	Tommie Bradford	IV	C001269	8/31/2015
10	Jonathan Gardner	IV	C007020	3/31/2015

COLLECTION SYSTEM OPERATORS:

1.				
2.				
3.				
4.				

	MAN HRS./WK	NUMBER
MANAGEMENT/SUPERVISOR	80	2
OPERATOR(S):		
GRADE I-C		
GRADE I		
GRADE II		
GRADE III		
GRADE IV	320	8
DESIGNATED TRAINEE(S)		
LABORATORY		
MAINTENANCE	80	2
OTHER PLANT WORKERS	200	5

AVERAGE NUMBER OF EMPLOYEES PER SHIFT:

		START TIME
1ST	9	700
2ND	4	1500
3RD	4	2300

OPERATOR SHIFTS NORMALLY WORKED EACH DAY:

	SUN	MON	TUES	WED	THURS	FRI	SAT
1ST	X	X	X	X	X	X	X
2ND	X	X	X	X	X	X	X
3RD	X	X	X	X	X	X	X

ADEM USE ONLY

	YES	NO
1. DOES PLANT OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		
2. DOES COLLECTION SYSTEM OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		

PLANT AND COLLECTION SYSTEM PERSONNEL INVENTORY

FACILITY NAME: Cahaba River WWTP PLANT GRADE: IV

PERMIT NUMBER: AL0023027

PLANT SUPERINTENDENT: Gary Nelson TEL. # (205) 987-0648

SYSTEM MANAGER: David Denard TEL. # (205) 325-5979

PLANT OPERATORS:

	NAME	GRADE OR TRAINEE STATUS	OPERATOR NO.	EXP. DATE
1.	Eddie Crumley			
2.	Rodney Franklin			
3.	Richard Hall			
4.	Willie McClain			
5.	Ernest Minniefield			
6.				
7.				
8.				
9.				
10.				

COLLECTION SYSTEM OPERATORS:

1.				
2.				
3.				
4.				

	MAN HRS./WK	NUMBER
MANAGEMENT/SUPERVISOR		
OPERATOR(S):		
GRADE I-C		
GRADE I		
GRADE II		
GRADE III		
GRADE IV		
DESIGNATED TRAINEE(S)		
LABORATORY		
MAINTENANCE		
OTHER PLANT WORKERS	40	5

AVERAGE NUMBER OF EMPLOYEES PER SHIFT:

		START TIME
1ST		
2ND		
3RD		

OPERATOR SHIFTS NORMALLY WORKED EACH DAY:

	SUN	MON	TUES	WED	THURS	FRI	SAT
1ST							
2ND							
3RD							

ADEM USE ONLY

	YES	NO
1. DOES PLANT OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		
2. DOES COLLECTION SYSTEM OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		

PLANT AND COLLECTION SYSTEM PERSONNEL INVENTORY

FACILITY NAME: Sewer Line Maintenance PLANT GRADE: IV

PERMIT NUMBER:

PLANT SUPERINTENDENT: TEL. # (205) 540-7585

SYSTEM MANAGER: David Denard TEL. # (205) 325-5979

PLANT OPERATORS:

	NAME	GRADE OR TRAINEE STATUS	OPERATOR NO.	EXP. DATE
1.	Brian Champion	I (c)	C002094	6/30/2015
2.	Don Goodwin	I (c)	C005423	6/30/2015
3.	Lavon Evans	I (c)	C004631	12/31/2014
4.	Brian Rohling	I (c)	C005418	6/30/2015
5.				
6.				
7.				
8.				
9.				
10.				

COLLECTION SYSTEM OPERATORS:

1.				
2.				
3.				
4.				

	MAN HRS./WK	NUMBER
MANAGEMENT/SUPERVISOR		
OPERATOR(S):		
GRADE I-C		
GRADE I		
GRADE II		
GRADE III		
GRADE IV		
DESIGNATED TRAINEE(S)		
LABORATORY		
MAINTENANCE		
OTHER PLANT WORKERS		

AVERAGE NUMBER OF EMPLOYEES PER SHIFT:

1ST		START TIME	
2ND			
3RD			

OPERATOR SHIFTS NORMALLY WORKED EACH DAY:

	SUN	MON	TUES	WED	THURS	FRI	SAT
1ST							
2ND							
3RD							

ADEM USE ONLY

	YES	NO
1. DOES PLANT OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		
2. DOES COLLECTION SYSTEM OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		

Municipal Water Pollution Prevention (MWPP) Annual Report Calendar Year 2013

For the

Five Mile Creek WWTP

as required by the
Alabama Department of Environmental Management NPDES Program

Prepared by
Jefferson County Commission
Environmental Services Department

May 31, 2014

JEFFERSON COUNTY COMMISSION

DAVID CARRINGTON - PRESIDENT
GEORGE F. BOWMAN
SANDRA LITTLE BROWN - PRESIDENT PRO TEMPORE
T. JOE KNIGHT
JAMES A."JIMMIE" STEPHENS

DAVID CARRINGTON – COMMISSIONER
ENVIRONMENTAL SERVICES

TONY PETELOS, COUNTY MANAGER

Office of

DAVID DENARD
Director of Environmental Services
Suite A-300
716 Richard Arrington, Jr. Blvd. N.
Birmingham, Alabama 35203
Telephone (205) 325-5496
Fax (205) 325-5981

May 31, 2014

Mr. Nic Caraway, Water Division
Alabama Department of Environmental Management
Water Division – Municipal Branch
P.O. Box 301463
Montgomery, AL 36130-1463

RE: Municipal Water Pollution Prevention (MWPP)
Annual Report Calendar Year 2013

Mr. Caraway:

The Jefferson County Environmental Services Department submits the above referenced report for the Five Mile Creek Wastewater Treatment Facility, NPDES Permit No. AL0026913. Included is information as required in ADEM Form 41701/06ml, bypass/overflow event reports, MWPP Sewage Sludge Survey, and the Plant & Collection System Personnel Inventory.

If you have any questions regarding this information, please contact me at 205.325.5979 or Celeste Brown at Jefferson County Barton Laboratory at 205.238.3859.

Sincerely,

David Denard, Director
Environmental Services Department

pc: Celeste Brown, JCESD Barton Laboratory
Daniel White, JCESD Deputy Director
Lynn Jones, Five Mile Creek WWTP

MUNICIPAL WATER POLLUTION PREVENTION (MWPP)

ANNUAL REPORT

SUBMITTED BY:

TREATMENT FACILITY: Five Mile Creek WWTP NPDES #: AL0026913

MUNICIPALITY: Jefferson County Commission COUNTY: Jefferson

CONTACT PERSON: David Denard
Municipal Official

Director of Environmental Services
Title

Telephone #: 205 - 325 - 5979 Fax #: 205 - 325 - 5239

Email Address: denardd@jccal.org

CHIEF OPERATOR: Lynn D. Jones, Plant Manager
Name

Telephone #: 205 - 841 - 5939 Fax #: 205 - 841 - 7698

Email Address: jonesly@jccal.org

Date: May 14, 2014

REVIEWED BY: Daniel White P.E., ESD Engineer
Consulting Engineer

Telephone #: 205 - 214 - 8610 Fax #: 205 - 325 - 5981

Date: May 14, 2014

MWPP Annual Report
Information Source List

The following information will be needed to complete the compliance maintenance report that covers the calendar year of 2013 (due **May 31,** 2014).

Part 1 A. The average plant influent flow for each month (million gallons per day/MGD) during the year.
B. The average plant influent BOD (CBOD) for each month (mg/l and lb/day) in the year.
C. The plant's average design flow (MGD) and design BOD loading (lbs/day).

Part 2 A. The monthly average permit and DMR effluent concentration for BOD (CBOD), TSS, NH3-N, and/or TKN in mg/l for the year
B. The monthly average effluent limits and DMR loading for BOD, TSS, NH3-N, and/or TKN in lbs/day for the year

Part 3 The age of the treatment plant defined as the number of years since the last major reconstruction to increase the organic or hydraulic capacity of the plant. The last calendar year minus the year the new construction was brought on-line.

Part 4 Bypass and overflow information. This is the number of bypass or overflow events of untreated wastewater due to heavy rain or equipment failure whether intentional or inadvertent from all collection systems tributary to the treatment facility.

Part 5 A. Describe the characteristics and quantity of sludge generated.
B. If sludge is landspread, how many months of sludge storage does the plant have? This should include on-site and off-site storage from the treatment plant. The digestor capacity may be used in the calculation.

Part 6 A. Sludge Disposal Method
B. The number of approved land disposal sites for sludge available, and how many months or years these disposal sites will these be available for use.

Part 7 The number of sewer extensions installed in the community last year--the design population, design flow, and design BOD for each sewer extension.

Part 8 Operator Certification

Part 9 Financial Status

Part 10 Subjective Evaluation

Part 11 Summary Sheet

Instructions to the Operator-in-Charge

1. Complete all sections of the MWPP Report to the best of your ability.

2. Parts 1 through 8 contain questions for which points will be generated. These points are intended to communicate to the Department and the governing body or owner the actions necessary to prevent effluent violations. Enter the point totals from Parts 1 through 8 on Part 11: Summary Sheet.

3. Add the point totals on Part 11: Summary Sheet.

4. Submit the MWPP Report to the governing body and the consulting engineer and owner for review and approval.

5. The governing body should pass a resolution which contains the following points:

   a. The resolution should acknowledge the governing body or owner has reviewed the MWPP Report.

   b. The resolution should indicate what actions will be taken to prevent effluent violations.

   c. The resolution should provide any other information the governing body or owner deems appropriate.

6. **The MWPP Report and the resolution must be submitted by May 31st to Municipal Section, Water Division, ADEM, P.O. Box 301463, Montgomery, AL 36130-1463.**

Facility Name: Five Mile Creek WWTP

Part 1: Influent Loading/Flows

A. List the average monthly volumetric flows and BOD_5 ($CBOD_5$) loadings received at your facility during the last calendar year.

Month	Column 1 Average Monthly Flowrate (MGD)	Column 2 Average Monthly BOD_5 ($CBOD_5$) Concentration (mg/l)	Column 3 Average Loading BOD_5 ($CBOD_5$) (lbs/day**)
January	23	54	9274
February	23	60	10298
March	18	59	7885
April	17	60	8385
May	19	58	7760
June	14	95	11581
July	14	70	6823
August	14	65	7404
September	8.9	78	5597
October	7.3	84	5180
November	9.6	94	7184
December	17	60	8052
Annual Avg.	15	70	7952

**As reported on NPDES Discharge Monitoring Reports (DMRs) and as required by EPA's NPDES Self-Monitoring System, User Guide, March 1985.

B. List the average design flow and average design BOD_5 loading for the facility below. If you are not aware of these design quantities, contact your consulting engineer or the Alabama Department of Environmental Management.

	Average Design Flow	Average Design BOD_5 Loading (lbs/day)
Design Criteria	30MGD	50, 040
90% of the Design Criteria	27	31, 525

C. How many times did the monthly flow (Column 1) to the WWTP exceed 90% of design flow? _____ (Check the appropriate point total)

☑ 0 - 4 = 0 points ☐ 5 or more = 5 points

D. How many times did the monthly flow (Column 1) to the WWTP exceed the design flow? ____ (Check the appropriate point total)

☑ 0 = 0 points ☐ 1 - 2 = 5 points ☐ 3 - 4 = 10 points ☐ 5 or more = 15 points

E. How many times did the monthly BOD_5 (or $CBOD_5$)* loading (lbs/day) (Column 3) to the WWTP exceed 90% of the design loading? ____ (Check the appropriate point total)

☑ 0 - 1 = 0 points ☐ 2 - 4 = 5 points ☐ 5 or more = 10 points

F. How many times did the monthly BOD_5 (or $CBOD_5$)* loading (lbs/day) (Column 3) to the WWTP exceed the design loading? _____ (Check the appropriate point total)

☑ 0 = 0 points ☐ 1 = 10 points ☐ 2 = 20 points ☐ 3 = 30 points ☐ 4 = 40 points ☐ 5 or more = 50 points

G. Enter each point value marked for Cthrough F and enter the sum in the appropriate blank below.

C points = 0

D points = 0

E points = 0

F points = 0

TOTAL POINTS VALUE OR PART 1 0
Enter this value on Part 11: Summary Sheet.

*To obtain equivalent BOD_5 loading for comparison with design loading for those permittees using influent $CBOD_5$, divide annual average $CBOD_5$, loading in lbs/day from Part 1, A by 0.7.

Facility Name: Five Mile Creek WWTP

Part 2: Effluent Quality/Plant Performance

A. List the monthly average permit limits for the facility in the blanks below and the average monthly effluent DMR BOD_5, ($CBOD_5$) TSS, NH_3-N and/or TKN concentration produced by the facility during the last calendar year.

(1) NPDES Permit Concentration

	Months	BOD_5 ($CBOD_5$) (mg/l)	TSS (mg/l)	NH_3-N (mg/l)	TKN (mg/l)
Permit Limit	May - Nov.	6.0	30.0	2.0	4.0
	Dec. - April	7.0	30.0	2.5	5.0

(2) DMR Concentration

Qtr	Month	BOD_5 ($CBOD_5$) (mg/l)	TSS (mg/l)	NH_3-N (mg/l)	TKN (mg/l)
1	January	1.4	1.8	0.081	0.60
	February	0.95	1.9	0.035	0.35
	March	0.95	0.93	0.007	0.31
2	April	0.76	1.3	0.003	0.35
	May	0.72	1.3	0.008	0.36
	June	1.4	1.8	0.954	2.21
3	July	0.88	0.65	0.057	0.30
	August	0.69	0.34	0.003	0.27
	September	0.76	0.49	0.036	0.38
4	October	0.61	0.37	0.043	0.40
	November	0.63	0.60	0.022	0.37
	December	0.55	1.1	0.060	0.30
	Annual Avg.	0.86	1.0	0.11	0.52

B. List the monthly average permit limit and DMR loadings below.

(1) NPDES Permit Loading

	Months	BOD_5 ($CBOD_5$) (lbs/day)	TSS (lbs/day)	NH_3-N (lbs/day)	TKN (lbs/day)
Permit Limit	May - Nov.	1501	7506	500	1000
	Dec. - April	1751	7506	625	1251

(2) DMR Loading

Qtr	Month	BOD_5 ($CBOD_5$) (lbs/day)	TSS (lbs/day)	NH_3-N (lbs/day)	TKN (lbs/day)
1	January	306	554	23	138
	February	179	352	6.6	64
	March	142	191	1.2	48
2	April	105	164	0.36	49
	May	109	256	0.79	52
	June	169	270	109	250
3	July	99	83	6.6	31
	August	79	35	0.22	31
	September	56	41	2.6	28
4	October	37	23	2.6	25
	November	54	57	2.4	31
	December	87	217	9.5	46
	Annual Avg.	119	187	14	66

C. During the past year did the BOD_5 concentration (mg/l) and/or loading (lbs/day) exceed the product of 1.4 times the monthly average permit limit during two months of any consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

D. During the past year did the BOD_5 concentration (mg/l) and/or loading (lbs/day), exceed the monthly average permit limit during four months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

E. During the past year did the effluent TSS concentration (mg/l) or loading (lbs/day) exceed the product of 1.4 times the monthly average permit limit during two months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

F. During the past year did the TSS concentration (mg/l) and/or loading (lbs/day) exceed the monthly average permit limit during four months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

G. During the past year did the NH_3-N or TKN concentration (mg/l) and/or loading (lbs/day) exceed the product of 1.4 times the monthly average permit limit during two months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

H. During the past year did either the NH_3-N or TKN concentration (mg/l) and/or loading (lbs/day), exceed the monthly average permit limit during four months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

I. Enter each point value checkedfor C through H in the blanks below.

C Points = 0
D Points = 0
E Points = 0
F Points = 0
G Points = 0
H Points = 0

HIGHEST INDIVIDUAL POINT VALUE FOR PART 2 (C-H) 0 (HIGHEST POINT = 121)
Enter this value on Part 11: Summary Sheet.

Facility Name: Five Mile Creek WWTP

Part 3: Age of the Wastewater Treatment Facility

A. What year was the wastewater treatment plant constructed or last reconstructed? 2008

Subtract the above answer from the report year to determine age:

Age = (Last Calendar year) - (Answer to A)

Age 5 = (2013) - (2008)

Enter Age in Part C below.

B. Check the type of treatment facility employed.

		Factor
x	Mechanical Treatment Plant	2.0
_____	Aerated Lagoon	1.5
_____	Stabilization Pond	1.0
_____	Other (Specify:_____)	1.0

C. Multiply the factor listed next to the type of the facility your community employs by the age of your facility to determine the total point value for Part 3:

2.0 (Factor) x 5 (Age) = 10 TOTAL POINT VALUE FOR PART 3

Enter the above value on Part 11: Summary Sheet. If the total point value exceeds 40, enter 40 on Part 11: Summary Sheet.

Facility Name: Five Mile Creek WWTP

Part 4: Bypassing and Overflows

A. How many bypass or overflow events of untreated wastewater occurred in the last year at the WWTP due to heavy rain? 0

B. How many bypass or overflow events of untreated wastewater occurred in the last year prior to the headworks of the WWTP due to heavy rain? 8

C. How many of the bypass or overflow events listed in Parts A and B have been corrected such that future bypass or overflow events at the same location due to heavy rain are not anticipated? 2

D. Add together Answers A and B and subtract Answer C from that total.
A + B – C = _____ (Check the appropriate point total.)

☐ 0 = 0 points ☐ 1 = 5 points ☐ 2 = 10 points ☐ 3 = 15 points ☐ 4 = 20 points ☐ 5 = 25 points ☑ 6 = 30 points
☐ 7 = 35 points ☐ 8 = 40 points ☐ 9 = 45 points ☐ 10 = 50 points ☐ 11 or more = 100 points

E. How many bypass or overflow events of untreated wastewater occurred in the last year at the WWTP due to equipment failure? (This includes clogged/broken lines or manholes.) 0

F. How many bypass or overflow events of untreated wastewater occurred in the last year due to equipment failure prior to the headworks of the WWTP? (This includes clogged/broken lines or manholes.) 17

G. How many of the bypass or overflow events listed in Parts E and F have been corrected such that future bypass or overflow events at the same location due to the same equipment failure are not anticipated? 17

H. Add together Answers E and F and subtract Answer G from that total.
E + F - G = _____ (Check the appropriate point total.)

☑ 0 = 0 points ☐ 1 = 5 points ☐ 2 = 10 points ☐ 3 = 15 points ☐ 4 = 20 points ☐ 5 = 25 points ☐ 6 = 30 points
☐ 7 = 35 points ☐ 8 = 40 points ☐ 9 = 45 points ☐ 10 = 50 points ☐ 11 or more = 100 points

I. Add point values circled in D and H and enter the total in the blank below.

TOTAL POINT VALUE FOR PART 4 30
Enter this value on Part 11: Summary Sheet.

All bypass or overflow events that have occurred in the last year (for any reason) must be individually reported with this MWPP report.

Facility Name: Five Mile Creek WWTP

Part 5: Sludge Quantity and Storage

A. Please provide information concerning sludge quantity, characteristics, and storage practices based on available data as requested on the *MWPP Sewage Sludge Survey,* ADEM Form 419.

B. How many months of sludge storage capacity does the wastewater treatment facility have available, either on-site or off-site? (i.e., How many months can the facility operate without land spreading or disposing of sludge?) 4 months

(Check the appropriate point total.)

Greater than or equal to 4 months	= 0 points	☑
Less than 4 months, but greater than or equal to 3 months	= 10 points	☐
Less than 3 months, but greater than or equal to 2 months	= 20 points	☐
Less than 2 months, but greater than or equal to 1 month	= 30 points	☐
Less than one month	= 50 points	☐

TOTAL POINT VALUE FOR PART 5 0
Enter this value on Part 11: Summary Sheet.

Part 6: Sludge Disposal Practices and Sites

A. Please provide the sludge disposal practices and site information based on available data as requested on the *MWPP Sewage Sludge Survey,* ADEM Form 419.

B. How many months or years does the facility have access to and approval for sufficient land disposal sites to provide proper land disposal? (Check the appropriate point total.)

36 or more months	= 0 points	☐
24 - 35 months	= 10 points	☐
12 - 23 months	= 20 points	☑
6 - 11 months	= 30 points	☐
Less than 6 months	= 50 points	☐

TOTAL POINT VALUE FOR PART 6 20
Enter this value on Part 11: Summary Sheet.

Facility Name: Five Mile Creek WWTP

Part 7: New Development

Are there any major new developments (industrial, commercial, or residential) in the last calendar year or anticipated in the next 2-3 years such that either flow or BOD_5 loadings to the sewage system could significantly increase? Estimate additional loadings below.

Design Population Equivalent (PE):	Design Flow: MGD	Design BOD_5: lbs/day

List industrial and/or residential developments.

No major new developments planned.

Will the additional loading overload the plant? (Check the appropriate point total.)

No = 0 points ☑ Yes = 121 points ☐

Enter the point total in the blank below.

TOTAL POINT VALUE FOR PART 7 0 (highest point total = 121)
Enter this value on Part 11: Summary Sheet.

Part 8: Operator Certification

Complete the *Plant and Collection System Personnel Inventory,* ADEM Form 441.

Do both the plant operator and collection system staffing comply with ADEM Administrative Code; Division 10, Operator Certification Program? (Check the appropriate point total.)

Yes = 0 points ☑ No = 121 points ☐

TOTAL POINT VALUE FOR PART 8 0 (highest point total = 121)
Enter this value on Part 11: Summary Sheet.

Facility Name: Five Mile Creek WWTP

Part 9: Financial Status

A. Are User-Charge Revenues sufficient to cover operation and maintenance expenses? If no, how are O&M costs being financed? ***Include user charge rates***.

Revenues are sufficient. The below values are based on a 5/8" meter and 6,000 gallons water use. Jefferson County has a three tier block rate structure for residential users for 0-3, 4-6, and 7+ ccf water use.

Residential Minimum 15.00 Plus rate 6.02; 9.36; 10.69 /1,000 gal.

Industrial Minimum 15.00 Plus rate 10.51 /1,000 gal.

Monthly residential rate based on 6,000 gallons usage $ 56.04 (includes 15% credit for residential)

Please complete the above information based on your user charge rates for the report year. You may attach a sample water and sewer bill for clarity.

B. What financial resources are available to pay for the wastewater improvements and/or reconstruction needs?

In 2013, Jefferson County issued Series 2013 Sewer Warrants that fund capital improvements through 2023 at an annual average rate of $71.9 million over the 10-year period.

Part 10: Subjective Evaluation

A. Describe briefly the physical and structural conditions of the wastewater treatment facility.

Most of the WWTP was upgraded or newly constructed in 2008 and is in good condition. Some equipment and processes were constructed in the 1970s, 80s, and 90s and are in fair to average condition. Maintenance and refurbishments are planned for assets needing improvements.

B. Describe the general condition of the sewer system (sewer lines, manholes, lift stations).

The Five Mile sewer system includes roughly 2,250,000' of pipe and 30 pump stations. The system's performance is below the expectations of the County. SSES investigations and repairs and replacements are planned.

C. What sewage system improvements does the community have planned for construction in the next 5 years?

Sewer condition assessment and sewer line repair, replacement, and renewal projects.

Backup power generators are planned for Dean Drive and Don Berri Apartment pump stations.

Pump replacements are planned for Newfound #1 and Newfound #2 pump stations.

D. What is the theoretical design life of the plant, and what is the estimated remaining useful life of the wastewater treatment facility?

Calculated remaining useful life of the structures is 45 years (50 years - 5 years age of facility).

Calculated remaining useful life of the equipment is 20 years (25 years - 5 years of equipment).

Based on EPA's 2002 Clean Water and Drinking Water Infrastructure Gap Analysis Report.

E. What problems, if any, over the last year have threatened treatment or conveyance within the system?

See attached Form 421 for May 2013 concerning an operator error that caused a SSO.

Extended rainfall between January 13-15 produced three large SSOs in the collection system.

F. Is the community presently involved in formal planning for treatment facility upgrading?

No.

G. How many days in the last year were there residential backups at any point in the collection system for any reason other than clogging of the lateral connection? 16

H. Does the plant have a written plan for preventive maintenance on major equipment items? If yes, describe.

Yes. Our INFOR maintenance program generates work orders for scheduled preventive maintenance. This is backed up

by written records of scheduled service provided for each piece of equipment by our maintenance shop.

C. What sewage system improvements does the community have planned for construction in the next 5 years?

Sewer condition assessment and sewer line repair, replacement, and renewal projects.

Improvements to Newfound, Cunningham, and Penefield pump stations.

D. What is the theoretical design life of the plant, and what is the estimated remaining useful life of the wastewater treatment facility?

Calculated remaining useful life of the structures is 45 years (50 years - 5 years age of facility).

Calculated remaining useful life of the equipment is 20 years (25 years - 5 years of equipment).

Based on EPA's 2002 Clean Water and Drinking Water Infrastructure Gap Analysis Report.

E. What problems, if any, over the last year have threatened treatment or conveyance within the system?

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Yes. Our INFOR maintenance program generates work orders for scheduled preventive maintenance. This is backed up

by written records of scheduled service provided for each piece of equipment by our maintenance shop.

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
WATER DIVISION – INDUSTRIAL AND MUNICIPAL SECTIONS
NONCOMPLIANCE NOTIFICATION FORM

PERMITTEE NAME: Five Mile Creek WWTP PERMIT NO: AL0026913

FACILITY LOCATION: 3410 Happy Hollow Lane Fultondale, AL 35068

DMR REPORTING PERIOD: May 2013

1. DESCRIPTION OF DISCHARGE: (Include outfall number (s)): Signs of a previous overflow was discovered, Monday, May 6, 2013, at Junction Box 23 (2000-024) on the sewer main to Five Mile Creek WWTP. On further inspection manhole 2000-012 also showed signs of a previous overflow. After discovery, a SSO advisory was made for Five Mile Creek. The SSO event is assumed to have occurred for 45 minutes on Saturday, May 4, 2013 sometime between 11:00 am and 12:00 pm with an assumed height of 1 inch based on observations and actions by the WWTP staff. The combined estimated volume of the SSOs is calculated to be approximately 45,000 gallons. The actual height of the SSO for use in the volume calculation is unknown and is indeterminable since it was not observed. The actual volume of the SSO may have been more or less than estimated and reported in this document.

2. DESCRIPTION OF NON-COMPLIANCE: (Attach additional pages if necessary):

Outfall Number (s)	NONCOMPLIANCE PARAMETER(S)	Result Reported (Include units)	Permit Limit (Include units)
	SSO		

LIST MONITORING / REPORTING VIOLATIONS (If applicable)		
Outfall Number (s)	NONCOMPLIANCE PARAMETER(S)	Monitoring / Reporting Violation (Provide description)
	N/A	

3. CAUSE OF NON-COMPLIANCE (Attach additional pages if necessary): After investigation of the treatment plant's weekend operations it is believed that a sudden change in operations on May 4, 2013 around 11:00am caused an SSO prior to the headworks. The operators on duty, Tony Sutton and Mark Cruce, fearing what they considered a drastic increase in flow that could cause damage to the facility temporarily closed the influent gate for a few minutes from its set position of 25% to 5% of its open capacity to allow the Influent Pump wet well level to lower before flooding. The operators then opened a valve that allowed the water in the trunk sewer to flow into the plant's peak flow basins. The influent gate was then raised to higher position. About 12:00 pm both operators knowing that the gate being lowered to 5% open could cause a SSO on the sewer main, drove to the entrance gate where they could visibly see if the junction box (located across Coalburg Road) had or was overflowing. They both saw no sewage overflowing from the box.

The actions of the operators on Saturday were in direct conflict with written instructions for high flow events and training and instruction provided to the operational staff. The operators over reacted to increasing flow and lowered the gate to a level that was unnecessary and overprotective of the WWTP.

4. PERIOD OF NONCOMPLIANCE: (Include exact date(s) and time(s) or, if not corrected, the anticipated time the noncompliance is expected to continue): There is not an exact time to apply to this event. An approximation based on the statements by the operators and their visual inspection of the overflow area was used. The influent gate was recorded as being closed on May 4, 2013, between 11:00am and 12:00pm, from 25% to 15%. The operator Mark Cruce stated that the gate was initially closed to 5% and was opened minutes after closing when the threat to flooding had subsided. They then continued to open it until it was 15% by 12:00, noon. They also, between 11:00am and 12;00pm, opened the effluent valve allowing flow in the trunk line to flow into the aerated holding basins. They drove to the entrance gate to see if the box was overflowing. It was not overflowing. For the purpose of volume estimation calculations, the estimated time of the over flow is considered 45 minutes.

5. DESCRIPTION OF STEPS TAKEN AND/OR BEING TAKEN TO REDUCE OR ELIMINATE THE NONCOMPLYING DISCHARGE AND TO PREVENT ITS RECURRENCE (attach additional pages if necessary): Both operators will undergo a performance appraisal that could lead to disciplinary actions for not following written procedures for operation. There would not have been an SSO if the written procedures had been followed.

"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."

Lynn D. Jones, Plant Manager Five Mile Creek
NAME AND TITLE OF RESPONSIBLE OFFICIAL (type or print)

SIGNATURE OF RESPONSIBLE OFFICIAL / DATE SIGNED 05/09/2013

ADEM Form 421 11/06 m2

I. Does this preventive maintenance program depict frequency of intervals, types of lubrication, and other preventive maintenance tasks necessary for each piece of equipment? (Check the appropriate response.) Yes ☑ No ☐

J. Are these preventive maintenance tasks, as well as equipment problems, being recorded and filed so future maintenance problems can be assessed properly? (Check the appropriate response.) Yes ☑ No ☐

K. Describe any major repairs or mechanical equipment replacement made in the last year and include the approximate cost for those repairs. Do not include major treatment plant construction or upgrading programs.

One 50 HP ECO-JET I aerator replacement in the aerated holding basin for $13,737.00.

L. List any additional comments. (Attach additional sheets if necessary.)

Facility Name: Five Mile Creek WWTP

Part 11: Summary Sheet

1. Enter in the values from Parts 1 through 8 in the left column below. Add the numbers in the left column to determine the MWPP Report point total the wastewater system generated for the previous calendar year.

Actual Values	Maximum Possible
Part 1 0 points	80 points
Part 2 0 points	121 points
Part 3 10 points	40 points
Part 4 30 points	200 points
Part 5 0 points	50 points
Part 6 20 points	50 points
Part 7 0 points	121 points
Part 8 0 points	121 points
Total 60 points	783 points

2. Check the facility type that best describes the plant's treatment and disposal of wastewater.

- [✓] Mechanical plant with surface water discharge
- [ ] Aerated Lagoon or stabilization pond with surface water discharge
- [ ] Mechanical plant using land disposal of liquid wastes
- [ ] Aerated Lagoon or stabilization pond using land disposal of liquid wastes

3. Check the range that describes the action needed to address problems identified in the report.

- [✓] 0 - 70 pts. Actions as Appropriate*
- [ ] 71 - 120 pts. Departmental Recommendation Range*
- [ ] 121 – 783 Municipality Action Range*

***Other actions may be required by NPDES outside the scope of this report.**

4. Complete the *Municipal Water Pollution Prevention Resolution Form*, ADEM Form 418.

5. In Question 1, do any of the actual point values in the left column equal the maximum possible points in the right column? (Check the appropriate response) Yes ☐ No ☑

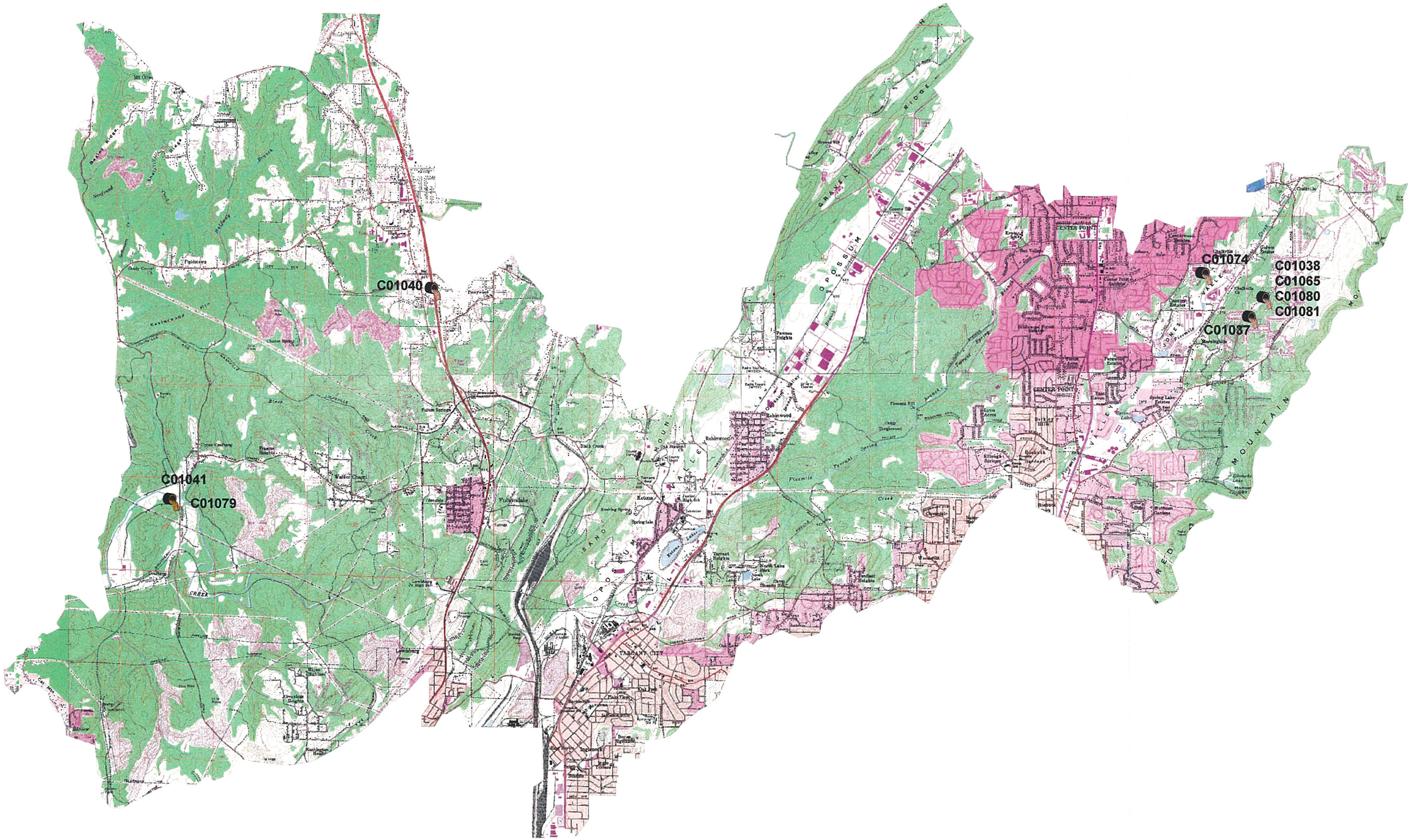
If yes, provide a written explanation for this situation in the space below.

Five Mile Creek Wastewater Treatment Plant

ATTACHMENT 2 – Raw Sewage Bypass and

SUMMARY

FIVE MILE CREEK BASIN 2013 DISCHARGES



NOTE: OVERFLOWS SHOWN ARE OVER 10,000 GALLONS.

JEFFERSON COUNTY
ENVIRONMENTAL SERVICES
PLOTTED: 2-11-14

Summary of Unpermitted Discharges - Five Mile Creek

January 01, 2013 through December 31, 2013

NOTE: Quantities shown in the column "Est. Volume" are ESTIMATED ONLY. These estimates are the County's best determination of the discharge volume, based upon site-determinable information and accepted estimating methods. However, such estimates are subject to a high number of variables which are completely beyond the County's control and which can have a significant effect upon the calculated amount. Therefore, these estimates are to be used for relative comparison only, not as actual discharge volumes.

Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*
C01037	1/14/13	1220 Sweetwater Cir	Five Mile - Upstream of Barton Branch	Drainage Ditch/ Feeder Creek to Five Mile Creek	483,075	Manhole	Surcharge from Rain	Light Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
C01038	1/15/13	1908 & 1919 East Lawson Drive	Five Mile - Upstream of Barton Branch	Five Mile Creek	4,173,248	Manhole	Surcharge from Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
C01040	1/15/13	532 Decatur Hwy	Five Mile - Downstream of Barton Branch (Remainder of System)	Drainage Ditch	200,535	Manhole	Surcharge from Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
C01041	1/15/13	3410 Happy Hollow Lane/ 3330 Coalburg Rd	Five Mile - Downstream of Barton Branch (Remainder of System)	Five Mile Creek	1,020,000	Manhole/ Junction Box	Surcharge from Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
C01048	1/28/13	536 Decatur Hwy	Five Mile - Downstream of Barton Branch (Remainder of System)	Ground Absorbed/ Drainage Ditch	182	Manhole	Debris	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										

NOTE: Quantities shown in the column "Est. Volume" are ESTIMATED ONLY. These estimates are the County's best determination of the discharge volume, based upon site-determinable information and accepted estimating methods. However, such estimates are subject to a high number of variables which are completely beyond the County's control and which can have a significant effect upon the calculated amount. Therefore, these estimates are to be used for relative comparison only, not as actual discharge volumes.

Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*
C01065	2/26/13	1908 & 1919 East Lawson Dr	Five Mile - Upstream of Barton Branch	Five Mile Creek	217,665	Manhole	Surcharge from Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
C01066	2/26/13	1220 Sweetwater Cir	Five Mile - Upstream of Barton Branch	Feeder Creek to Five Mile Creek	8,500	Manhole	Surcharge from Rain	Moderate Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
C01069	3/8/13	989 Huffman Road	Five Mile - Upstream of Barton Branch	Drainage Ditch/ Storm Drain		Combo Truck	Vacuum Truck	No Rain	Washed Street Down	Brian Champion	Sewer Maintenance Supervisor
	Notes: Debris body was not latched all the way on the vacuum truck allowing sewage to leak out.										
C01074	3/29/13	2110 Willow Glenn Drive	Five Mile - Upstream of Barton Branch	Drainage Ditch	43,342	Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
C01079	5/6/13	3330/ 3331 Coalburg Rd	Five Mile - Downstream of Barton Branch (Remainder of System)	Five Mile Creek	45,000	Manhole	Operator Error	Heavy Rain	Operations Corrected at WWTP	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
C01080	5/18/13	1908 & 1919 East Lawson Dr	Five Mile - Upstream of Barton Branch	Five Mile Creek	584,508	Manhole	Surcharge from Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
C01081	6/10/13	1919 East Lawson Drive	Five Mile - Upstream of Barton Branch	Ground Absorbed/ Five Mile Creek	236,052	Manhole	Surcharge from Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										

NOTE: Quantities shown in the column "Est. Volume" are ESTIMATED ONLY. These estimates are the County's best determination of the discharge volume, based upon site-determinable information and accepted estimating methods. However, such estimates are subject to a high number of variables which are completely beyond the County's control and which can have a significant effect upon the calculated amount. Therefore, these estimates are to be used for relative comparison only, not as actual discharge volumes.

Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*
C01083	6/13/13	1664 Lake Dr NE	Five Mile - Upstream of Barton Branch	Ground Absorbed/ Drainage Ditch	71	Manhole	Roots	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
C01087	8/19/13	1910 Center Point Parkway	Five Mile - Upstream of Barton Branch	Storm Drain	440	Manhole	Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
C01088	8/24/13	1800 Center PoInt Parkway	Five Mile - Upstream of Barton Branch	Ground Absorbed	360	Manhole	Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
C01098	10/2/13	1734 Brewster Rd	Five Mile - Upstream of Barton Branch	Drainage Ditch	8,000	Manhole	Grease/ Debris	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04315	1/8/13	5012 41st Way N	Five Mile - Downstream of Barton Branch (Remainder of System)	Ground Absorbed		Pipe	Gravity Main Break	No Rain	Line Repaired	Brian Champion	Sewer Maintenance Supervisor
	Notes: While jetwashing sanitary sewer line, sewage sprayed from hole in ground where gravity main pipe was broken. Volume not determinable.										
M04387	4/5/13	4010 49th Crt N	Five Mile - Downstream of Barton Branch (Remainder of System)	Storm Drain	169	Manhole	Grease	Light Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04412	5/5/13	1432 Bobolink Lane	Five Mile - Upstream of Barton Branch	Ground Absorbed	86	Manhole	Grease/ Roots/ Rags	Light Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										

NOTE: Quantities shown in the column "Est. Volume" are ESTIMATED ONLY. These estimates are the County's best determination of the discharge volume, based upon site-determinable information and accepted estimating methods. However, such estimates are subject to a high number of variables which are completely beyond the County's control and which can have a significant effect upon the calculated amount. Therefore, these estimates are to be used for relative comparison only, not as actual discharge volumes.

Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*
M04419	5/22/13	1113 Elm Ave	Five Mile - Downstream of Barton Branch (Remainder of System)	Ground Absorbed	500	Pipe	Gravity Main Break	No Rain	Blockage Removed/ Line Repaired	Brian Champion	Sewer Maintenance Supervisor
	Notes: Power company										
M04422	5/30/13	377 Sunbrook Ave	Five Mile - Upstream of Barton Branch	Ground Absorbed	55	Cleanout	Grease/ Roots/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04424	6/6/13	805 Jeffery Circle	Five Mile - Upstream of Barton Branch	Ground Absorbed/ Feeder Creek to Five Mile Creek		Cleanout	Grease/ Debris/ Rags	Light Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes: Volume was not determinable. Cleanout not overflowing upon crew arrival, but there was evidence.										
M04432	7/11/13	400 Old Farm Dr	Five Mile - Upstream of Barton Branch	Ground Absorbed	2,700	Manhole	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04479	12/1/13	1139 Ware Blvd	Five Mile - Upstream of Barton Branch	Ground Absorbed	96	Manhole	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04480	12/2/13	1205 Five Mile Road	Five Mile - Upstream of Barton Branch	Drainage Ditch/ Feeder to Five Mile Creek	312	Manhole	Grease/ Rags	Moderate Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04490	12/13/13	9817 Maple Ln	Five Mile - Upstream of Barton Branch	Storm Drain	180	Manhole	Grease/ Debris	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										

NOTE: Quantities shown in the column "Est. Volume" are ESTIMATED ONLY. These estimates are the County's best determination of the discharge volume, based upon site-determinable information and accepted estimating methods. However, such estimates are subject to a high number of variables which are completely beyond the County's control and which can have a significant effect upon the calculated amount. Therefore, these estimates are to be used for relative comparison only, not as actual discharge volumes.

Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*
M04500	12/26/13	517 Montrose Cir	Five Mile - Upstream of Barton Branch	Drainage Ditch	666	Manhole	Grease/ Roots	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor

Notes:

Five Mile Creek Wastewater Treatment Plant

ATTACHMENT 3 – MWPP Sewage Sludge

SURVEY

MWPP SEWAGE SLUDGE SURVEY

Facility Background Information:

1. Facility Information

Permit Number: AL0026913

Name: Five Mile Creek WWTP

Street Address: 3410 Happy Hollow Lane Fultondale, Alabama 35068

County: Jefferson County

2. Facility Contact

Name: Lynn D. Jones

Title: Plant Manager

Telephone: 205 - 841 - 5939

Permittee Name: Jefferson County Commission

Mailing Address: Environmental Services Department Suite A-300

716 Richard Arrington Jr. Blvd. N. Birmingham, Alabama 35203

Facility Flow Information

1. Facility Wastewater Treatment Capacity

Avg. Daily Flow for ~~2000~~ 2013: 15.3 MGD

Facility Design Capacity: 30.0 MGD

2. Estimated Septage Quantity Handled (Residuals Removed from Septic Tank Systems)

Average Domestic Septage: N/A gallons per month

Average Commercial Septage: N/A gallons per month

3. Method of Septage Processing

Mixed with Influent Wastewater for Treatment

Mixed with Sewage Sludge

N/A

4. Estimated Percentage Contributing Wastewater Flow

Residential: 93 %

Industrial: 2 %

Other: 5 % Describe: COMMERCIAL

5. List type of wastewater treatment process(es) utilized at this facility:

Screening, grit removal, aeration with activated sludge, clarification, sandfiltration, UV disenfection

6. Estimated sewage sludge wasting rate at this facility: 41019 lb/day dry weight

or _____ gallons per day

7. Estimated untreated sludge received from off site: _____ lb/day dry weight

or N/A gallons per day

8. Estimated percent solids of combined sewage sludge prior to treatment: 4.1 %

9. List the sewage sludge treatment processes used in preparing sludge for final use or disposal:

	Sludge Quantity (untreated pounds per day)
Aerobic Digestion	
Thickening	
Drying Beds (air drying)	

10. Estimate the total volume of sludge generated: 1021 (dry U.S. tons per year)

Sludge Disposal Methods

1. Which of the following describes the current method of sewage sludge disposal for this facility:

	Current Practices			Proposed Practices	
	Approved by ADEM		Quantity	Approved by ADEM	
	Yes	No	(dry U.S. tons/year)	Yes	No
a. Land Application, Bulk Shipped			1021		
X Agriculture				X	
Forest					
Public Contact					
Lawn/Home Garden					
b. Land Application, Bagged/Other Container					
Agriculture					
Forest					
Public Contact					
Lawn/Home Garden					
c. Incineration					
d. Subtitle D Landfill (Disposal Only)					
e. Lined Treatment Lagoon or Stabilization Pond					
f. Unlined Lagoon or Stabilization Pond					
g. Other (Please Describe)					

2. If "f" was selected above and sludge is stored for 2 or more years, enter the distance between the surface disposal site and the property line: _____ feet

Pollutant Concentrations

1. Enter the total concentrations of the following analytes using existing data. Do not enter TCLP results.

Analyte	Concentration (mg/kg or ppm)	Sample Type	Sample Date	Detection Level of Analysis
Arsenic	<PQL	grab	*	11.0
Cadmium	<PQL	grab	*	8.0
Chromium	60.8	grab	*	8.0
Copper	371.7	grab	*	8.0
Lead	37.7	grab	*	15.0
Mercury	1.7	grab	*	0.6
Molybdenum	<PQL	grab	*	5.0
Nickel	49.0	grab	*	6.0
Selenium	<PQL	grab	*	15.0
Zinc	3,016.7	grab	*	18.0
Ammonium-Nitrogen	N/A	N/A	N/A	N/A
Nitrate-Nitrogen	N/A	N/A	N/A	N/A
Total Kjeldahl Nitrogen	39,333	grab	*	1.8

2. Enter the estimated or determined percent solids of the sewage sludge when sampled for the above analysis: 84 %

Treatment Provided for Sewage Sludge at the Facility

1. Which class of pathogen reduction does the sewage sludge meet at the facility? (As defined in 40 CFR Part 503)

Class A

Alternative A1 - Time and Temperature

Alternative A2 - Alkaline Treatment

Alternative A3 - Analysis and Operation

Alternative A4 - Analysis Only

Alternative A5 - Processes to Further Reduce Pathogens (PFRP)

Heat Drying	Thermophilic Aerobic Digestion	Heat Treatment
Pasteurization	Gamma Ray Irradiation	Beta Ray Irradiation
Composting		

Alternative A6 - PFRP Equivalent _____

X Class B

X Alternative B1 - Fecal Coliform Count

X Alternative B2 - Process to Significantly Reduce Pathogens (PSRP)

X Aerobic Digestion	X Air Drying	Anaerobic Digestion
Composting	Lime Stabilization	

Alternative B3 - PSRP Equivalent _____

Neither or Unknown

Vector Attraction Control

Option 1 - Minimum 38% Reduction in Volatile Solids
Option 2 - Anaerobic Processes, with Bench-Scale Demonstration of Volatile Solids Reduction
Option 3 - Aerobic Processes, with Bench-Scale Demonstration of Volatile Solids Reduction
Option 4 - Specific Oxygen Uptake Rate (SOUR) for Aerobically Digested Sludge
Option 5 - Aerobic Processes plus Elevated Temperature
Option 6 - Raised pH to 12 and Retained at 11.5
Option 7 - 75% Solids with no Unstabilized Solids
Option 8 - 90% Solids with Unstabilized Solids
Option 9 - Injection Below Land Surface
X Option 10 - Incorporation into Soil within 6 or 8 Hours
Option 11 Covering Active Sewage Sludge Unit Daily
None of the Above

Groundwater Monitoring

1. If disposal practice is surface disposal or land application, is groundwater monitoring required or performed at the site?

Yes
X No

(If yes, please submit a copy of the groundwater monitoring reports along with this survey. Also please provide the approximate depth to groundwater and the groundwater monitoring procedures used to obtain the data.)

Land Application of Sewage Sludge

Answer the following questions if sewage sludge is applied to land.

1. If sewage sludge is land applied in bulk form, what type of crop or other vegetation is grown on this site?

Tifton Bermuda Grass and Rye Grass.

2. If sewage sludge is land applied in bulk form, what is the nitrogen requirement for this crop or vegetation?

The nitrogen requirement is 600ibs / acre / year.

3. If sewage sludge is land applied in bulk form, briefly describe the nature of any complaints filed from neighbors?

No complaints have been filed.

Note: Permittees that submitted the "Annual Report Review Form" for sludge to the EPA may submitt a copy with the MWPP in lieu of this Attachment.

Five Mile Creek Wastewater Treatment Plant

ATTACHMENT 4 – Plant and Collection System Personnel Inventory

PLANT AND COLLECTION SYSTEM PERSONNEL INVENTORY

FACILITY NAME: Five Mile Creek WWTP PLANT GRADE: IV

PERMIT NUMBER: AL0026913

PLANT MANAGER: Lynn Jones TEL. # (205) 841-5939

SYSTEM MANAGER David Denard TEL. # (205) 325-5806

PLANT OPERATORS:

	NAME	GRADE OR TRAINEE STATUS	OPERATOR NO.	EXP. DATE
1	Lynn Jones	Plant Manager	C003327	9/30/2014
2	Robert Tyler	Shift Supervisor	C003008	11/30/2015
3	Randy Maxwell	Shift Supervisor	C003076	11/30/2015
4	Terry Joe MaHaffey	Shift Supervisor	C003135	8/31/2016
5	Tony Sutton	Shift Supervisor	C002294	11/30/2015
6	Mark Cruce	Operator II	C001682	3/31/2015
7	Adam Smith	Operator II	C002236	4/30/2016
8	Daniel Tesseneer	Operator II	C006050	6/30/2014
9	Ellis Brown	Operator I		
10	Sam Shears	Operator I		
11	Todd Smitherman	Operator I		
12	Michael Wright	Operator I		

	MAN HRS./WK	NUMBER
Avg Daily	40	7
GRADE I-C		
GRADE I		
GRADE II		
GRADE III		
GRADE IV	40	8
MANAGEMENT/SUPERVISOR	40	5
OPERATOR(S):	40	3
TRAINEE(S)	40	4
OTHER PLANT WORKERS		

AVERAGE NUMBER OF EMPLOYEES PER SHIFT:

1ST	5
2ND	2
3rd	2
weekend	2

START TIME

M -F	Sat-Sun
7:00a.m.	7:00am
3:00p.m.	7:00pm
11:00p.m.	7:00am

OPERATOR SHIFTS NORMALLY WORKED EACH DAY:

	SUN	MON	TUES	WED	THURS	FRI	SAT
1ST	X	X	X	X	X	X	X
2ND	X	X	X	X	X	X	X
3RD	X	X	X	X	X	X	X

ADEM USE ONLY

1. DOES PLANT OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?
2. DOES COLLECTION SYSTEM OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?

YES	NO

ADEM FORM 441 8/02

PLANT AND COLLECTION SYSTEM PERSONNEL INVENTORY

Continued

FACILITY NAME: Five Mile Creek WWTP PLANT GRADE: IV

PERMIT NUMBER: AL0026913

PLANT SUPERINTENDENT: Lynn Jones TEL. #: (205) 841-5939

SYSTEM MANAGER: David Denard TEL. #: (205) 325-5806

PLANT OPERATORS:

	NAME	GRADE OR TRAINEE STATUS	OPERATOR NO.	EXP. DATE
15	Garren Hubbert	Trainee		
16	Johnny McDonough	Trainee		
17	Billy Joe Poe	Trainee		
18	Samuel Shears	Trainee		
19	Todd Smitherman	Trainee		
20	Daniel Tesseneer	Trainee		
21	Michael Wright	Trainee		

	MAN HRS./WK	NUMBER
MANAGEMENT/SUPERVISOR		
OPERATOR(S):		
GRADE I-C		
GRADE I		
GRADE II		
GRADE III		
GRADE IV		
DESIGNATED TRAINEE(S)		
LABORATORY		
MAINTENANCE		
OTHER PLANT WORKERS		

AVERAGE NUMBER OF EMPLOYEES PER SHIFT:

		START TIME
1ST		
2ND		
3RD		

OPERATOR SHIFTS NORMALLY WORKED EACH DAY:

	SUN	MON	TUES	WED	THURS	FRI	SAT
1ST							
2ND							
3RD							

ADEM USE ONLY

	YES	NO
1. DOES PLANT OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		
2. DOES COLLECTION SYSTEM OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		

PLANT AND COLLECTION SYSTEM PERSONNEL INVENTORY

FACILITY NAME: Sewer Line Maintenance PLANT GRADE: IV

PERMIT NUMBER:

PLANT SUPERINTENDENT: TEL. # (205) 540-7585

SYSTEM MANAGER: David Denard TEL. # (205) 325-5979

PLANT OPERATORS:

	NAME	GRADE OR TRAINEE STATUS	OPERATOR NO.	EXP. DATE
1.	Brian Champion	I (c)	C002094	6/30/2015
2.	Don Goodwin	I (c)	C005423	6/30/2015
3.	Lavon Evans	I (c)	C004631	12/31/2014
4.	Brian Rohling	I (c)	C005418	6/30/2015
5.				
6.				
7.				
8.				
9.				
10.				

COLLECTION SYSTEM OPERATORS:

1.				
2.				
3.				
4.				

	MAN HRS./WK	NUMBER
MANAGEMENT/SUPERVISOR		
OPERATOR(S):		
GRADE I-C		
GRADE I		
GRADE II		
GRADE III		
GRADE IV		
DESIGNATED TRAINEE(S)		
LABORATORY		
MAINTENANCE		
OTHER PLANT WORKERS		

AVERAGE NUMBER OF EMPLOYEES PER SHIFT:

		START TIME
1ST		
2ND		
3RD		

OPERATOR SHIFTS NORMALLY WORKED EACH DAY:

	SUN	MON	TUES	WED	THURS	FRI	SAT
1ST							
2ND							
3RD							

ADEM USE ONLY

	YES	NO
1. DOES PLANT OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		
2. DOES COLLECTION SYSTEM OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		

Municipal Water Pollution Prevention (MWPP) Annual Report Calendar Year 2013

For the

Leeds WWTP

as required by the
Alabama Department of Environmental Management NPDES Program

Prepared by
Jefferson County Commission
Environmental Services Department

May 31, 2014

JEFFERSON COUNTY COMMISSION

DAVID CARRINGTON - PRESIDENT
GEORGE F. BOWMAN
SANDRA LITTLE BROWN - PRESIDENT PRO TEMPORE
T. JOE KNIGHT
JAMES A."JIMMIE" STEPHENS

DAVID CARRINGTON – COMMISSIONER
ENVIRONMENTAL SERVICES

TONY PETELOS, COUNTY MANAGER

Office of

DAVID DENARD
Director of Environmental Services
Suite A-300
716 Richard Arrington, Jr. Blvd. N.
Birmingham, Alabama 35203
Telephone (205) 325-5496
Fax (205) 325-5981

May 31, 2014

Mr. Nic Caraway, Water Division
Alabama Department of Environmental Management
Water Division – Municipal Branch
P.O. Box 301463
Montgomery, AL 36130-1463

RE: Municipal Water Pollution Prevention (MWPP)
Annual Report Calendar Year 2013

Mr. Caraway:

The Jefferson County Environmental Services Department submits the above referenced report for the Leeds Wastewater Treatment Facility, NPDES Permit No. AL0067067. Included is information as required in ADEM Form 41701/06ml, bypass/overflow event reports, MWPP Sewage Sludge Survey, and the Plant & Collection System Personnel Inventory.

If you have any questions regarding this information, please contact me at 205.325.5979 or Celeste Brown of Jefferson County Barton Laboratory at 205.238.3859.

Sincerely,

David Denard, Director
Environmental Services Department

pc: Celeste Brown, JCESD Barton Laboratory
Daniel White, JCESD Deputy Director
David Willoughby, Leeds WWTP

MUNICIPAL WATER POLLUTION PREVENTION (MWPP)

ANNUAL REPORT

SUBMITTED BY:

TREATMENT FACILITY: Leeds WWTP NPDES #: AL0067067

MUNICIPALITY: Jefferson County COUNTY: Jefferson

CONTACT PERSON: David Denard
Municipal Official

Director of Environmental Services
Title

Telephone #: (205) 325-5979 Fax #: (205) 325-5981

Email Address: denardd@jccal.org

CHIEF OPERATOR: David Willoughby
Name

Telephone #: (205) 699-8495 Fax #: (205) 699-0640

Email Address: willoughbyd@jccal.org

Date: May 14, 2014

REVIEWED BY: Daniel White P.E., ESD Engineer
Consulting Engineer

Telephone #: 205 -214 -8610 Fax #: 205-325-5688

Date: May 14, 2014

MWPP Annual Report
Information Source List

The following information will be needed to complete the compliance maintenance report that covers the calendar year of 2013 (due **May 31,** 2014).

Part 1 A. The average plant influent flow for each month (million gallons per day/MGD) during the year.
B. The average plant influent BOD (CBOD) for each month (mg/l and lb/day) in the year.
C. The plant's average design flow (MGD) and design BOD loading (lbs/day).

Part 2 A. The monthly average permit and DMR effluent concentration for BOD (CBOD), TSS, NH3-N, and/or TKN in mg/l for the year
B. The monthly average effluent limits and DMR loading for BOD, TSS, NH3-N, and/or TKN in lbs/day for the year

Part 3 The age of the treatment plant defined as the number of years since the last major reconstruction to increase the organic or hydraulic capacity of the plant. The last calendar year minus the year the new construction was brought on-line.

Part 4 Bypass and overflow information. This is the number of bypass or overflow events of untreated wastewater due to heavy rain or equipment failure whether intentional or inadvertent from all collection systems tributary to the treatment facility.

Part 5 A. Describe the characteristics and quantity of sludge generated.
B. If sludge is landspread, how many months of sludge storage does the plant have? This should include on-site and off-site storage from the treatment plant. The digestor capacity may be used in the calculation.

Part 6 A. Sludge Disposal Method
B. The number of approved land disposal sites for sludge available, and how many months or years these disposal sites will these be available for use.

Part 7 The number of sewer extensions installed in the community last year--the design population, design flow, and design BOD for each sewer extension.

Part 8 Operator Certification

Part 9 Financial Status

Part 10 Subjective Evaluation

Part 11 Summary Sheet

State of Alabama
MWPP Annual Report
Department of Environmental Management

Instructions to the Operator-in-Charge

1. Complete all sections of the MWPP Report to the best of your ability.

2. Parts 1 through 8 contain questions for which points will be generated. These points are intended to communicate to the Department and the governing body or owner the actions necessary to prevent effluent violations. Enter the point totals from Parts 1 through 8 on Part 11: Summary Sheet.

3. Add the point totals on Part 11: Summary Sheet.

4. Submit the MWPP Report to the governing body and the consulting engineer and owner for review and approval.

5. The governing body should pass a resolution which contains the following points:

   a. The resolution should acknowledge the governing body or owner has reviewed the MWPP Report.

   b. The resolution should indicate what actions will be taken to prevent effluent violations.

   c. The resolution should provide any other information the governing body or owner deems appropriate.

6. **The MWPP Report and the resolution must be submitted by May 31st to Municipal Section, Water Division, ADEM, P.O. Box 301463, Montgomery, AL 36130-1463.**

Facility Name: Leeds WWTP

Part 1: Influent Loading/Flows

A. List the average monthly volumetric flows and BOD_5 ($CBOD_5$) loadings received at your facility during the last calendar year.

Month	Column 1 Average Monthly Flowrate (MGD)	Column 2 Average Monthly BOD_5 ($CBOD_5$) Concentration (mg/l)	Column 3 Average Loading BOD_5 ($CBOD_5$) (lbs/day**)
January	2.1	67	1100
February	2.1	98	1477
March	1.5	72	757
April	1.3	79	825
May	1.5	66	679
June	0.70	87	522
July	0.76	76	451
August	1.1	75	521
September	0.57	110	470
October	0.49	114	459
November	0.52	125	528
December	1.4	62	703
Annual Avg.	1.2	86	708

**As reported on NPDES Discharge Monitoring Reports (DMRs) and as required by EPA's NPDES Self-Monitoring System, User Guide, March 1985.

B. List the average design flow and average design BOD_5 loading for the facility below. If you are not aware of these design quantities, contact your consulting engineer or the Alabama Department of Environmental Management.

	Average Design Flow	Average Design BOD_5 Loading (lbs/day)
Design Criteria	5.0	8340
90% of the Design Criteria	4.5	7506

C. How many times did the monthly flow (Column 1) to the WWTP exceed 90% of design flow? _____ the appropriate point total)

☑ 0 - 4 = 0 points ☐ 5 or more = 5 points

D. How many times did the monthly flow (Column 1) to the WWTP exceed the design flow? ____ the appropriate point total)

☑ 0 = 0 points ☐ 1 - 2 = 5 points ☐ 3 - 4 = 10 points ☐ 5 or more = 15 points

E. How many times did the monthly BOD_5 (or $CBOD_5$)* loading (lbs/day) (Column 3) to the WWTP exceed 90% of the design loading? ____ the appropriate point total)

☑ 0 - 1 = 0 points ☐ 2 - 4 = 5 points ☐ 5 or more = 10 points

F. How many times did the monthly BOD_5 (or $CBOD_5$)* loading (lbs/day) (Column 3) to the WWTP exceed the design loading? _____ the appropriate point total)

☑ 0 = 0 points ☐ 1 = 10 points ☐ 2 = 20 points ☐ 3 = 30 points ☐ 4 = 40 points ☐ 5 or more = 50 points

G. Enter each point value marked for Cthrough F and enter the sum in the appropriate blank below.

C points = 0

D points = 0

E points = 0

F points = 0

TOTAL POINTS VALUE OR PART 1 0
Enter this value on Part 11: Summary Sheet.

*To obtain equivalent BOD_5 loading for comparison with design loading for those permittees using influent $CBOD_5$, divide annual average $CBOD_5$, loading in lbs/day from Part 1, A by 0.7.

Facility Name: Leeds WWTP

Part 2: Effluent Quality/Plant Performance

A. List the monthly average permit limits for the facility in the blanks below and the average monthly effluent DMR BOD_5, ($CBOD_5$) TSS, NH_3-N and/or TKN concentration produced by the facility during the last calendar year.

(1) NPDES Permit Concentration

	Months	BOD_5 ($CBOD_5$) (mg/l)	TSS (mg/l)	NH_3-N (mg/l)	TKN (mg/l)
Permit Limit	May-Nov	4.0	24	2.0	4.0
	Dec-Apr	10.0	24	3.0	8.0

(2) DMR Concentration

Qtr	Month	BOD_5 ($CBOD_5$) (mg/l)	TSS (mg/l)	NH_3-N (mg/l)	TKN (mg/l)
1	January	0.53	0.77	0.00	0.40
	February	0.39	0.58	0.011	0.29
	March	1.10	0.64	0.00	0.35
2	April	0.30	0.74	0.00	0.24
	May	0.20	1.8	0.00	0.23
	June	0.32	0.98	0.00	0.36
3	July	0.43	0.95	0.00	0.11
	August	0.23	0.57	0.00	0.22
	September	0.25	0.58	0.00	0.31
4	October	0.49	0.80	0.00	0.25
	November	0.54	1.62	0.011	0.28
	December	0.41	0.34	0.00	0.26
	Annual Avg.	0.43	0.87	0.002	0.28

B. List the monthly average permit limit and DMR loadings below.

(1) NPDES Permit Loading

	Months	BOD_5 ($CBOD_5$) (lbs/day)	TSS (lbs/day)	NH_3-N (lbs/day)	TKN (lbs/day)
Permit Limit	May-Nov	66.7	400	33.3	66.7
	Dec-Apr	166	400	50.0	133

(2) DMR Loading

Qtr	Month	BOD_5 ($CBOD_5$) (lbs/day)	TSS (lbs/day)	NH_3-N (lbs/day)	TKN (lbs/day)
1	January	8.0	20.9	0.00	7.5
	February	6.8	11.1	0.20	4.9
	March	10.1	8.0	0.00	3.7
2	April	3.2	7.9	0.00	2.5
	May	2.0	12.8	0.00	3.0
	June	2.0	6.2	0.00	2.3
3	July	2.9	7.8	0.00	.72
	August	1.9	5.8	0.00	1.9
	September	1.14	2.7	0.00	1.4
4	October	1.8	3.3	0.00	1.0
	November	2.8	7.4	0.03	1.4
	December	5.9	3.9	0.00	3.7
	Annual Avg.	4.1	8.1	0.02	2.8

C. During the past year did the BOD_5 concentration (mg/l) and/or loading (lbs/day) exceed the product of 1.4 times the monthly average permit limit during two months of any consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

D. During the past year did the BOD_5 concentration (mg/l) and/or loading (lbs/day), exceed the monthly average permit limit during four months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

E. During the past year did the effluent TSS concentration (mg/l) or loading (lbs/day) exceed the product of 1.4 times the monthly average permit limit during two months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

F. During the past year did the TSS concentration (mg/l) and/or loading (lbs/day) exceed the monthly average permit limit during four months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

G. During the past year did the NH_3-N or TKN concentration (mg/l) and/or loading (lbs/day) exceed the product of 1.4 times the monthly average permit limit during two months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

H. During the past year did either the NH_3-N or TKN concentration (mg/l) and/or loading (lbs/day), exceed the monthly average permit limit during four months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

I. Enter each point value checkedfor C through H in the blanks below.

C Points = 0
D Points = 0
E Points = 0
F Points = 0
G Points = 0
H Points = 0

HIGHEST INDIVIDUAL POINT VALUE FOR PART 2 (C-H) 0 (HIGHEST POINT = 121)
Enter this value on Part 11: Summary Sheet.

Facility Name: Leeds WWTP

Part 3: Age of the Wastewater Treatment Facility

A. What year was the wastewater treatment plant constructed or last reconstructed? 1995

Subtract the above answer from the report year to determine age:

Age = (Last Calendar year) - (Answer to A)

Age 18 = (2013) - (1995)

Enter Age in Part C below.

B. Check the type of treatment facility employed.

		Factor
X	Mechanical Treatment Plant	2.0
	Aerated Lagoon	1.5
	Stabilization Pond	1.0
	Other (Specify:)	1.0

C. Multiply the factor listed next to the type of the facility your community employs by the age of your facility to determine the total point value for Part 3:

2.0 (Factor) x 18 (Age) = 36 TOTAL POINT VALUE FOR PART 3

Enter the above value on Part 11: Summary Sheet. If the total point value exceeds 40, enter 40 on Part 11: Summary Sheet.

Facility Name: Leeds WWTP

Part 4: Bypassing and Overflows

A. How many bypass or overflow events of untreated wastewater occurred in the last year at the WWTP due to heavy rain? 0

B. How many bypass or overflow events of untreated wastewater occurred in the last year prior to the headworks of the WWTP due to heavy rain? 0

C. How many of the bypass or overflow events listed in Parts A and B have been corrected such that future bypass or overflow events at the same location due to heavy rain are not anticipated? 0

D. Add together Answers A and B and subtract Answer C from that total.
A + B – C = _____ (Check the appropriate point total.)

☑ 0 = 0 points ☐ 1 = 5 points ☐ 2 = 10 points ☐ 3 = 15 points ☐ 4 = 20 points ☐ 5 = 25 points ☐ 6 = 30 points
☐ 7 = 35 points ☐ 8 = 40 points ☐ 9 = 45 points ☐ 10 = 50 points ☐ 11 or more = 100 points

E. How many bypass or overflow events of untreated wastewater occurred in the last year at the WWTP due to equipment failure? (This includes clogged/broken lines or manholes.) 0

F. How many bypass or overflow events of untreated wastewater occurred in the last year due to equipment failure prior to the headworks of the WWTP? (This includes clogged/broken lines or manholes.) 2

G. How many of the bypass or overflow events listed in Parts E and F have been corrected such that future bypass or overflow events at the same location due to the same equipment failure are not anticipated? 2

H. Add together Answers E and F and subtract Answer G from that total.
E + F - G = _____ (Check the appropriate point total.)

☑ 0 = 0 points ☐ 1 = 5 points ☐ 2 = 10 points ☐ 3 = 15 points ☐ 4 = 20 points ☐ 5 = 25 points ☐ 6 = 30 points
☐ 7 = 35 points ☐ 8 = 40 points ☐ 9 = 45 points ☐ 10 = 50 points ☐ 11 or more = 100 points

I. Add point values circled in D and H and enter the total in the blank below.

TOTAL POINT VALUE FOR PART 4 0
Enter this value on Part 11: Summary Sheet.

All bypass or overflow events that have occurred in the last year (for any reason) must be individually reported with this MWPP report.

Facility Name: Leeds WWTP

Part 5: Sludge Quantity and Storage

A. Please provide information concerning sludge quantity, characteristics, and storage practices based on available data as requested on the *MWPP Sewage Sludge Survey,* ADEM Form 419.

B. How many months of sludge storage capacity does the wastewater treatment facility have available, either on-site or off-site? (i.e., How many months can the facility operate without land spreading or disposing of sludge?) 4

(Check the appropriate point total.)

Greater than or equal to 4 months	= 0 points ☑
Less than 4 months, but greater than or equal to 3 months	= 10 points ☐
Less than 3 months, but greater than or equal to 2 months	= 20 points ☐
Less than 2 months, but greater than or equal to 1 month	= 30 points ☐
Less than one month	= 50 points ☐

TOTAL POINT VALUE FOR PART 5 0
Enter this value on Part 11: Summary Sheet.

Part 6: Sludge Disposal Practices and Sites

A. Please provide the sludge disposal practices and site information based on available data as requested on the *MWPP Sewage Sludge Survey,* ADEM Form 419.

B. How many months or years does the facility have access to and approval for sufficient land disposal sites to provide proper land disposal? (Check the appropriate point total.)

36 or more months	= 0 points ☐
24 - 35 months	= 10 points ☐
12 - 23 months	= 20 points ☑
6 - 11 months	= 30 points ☐
Less than 6 months	= 50 points ☐

TOTAL POINT VALUE FOR PART 6 20
Enter this value on Part 11: Summary Sheet.

Facility Name: Leeds WWTP

Part 7: New Development

Are there any major new developments (industrial, commercial, or residential) in the last calendar year or anticipated in the next 2-3 years such that either flow or BOD_5 loadings to the sewage system could significantly increase? Estimate additional loadings below.

Design Population: Equivalent (PE)	Design Flow: MGD	Design BOD_5: lbs/day

List industrial and/or residential developments.

The Environmental Services Department has not received any applicable sewer availability requests that would significantly impact the sewer system, but ESD is aware of long-term development concepts that could affect the collection system and potentially the WWTP in the next 5 to 10 years.

Will the additional loading overload the plant? (Check the appropriate point total.)

No = 0 points ☑ Yes = 121 points ☐

Enter the point total in the blank below.

TOTAL POINT VALUE FOR PART 7 0 (highest point total = 121)
Enter this value on Part 11: Summary Sheet.

Part 8: Operator Certification

Complete the *Plant and Collection System Personnel Inventory,* ADEM Form 441.

Do both the plant operator and collection system staffing comply with ADEM Administrative Code; Division 10, Operator Certification Program? (Check the appropriate point total.)

Yes = 0 points ☑ No = 121 points ☐

TOTAL POINT VALUE FOR PART 8 0 (highest point total = 121)
Enter this value on Part 11: Summary Sheet.

Facility Name: Leeds WWTP

Part 9: Financial Status

A. Are User-Charge Revenues sufficient to cover operation and maintenance expenses? If no, how are O&M costs being financed? ***Include user charge rates***.

Revenues are sufficient. The below values are based on a 5/8" meter and 6,000 gallons water use. Jefferson County has a three tier block rate structure for residential users for 0-3, 4-6, and 7+ ccf water use.

Residential Minimum $15.00 Plus rate 6.02;9.36;10.69 /1,000 gal.

Industrial Minimum $15.00 Plus rate $10.51 /1,000 gal.

Monthly residential rate based on 6,000 gallons usage $ 56.04 (includes 15% credit for residential

Please complete the above information based on your user charge rates for the report year. You may attach a sample water and sewer bill for clarity.

B. What financial resources are available to pay for the wastewater improvements and/or reconstruction needs?

In 2013, Jefferson County issued Series 2013 Sewer Warrants that fund capital improvements through 2023 at an annual average rate of $71.9 million over the 10-year period.

Part 10: Subjective Evaluation

A. Describe briefly the physical and structural conditions of the wastewater treatment facility.

The physical and structural condition of the WWTP is good.

B. Describe the general condition of the sewer system (sewer lines, manholes, lift stations).

The Leeds system includes roughly 275,000' of pipe and 8 pump stations. The system's rate of SSO's/100 miles of sewer met the department's goal. There are no known capacity deficiencies.

The general condition of the system is good.

C. What sewage system improvements does the community have planned for construction in the next 5 years?

Sewer line repairs and replacements. Generators at Coosa Ave. and Parkway pump stations.

The Coosa Ave. pump station, force main and gravity sewer will likely need a capacity expansion.

Replacement of the WWTP SCADA system. Replacement of the WWTP UV system.

D. What is the theoretical design life of the plant, and what is the estimated remaining useful life of the wastewater treatment facility?

Calculated remaining useful life of the structures is 32 years (50 years - 18 years age of facility).

Remaining useful life of equipment is 7 years (25 years - 18 years age of equipment).

*Based on EPA's 2002 Clean Water and Drinking Water Infrastructure Gap Analysis Report.

E. What problems, if any, over the last year have threatened treatment or conveyance within the system?

There were two blockages in sewer lines that resulted in SSOs.

F. Is the community presently involved in formal planning for treatment facility upgrading?

No.

G. How many days in the last year were there residential backups at any point in the collection system for any reason other than clogging of the lateral connection? 6

H. Does the plant have a written plan for preventive maintenance on major equipment items? If yes, describe.

Yes. Preventive maintenance schedules are entered into the INFOR asset management program. Work orders are generated from the system, and completed tasks are recorded.

I. Does this preventive maintenance program depict frequency of intervals, types of lubrication, and other preventive maintenance tasks necessary for each piece of equipment? (Check the appropriate response.) Yes ☑ No ☐

J. Are these preventive maintenance tasks, as well as equipment problems, being recorded and filed so future maintenance problems can be assessed properly? (Check the appropriate response.) Yes ☑ No ☐

K. Describe any major repairs or mechanical equipment replacement made in the last year and include the approximate cost for those repairs. Do not include major treatment plant construction or upgrading programs.

Replaced one backwash pump on sand filter #1 at an approximate cost of $4,050.

Repaired plant water wash-down pump at an approximate cost of $7,300

L. List any additional comments. (Attach additional sheets if necessary.)

Facility Name: Leeds WWTP

Part 11: Summary Sheet

1. Enter in the values from Parts 1 through 8 in the left column below. Add the numbers in the left column to determine the MWPP Report point total the wastewater system generated for the previous calendar year.

Actual Values	Maximum Possible
Part 1 0 points	80 points
Part 2 0 points	121 points
Part 3 36 points	40 points
Part 4 0 points	200 points
Part 5 0 points	50 points
Part 6 20 points	50 points
Part 7 0 points	121 points
Part 8 0 points	121 points
Total 56 points	783 points

2. Check the facility type that best describes the plant's treatment and disposal of wastewater.

- [✓] Mechanical plant with surface water discharge
- [ ] Aerated Lagoon or stabilization pond with surface water discharge
- [ ] Mechanical plant using land disposal of liquid wastes
- [ ] Aerated Lagoon or stabilization pond using land disposal of liquid wastes

3. Check the range that describes the action needed to address problems identified in the report.

- [✓] 0 - 70 pts. Actions as Appropriate*
- [ ] 71 - 120 pts. Departmental Recommendation Range*
- [ ] 121 – 783 Municipality Action Range*

***Other actions may be required by NPDES outside the scope of this report.**

4. Complete the *Municipal Water Pollution Prevention Resolution Form*, ADEM Form 418.

5. In Question 1, do any of the actual point values in the left column equal the maximum possible points in the right column? (Check the appropriate response) Yes ☐ No ☑

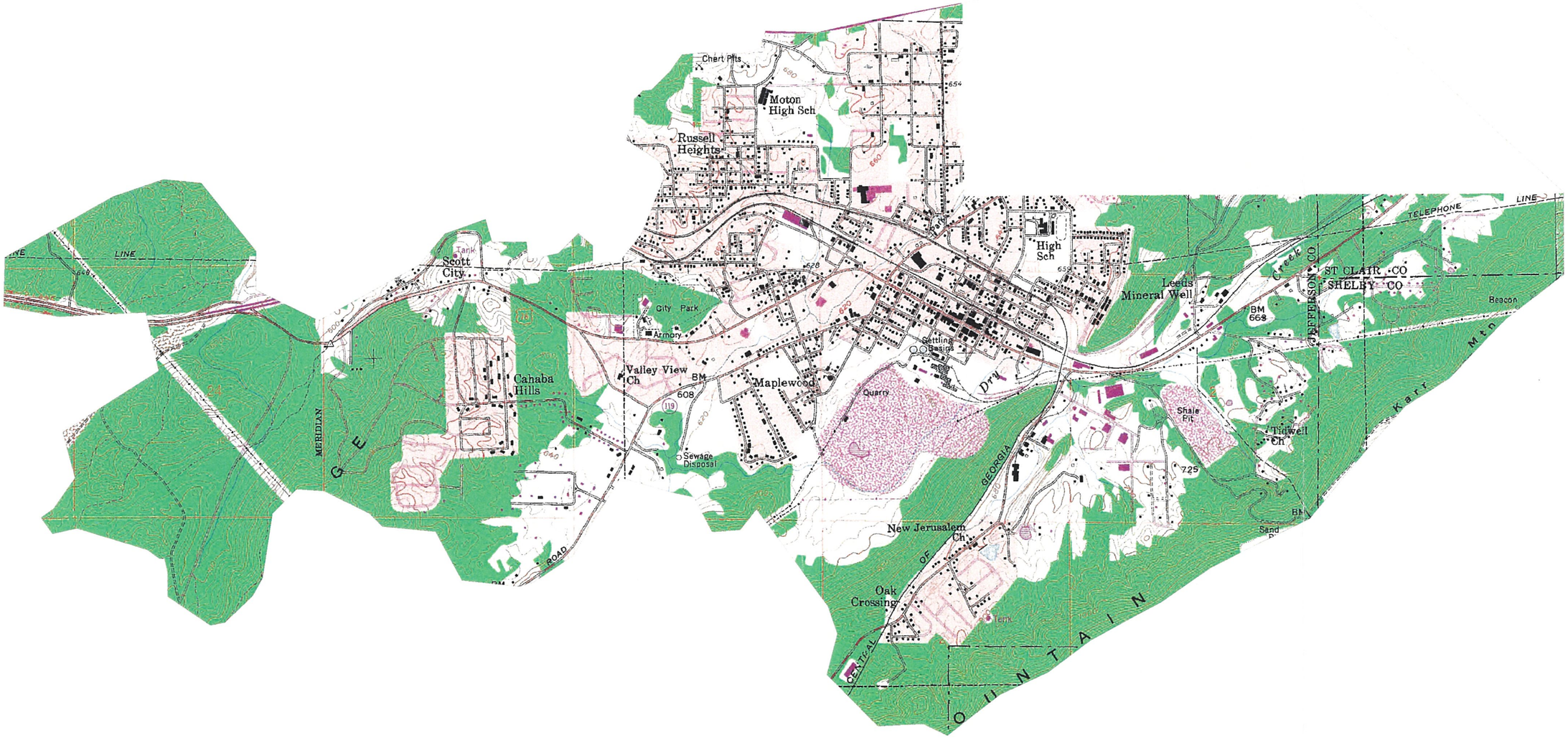
If yes, provide a written explanation for this situation in the space below.

Leeds Wastewater Treatment Plant

ATTACHMENT 2 – Raw Sewage Bypass and

SUMMARY

LEEDS BASIN 2013 DISCHARGES



NOTE: OVERFLOWS SHOWN ARE OVER 10,000 GALLONS
NONE REPORTED FOR LEEDS BASIN.

JEFFERSON COUNTY
ENVIRONMENTAL SERVICES
PLOTTED: 2-11-14

Summary of Unpermitted Discharges - Leeds

January 01, 2013 through December 31, 2013

NOTE: Quantities shown in the column "Est. Volume" are ESTIMATED ONLY. These estimates are the County's best determination of the discharge volume, based upon site-determinable information and accepted estimating methods. However, such estimates are subject to a high number of variables which are completely beyond the County's control and which can have a significant effect upon the calculated amount. Therefore, these estimates are to be used for relative comparison only, not as actual discharge volumes.

Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*
T00041	2/4/13	7237 President Street	Leeds	Ground Absorbed/ Drainage Ditch	695	Manhole	Grease/ Jetwashing Activity	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
T00048	11/14/13	8517 Hampton St	Leeds	Storm Drain		Pipe	Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes: Volume was not determinable.										

Leeds Wastewater Treatment Plant

ATTACHMENT 3 – MWPP Sewage Sludge

SURVEY

MWPP SEWAGE SLUDGE SURVEY

Facility Background Information:

1. Facility Information — Permit Number: AL0067067
   - Name: LEEDS WWTP
   - Street Address: 800 HELEN STREET
   - County: JEFFERSON
2. Facility Contact
   - Name: David Willoughby
   - Title: PLANT SUPERINTENDENT
   - Telephone: (205) 699-8495
   - Permittee Name: JEFFERSON COUNTY COMMISSION (Leeds WWTP)
   - Mailing Address: SUITE A-300, 716 RICHARD ARRINGTON, JR. BLVD. N.

Facility Flow Information

1. Facility Wastewater Treatment Capacity
   - Avg. Daily Flow for 2013: 1.17 MGD
   - Facility Design Capacity: 5.0 MGD
2. Estimated Septage Quantity Handled (Residuals Removed from Septic Tank Systems)
   - Average Domestic Septage: N/A gallons per month
   - Average Commercial Septage: N/A gallons per month
3. Method of Septage Processing
   - ☐ Mixed with Influent Wastewater for Treatment
   - ☐ Mixed with Sewage Sludge
   - X N/A
4. Estimated Percentage Contributing Wastewater Flow
   - Residential: 92 %
   - Industrial: 3 %
   - Other: 5 % Describe: COMMERCIAL
5. List type of wastewater treatment process(es) utilized at this facility:
   COMMINUTOR, GRIT REMOVAL, EXTENDED AERATION WITH ACTIVATED
6. Estimated sewage sludge wasting rate at this facility: _____ lb/day dry weight or 11,400 gallons per day
7. Estimated untreated sludge received from off site: N/A lb/day dry weight or N/A gallons per day
8. Estimated percent solids of combined sewage sludge prior to treatment: 1.86 %

9. List the sewage sludge treatment processes used in preparing sludge for final use or disposal:

	Sludge Quantity (untreated pounds per day)
Aerobic Digestion	---
Drying Beds(Air Drying)	---

10. Estimate the total volume of sludge generated: 372 (dry U.S. tons per year)

Sludge Disposal Methods

1. Which of the following describes the current method of sewage sludge disposal for this facility:

	Current Practices			Proposed Practices	
	Approved by ADEM		Quantity	Approved by ADEM	
	Yes	No	(dry U.S. tons/year)	Yes	No
a. **X** Land Application, Bulk Shipped			373		
X Agriculture	☐	☐		☐	☐
☐ Forest	☐	☐		☐	☐
☐ Public Contact	☐	☐		☐	☐
☐ Lawn/Home Garden	☐	☐		☐	☐
b. ☐ Land Application, Bagged/Other Container					
☐ Agriculture	☐	☐		☐	☐
☐ Forest	☐	☐		☐	☐
☐ Public Contact	☐	☐		☐	☐
☐ Lawn/Home Garden	☐	☐		☐	☐
c. ☐ Incineration	☐	☐		☐	☐
d. ☐ Subtitle D Landfill (Disposal Only)	☐	☐		☐	☐
e. ☐ Lined Treatment Lagoon or Stabilization Pond	☐	☐		☐	☐
f. ☐ Unlined Lagoon or Stabilization Pond	☐	☐		☐	☐
g. ☐ Other (Please Describe)	☐	☐		☐	☐

2. If "f" was selected above and sludge is stored for 2 or more years, enter the distance between the surface disposal site and the property line: _____ feet

Pollutant Concentrations

1. Enter the total concentrations of the following analytes using existing data. Do not enter TCLP results.

Analyte	Concentration (mg/kg or ppm)	Sample Type	Sample Date	Detection Level of Analysis
Arsenic	<PQL	GRAB	*	11.0
Cadmium	<PQL	GRAB	*	5.0
Chromium	62	GRAB	*	6.0
Copper	930	GRAB	*	5.0
Lead	28	GRAB	*	12.0
Mercury	2.0	GRAB	*	0.03
Molybdenum	16.00	GRAB	*	6.0
Nickel	29	GRAB	*	6.0
Selenium	<PQL	GRAB	*	12.0
Zinc	780	GRAB	*	8.0
Ammonium-Nitrogen	N/A	N/A	*	N/A
Nitrate-Nitrogen	N/A	N/A	*	N/A
Total Kjeldahl Nitrogen	27,750	GRAB	*	0.09

2. Enter the estimated or determined percent solids of the sewage sludge when sampled for the above analysis: 84 %

Treatment Provided for Sewage Sludge at the Facility

1. Which class of pathogen reduction does the sewage sludge meet at the facility? (As defined in 40 CFR Part 503)

☐ Class A
- ☐ Alternative A1 - Time and Temperature
- ☐ Alternative A2 - Alkaline Treatment
- ☐ Alternative A3 - Analysis and Operation
- ☐ Alternative A4 - Analysis Only
- ☐ Alternative A5 - Processes to Further Reduce Pathogens (PFRP)
  - ☐ Heat Drying ☐ Thermophilic Aerobic Digestion ☐ Heat Treatment
  - ☐ Pasteurization ☐ Gamma Ray Irradiation ☐ Beta Ray Irradiation
  - ☐ Composting ☐ ☐
- ☐ Alternative A6 - PFRP Equivalent _____

X Class B
- **X** Alternative B1 - Fecal Coliform Count
- ☐ Alternative B2 - Process to Significantly Reduce Pathogens (PSRP)
  - ☐ Aerobic Digestion ☐ Air Drying ☐ Anaerobic Digestion
  - ☐ Composting ☐ Lime Stabilization
- ☐ Alternative B3 - PSRP Equivalent _____

☐ Neither or Unknown

Vector Attraction Control

☐ Option 1 - Minimum 38% Reduction in Volatile Solids

☐ Option 2 - Anaerobic Processes, with Bench-Scale Demonstration of Volatile Solids Reduction
☐ Option 3 - Aerobic Processes, with Bench-Scale Demonstration of Volatile Solids Reduction
☐ Option 4 - Specific Oxygen Uptake Rate (SOUR) for Aerobically Digested Sludge
☐ Option 5 - Aerobic Processes plus Elevated Temperature
☐ Option 6 - Raised pH to 12 and Retained at 11.5
☐ Option 7 - 75% Solids with no Unstabilized Solids
☐ Option 8 - 90% Solids with Unstabilized Solids
☐ Option 9 - Injection Below Land Surface
X Option 10 - Incorporation into Soil within 6 or 8 Hours
☐ Option 11 Covering Active Sewage Sludge Unit Daily
☐ None of the Above

Groundwater Monitoring

1. If disposal practice is surface disposal or land application, is groundwater monitoring required or performed at the site?

☐ Yes
X No

(If yes, please submit a copy of the groundwater monitoring reports along with this survey. Also please provide the approximate depth to groundwater and the groundwater monitoring procedures used to obtain the data.)

Land Application of Sewage Sludge

Answer the following questions if sewage sludge is applied to land.

1. If sewage sludge is land applied in bulk form, what type of crop or other vegetation is grown on this site?
Tifton Bermuda Grass, Ryegrass

2. If sewage sludge is land applied in bulk form, what is the nitrogen requirement for this crop or vegetation?
600 lb/acre/year(Reclamation)

3. If sewage sludge is land applied in bulk form, briefly describe the nature of any complaints filed from neighbors?
No recent complaints have been filed.

Note: Permittees that submitted the "Annual Report Review Form" for sludge to the EPA may submit a copy with the MWPP in lieu of this Attachment.

Leeds Wastewater Treatment Plant

ATTACHMENT 4 – Plant and Collection System

Personnel Inventory

PLANT AND COLLECTION SYSTEM PERSONNEL INVENTORY

FACILITY NAME: Leeds (Norman R. Skinner) WWTP PLANT GRADE: III

PERMIT NUMBER: AL0067067

PLANT SUPERINTENDENT: David Willoughby TEL. # (205) 699-8495

SYSTEM MANAGER: David Denard TEL. # (205) 325-5806

PLANT OPERATORS:

	NAME	GRADE OR TRAINEE STATUS	OPERATOR NO.	EXP. DATE
1.	Ben Cato	IV	C001942	11/30/2015
2.	Doris Gill	IV	C000444	11/30/2015
3.	David Willoughby	IV	C002616	11/30/2015
4.	Wanda June McCarty	IV	C003209	7/31/2015
5.	Hermon Ramsey	IV	C003658	8/31/2015
6.	Anthony Weldon	IV	C002650	11/30/2013
7.	Willie G. Harmon			
8.	Eric T. Lawler			
9.				
10.				

COLLECTION SYSTEM OPERATORS:

1.				
2.				
3.				
4.				

	MAN HRS./WK	NUMBER
MANAGEMENT/SUPERVISOR	40	1
OPERATOR(S):		
GRADE I-C		
GRADE I		
GRADE II		
GRADE III		
GRADE IV	200	5
DESIGNATED TRAINEE(S)		
LABORATORY		
MAINTENANCE		
OTHER PLANT WORKERS	80	2

AVERAGE NUMBER OF EMPLOYEES PER SHIFT:

1ST	5	START TIME	700
2ND			
3RD			

OPERATOR SHIFTS NORMALLY WORKED EACH DAY:

	SUN	MON	TUES	WED	THURS	FRI	SAT
1ST	x	x	x	x	x	x	x
2ND							
3RD							

ADEM USE ONLY

	YES	NO
1. DOES PLANT OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		
2. DOES COLLECTION SYSTEM OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		

PLANT AND COLLECTION SYSTEM PERSONNEL INVENTORY

FACILITY NAME: Sewer Line Maintenance PLANT GRADE: IV

PERMIT NUMBER:

PLANT SUPERINTENDENT: TEL. # (205) 540-7585

SYSTEM MANAGER: David Denard TEL. # (205) 325-5979

PLANT OPERATORS:

	NAME	GRADE OR TRAINEE STATUS	OPERATOR NO.	EXP. DATE
1.	Brian Champion	I (c)	C002094	6/30/2015
2.	Don Goodwin	I (c)	C005423	6/30/2015
3.	Lavon Evans	I (c)	C004631	12/31/2014
4.	Brian Rohling	I (c)	C005418	6/30/2015
5.				
6.				
7.				
8.				
9.				
10.				

COLLECTION SYSTEM OPERATORS:

1.				
2.				
3.				
4.				

	MAN HRS./WK	NUMBER
MANAGEMENT/SUPERVISOR		
OPERATOR(S):		
GRADE I-C		
GRADE I		
GRADE II		
GRADE III		
GRADE IV		
DESIGNATED TRAINEE(S)		
LABORATORY		
MAINTENANCE		
OTHER PLANT WORKERS		

AVERAGE NUMBER OF EMPLOYEES PER SHIFT:

		START TIME
1ST		
2ND		
3RD		

OPERATOR SHIFTS NORMALLY WORKED EACH DAY:

	SUN	MON	TUES	WED	THURS	FRI	SAT
1ST							
2ND							
3RD							

ADEM USE ONLY

	YES	NO
1. DOES PLANT OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		
2. DOES COLLECTION SYSTEM OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		

Municipal Water Pollution Prevention (MWPP) Annual Report Calendar Year 2013

For the

Prudes Creek WWTP

as required by the
Alabama Department of Environmental Management NPDES Program

Prepared by
Jefferson County Commission
Environmental Services Department

May 31, 2014

JEFFERSON COUNTY COMMISSION

DAVID CARRINGTON - PRESIDENT
GEORGE F. BOWMAN
SANDRA LITTLE BROWN - PRESIDENT PRO TEMPORE
T. JOE KNIGHT
JAMES A."JIMMIE" STEPHENS

DAVID CARRINGTON – COMMISSIONER
ENVIRONMENTAL SERVICES

TONY PETELOS, COUNTY MANAGER

Office of

DAVID DENARD
Director of Environmental Services
Suite A-300
716 Richard Arrington, Jr. Blvd. N.
Birmingham, Alabama 35203
Telephone (205) 325-5496
Fax (205) 325-5981

May 31, 2014

Mr. Nic Caraway
Alabama Department of Environmental Management
Water Division – Municipal Branch
P.O. Box 301463
Montgomery, AL 36130-1463

RE: Municipal Water Pollution Prevention (MWPP)
Annual Report Calendar Year 2013

Mr. Caraway:

The Jefferson County Environmental Services Department submits the above referenced report for the Prudes Creek Wastewater Treatment Facility, NPDES Permit No. AL0056120. Included is information as required in ADEM Form 41701/06ml, bypass/overflow event reports, MWPP Sewage Sludge Survey, and the Plant & Collection System Personnel Inventory.

If you have any questions regarding this information, please contact me at 205.325.5979 or Celeste Brown at Jefferson County Barton Laboratory at 205.238.3859.

Sincerely,

David Denard, Director
Environmental Services Department

pc: Celeste Brown, JCESD Barton Laboratory
Daniel White, JCESD Deputy Director
Lynn Jones, Prudes Creek WWTP

MUNICIPAL WATER POLLUTION PREVENTION (MWPP)

ANNUAL REPORT

SUBMITTED BY:

TREATMENT FACILITY: Prudes Creek WWTP NPDES #: AL0056120

MUNICIPALITY: Jefferson County Commission COUNTY: Jefferson

CONTACT PERSON: David Denard
Municipal Official

Director of Environmental Services
Title

Telephone #: 205 - 325-5979 Fax #: 205 - 325-5981

Email Address: denardd@jcal.org

CHIEF OPERATOR: Lynn D. Jones, Plant Manager
Name

Telephone #: 205 - 841 - 5939 Fax #: 205 - 841 - 7698

Email Address: jonesly@jccal.org

Date: May 14, 2014

REVIEWED BY: Daniel White P.E., ESD Engineer
Consulting Engineer

Telephone #: 205 - 214 - 8610 Fax #: 205 - 325 - 5981

Date: May 14, 2014

MWPP Annual Report
Information Source List

The following information will be needed to complete the compliance maintenance report that covers the calendar year of 2013 (due **May 31,** 2014).

Part 1 A. The average plant influent flow for each month (million gallons per day/MGD) during the year.
B. The average plant influent BOD (CBOD) for each month (mg/l and lb/day) in the year.
C. The plant's average design flow (MGD) and design BOD loading (lbs/day).

Part 2 A. The monthly average permit and DMR effluent concentration for BOD (CBOD), TSS, NH3-N, and/or TKN in mg/l for the year
B. The monthly average effluent limits and DMR loading for BOD, TSS, NH3-N, and/or TKN in lbs/day for the year

Part 3 The age of the treatment plant defined as the number of years since the last major reconstruction to increase the organic or hydraulic capacity of the plant. The last calendar year minus the year the new construction was brought on-line.

Part 4 Bypass and overflow information. This is the number of bypass or overflow events of untreated wastewater due to heavy rain or equipment failure whether intentional or inadvertent from all collection systems tributary to the treatment facility.

Part 5 A. Describe the characteristics and quantity of sludge generated.
B. If sludge is landspread, how many months of sludge storage does the plant have? This should include on-site and off-site storage from the treatment plant. The digestor capacity may be used in the calculation.

Part 6 A. Sludge Disposal Method
B. The number of approved land disposal sites for sludge available, and how many months or years these disposal sites will these be available for use.

Part 7 The number of sewer extensions installed in the community last year--the design population, design flow, and design BOD for each sewer extension.

Part 8 Operator Certification

Part 9 Financial Status

Part 10 Subjective Evaluation

Part 11 Summary Sheet

State of Alabama
MWPP Annual Report
Department of Environmental Management

Instructions to the Operator-in-Charge

1. Complete all sections of the MWPP Report to the best of your ability.

2. Parts 1 through 8 contain questions for which points will be generated. These points are intended to communicate to the Department and the governing body or owner the actions necessary to prevent effluent violations. Enter the point totals from Parts 1 through 8 on Part 11: Summary Sheet.

3. Add the point totals on Part 11: Summary Sheet.

4. Submit the MWPP Report to the governing body and the consulting engineer and owner for review and approval.

5. The governing body should pass a resolution which contains the following points:

   a. The resolution should acknowledge the governing body or owner has reviewed the MWPP Report.

   b. The resolution should indicate what actions will be taken to prevent effluent violations.

   c. The resolution should provide any other information the governing body or owner deems appropriate.

6. **The MWPP Report and the resolution must be submitted by May 31st to Municipal Section, Water Division, ADEM, P.O. Box 301463, Montgomery, AL 36130-1463.**

Facility Name: Prudes Creek WWTP

Part 1: Influent Loading/Flows

A. List the average monthly volumetric flows and BOD_5 ($CBOD_5$) loadings received at your facility during the last calendar year.

Month	Column 1 Average Monthly Flowrate (MGD)	Column 2 Average Monthly BOD_5 ($CBOD_5$) Concentration (mg/l)	Column 3 Average Loading BOD_5 ($CBOD_5$) (lbs/day**)
January	0.68	24	135
February	0.62	34	168
March	0.55	33	143
April	0.54	51	185
May	0.45	47	139
June	0.34	50	131
July	0.37	48	121
August	0.33	42	116
September	0.25	67	133
October	0.24	73	147
November	0.29	84	223
December	0.63	30	121
Annual Avg.	0.44	49	147

**As reported on NPDES Discharge Monitoring Reports (DMRs) and as required by EPA's NPDES Self-Monitoring System, User Guide, March 1985.

B. List the average design flow and average design BOD_5 loading for the facility below. If you are not aware of these design quantities, contact your consulting engineer or the Alabama Department of Environmental Management.

	Average Design Flow	Average Design BOD_5 Loading (lbs/day)
Design Criteria	0.9	2144
90% of the Design Criteria	0.81	1930

C. How many times did the monthly flow (Column 1) to the WWTP exceed 90% of design flow? _____ (Check the appropriate point total)

☑ 0 - 4 = 0 points ☐ 5 or more = 5 points

D. How many times did the monthly flow (Column 1) to the WWTP exceed the design flow? ____ (Check the appropriate point total)

☑ 0 = 0 points ☐ 1 - 2 = 5 points ☐ 3 - 4 = 10 points ☐ 5 or more = 15 points

E. How many times did the monthly BOD_5 (or $CBOD_5$)* loading (lbs/day) (Column 3) to the WWTP exceed 90% of the design loading? ____ (Check the appropriate point total)

☑ 0 - 1 = 0 points ☐ 2 - 4 = 5 points ☐ 5 or more = 10 points

F. How many times did the monthly BOD_5 (or $CBOD_5$)* loading (lbs/day) (Column 3) to the WWTP exceed the design loading? _____ (Check the appropriate point total)

☑ 0 = 0 points ☐ 1 = 10 points ☐ 2 = 20 points ☐ 3 = 30 points ☐ 4 = 40 points ☐ 5 or more = 50 points

G. Enter each point value marked for Cthrough F and enter the sum in the appropriate blank below.

C points = 0_____

D points = 0_____

E points = 0_____

F points = 0_____

TOTAL POINTS VALUE OR PART 1 0_____
Enter this value on Part 11: Summary Sheet.

*To obtain equivalent BOD_5 loading for comparison with design loading for those permittees using influent $CBOD_5$, divide annual average $CBOD_5$, loading in lbs/day from Part 1, A by 0.7.

Facility Name: Prudes Creek WWTP

Part 2: Effluent Quality/Plant Performance

A. List the monthly average permit limits for the facility in the blanks below and the average monthly effluent DMR BOD_5, ($CBOD_5$) TSS, NH_3-N and/or TKN concentration produced by the facility during the last calendar year.

(1) NPDES Permit Concentration

	Months	BOD_5 ($CBOD_5$) (mg/l)	TSS (mg/l)	NH_3-N (mg/l)	TKN (mg/l)
Permit Limit	April - Oct.	8.0	30.0	2.5	5.0
	Nov. - May	25.0	30.0	10.0	20.0

(2) DMR Concentration

Qtr	Month	BOD_5 ($CBOD_5$) (mg/l)	TSS (mg/l)	NH_3-N (mg/l)	TKN (mg/l)
1	January	0.80	0.98	0.24	0.60
	February	0.73	0.50	0.01	0.26
	March	0.75	0.54	0.14	0.53
2	April	0.68	0.94	0.17	0.64
	May	0.43	0.68	0.03	0.27
	June	2.2	2.2	0.24	0.74
3	July	1.5	3.1	0.06	0.34
	August	0.68	0.67	0.01	0.31
	September	0.72	0.94	0.11	0.42
4	October	0.88	0.67	0.04	0.38
	November	0.89	1.5	0.01	0.32
	December	1.0	0.71	0.18	0.47
	Annual Avg.	0.94	1.1	0.10	0.44

B. List the monthly average permit limit and DMR loadings below.

(1) NPDES Permit Loading

	Months	BOD_5 ($CBOD_5$) (lbs/day)	TSS (lbs/day)	NH_3-N (lbs/day)	TKN (lbs/day)
Permit Limit	April - Oct.	60.0	225	18.7	37.5
	Nov. - May	187	225	75.0	150

(2) DMR Loading

Qtr	Month	BOD_5 ($CBOD_5$) (lbs/day)	TSS (lbs/day)	NH_3-N (lbs/day)	TKN (lbs/day)
1	January	4.6	8.9	1.4	3.5
	February	3.6	2.6	0.07	1.1
	March	3.3	1.9	0.75	2.8
2	April	2.6	3.4	0.53	2.2
	May	1.6	2.2	0.21	1.1
	June	6.3	6.8	0.83	2.5
3	July	5.2	8.9	0.26	1.3
	August	1.8	1.7	0.02	0.92
	September	1.4	1.9	0.25	0.85
4	October	1.8	1.4	0.08	0.77
	November	2.1	6.5	0.03	0.81
	December	5.4	3.4	0.98	2.3
	Annual Avg.	3.3	4.1	0.45	1.7

C. During the past year did the BOD_5 concentration (mg/l) and/or loading (lbs/day) exceed the product of 1.4 times the monthly average permit limit during two months of any consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

D. During the past year did the BOD_5 concentration (mg/l) and/or loading (lbs/day), exceed the monthly average permit limit during four months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

E. During the past year did the effluent TSS concentration (mg/l) or loading (lbs/day) exceed the product of 1.4 times the monthly average permit limit during two months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

F. During the past year did the TSS concentration (mg/l) and/or loading (lbs/day) exceed the monthly average permit limit during four months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

G. During the past year did the NH_3-N or TKN concentration (mg/l) and/or loading (lbs/day) exceed the product of 1.4 times the monthly average permit limit during two months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

H. During the past year did either the NH_3-N or TKN concentration (mg/l) and/or loading (lbs/day), exceed the monthly average permit limit during four months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

I. Enter each point value checkedfor C through H in the blanks below.

C Points = 0
D Points = 0
E Points = 0
F Points = 0
G Points = 0
H Points = 0

HIGHEST INDIVIDUAL POINT VALUE FOR PART 2 (C-H) 0 (HIGHEST POINT = 121)
Enter this value on Part 11: Summary Sheet.

Facility Name: Prudes Creek WWTP

Part 3: Age of the Wastewater Treatment Facility

A. What year was the wastewater treatment plant constructed or last reconstructed? 2006

Subtract the above answer from the report year to determine age:

Age = (Last Calendar year) - (Answer to A)

Age 7 = (2013) - (2006)

Enter Age in Part C below.

B. Check the type of treatment facility employed.

		Factor
x	Mechanical Treatment Plant	2.0
_____	Aerated Lagoon	1.5
_____	Stabilization Pond	1.0
_____	Other (Specify:_____)	1.0

C. Multiply the factor listed next to the type of the facility your community employs by the age of your facility to determine the total point value for Part 3:

2.0 (Factor) x 7.0 (Age) = 14 TOTAL POINT VALUE FOR PART 3

Enter the above value on Part 11: Summary Sheet. If the total point value exceeds 40, enter 40 on Part 11: Summary Sheet.

Facility Name: Prudes Creek WWTP

Part 4: Bypassing and Overflows

A. How many bypass or overflow events of untreated wastewater occurred in the last year at the WWTP due to heavy rain? 0

B. How many bypass or overflow events of untreated wastewater occurred in the last year prior to the headworks of the WWTP due to heavy rain? 0

C. How many of the bypass or overflow events listed in Parts A and B have been corrected such that future bypass or overflow events at the same location due to heavy rain are not anticipated? 0

D. Add together Answers A and B and subtract Answer C from that total.
A + B – C = _____(Check the appropriate point total.)

☑ 0 = 0 points ☐ 1 = 5 points ☐ 2 = 10 points ☐ 3 = 15 points ☐ 4 = 20 points ☐ 5 = 25 points ☐ 6 = 30 points
☐ 7 = 35 points ☐ 8 = 40 points ☐ 9 = 45 points ☐ 10 = 50 points ☐ 11 or more = 100 points

E. How many bypass or overflow events of untreated wastewater occurred in the last year at the WWTP due to equipment failure? (This includes clogged/broken lines or manholes.) 0

F. How many bypass or overflow events of untreated wastewater occurred in the last year due to equipment failure prior to the headworks of the WWTP? (This includes clogged/broken lines or manholes.) 0

G. How many of the bypass or overflow events listed in Parts E and F have been corrected such that future bypass or overflow events at the same location due to the same equipment failure are not anticipated? 0

H. Add together Answers E and F and subtract Answer G from that total.
E + F - G = _____ (Check the appropriate point total.)

☑ 0 = 0 points ☐ 1 = 5 points ☐ 2 = 10 points ☐ 3 = 15 points ☐ 4 = 20 points ☐ 5 = 25 points ☐ 6 = 30 points
☐ 7 = 35 points ☐ 8 = 40 points ☐ 9 = 45 points ☐ 10 = 50 points ☐ 11 or more = 100 points

I. Add point values circled in D and H and enter the total in the blank below.

TOTAL POINT VALUE FOR PART 4 0
Enter this value on Part 11: Summary Sheet.

All bypass or overflow events that have occurred in the last year (for any reason) must be individually reported with this MWPP report.

Facility Name: Prudes Creek WWTP

Part 5: Sludge Quantity and Storage

A. Please provide information concerning sludge quantity, characteristics, and storage practices based on available data as requested on the *MWPP Sewage Sludge Survey,* ADEM Form 419.

B. How many months of sludge storage capacity does the wastewater treatment facility have available, either on-site or off-site? (i.e., How many months can the facility operate without land spreading or disposing of sludge?) _____

(Check the appropriate point total.)

Greater than or equal to 4 months	= 0 points	☑
Less than 4 months, but greater than or equal to 3 months	= 10 points	☐
Less than 3 months, but greater than or equal to 2 months	= 20 points	☐
Less than 2 months, but greater than or equal to 1 month	= 30 points	☐
Less than one month	= 50 points	☐

TOTAL POINT VALUE FOR PART 5 0
Enter this value on Part 11: Summary Sheet.

Part 6: Sludge Disposal Practices and Sites

A. Please provide the sludge disposal practices and site information based on available data as requested on the *MWPP Sewage Sludge Survey,* ADEM Form 419.

B. How many months or years does the facility have access to and approval for sufficient land disposal sites to provide proper land disposal? (Check the appropriate point total.)

36 or more months	= 0 points	☐
24 - 35 months	= 10 points	☐
12 - 23 months	= 20 points	☑
6 - 11 months	= 30 points	☐
Less than 6 months	= 50 points	☐

TOTAL POINT VALUE FOR PART 6 20
Enter this value on Part 11: Summary Sheet.

Facility Name: Prudes Creek WWTP

Part 7: New Development

Are there any major new developments (industrial, commercial, or residential) in the last calendar year or anticipated in the next 2-3 years such that either flow or BOD_5 loadings to the sewage system could significantly increase? Estimate additional loadings below.

Design Population:_____ Equivalent (PE)	Design Flow:_____MGD	Design BOD_5:_____lbs/day

List industrial and/or residential developments.

No major new developments planned.

Will the additional loading overload the plant? (Check the appropriate point total.)

No = 0 points ☑ Yes = 121 points ☐

Enter the point total in the blank below.

TOTAL POINT VALUE FOR PART 7 0 (highest point total = 121)
Enter this value on Part 11: Summary Sheet.

Part 8: Operator Certification

Complete the *Plant and Collection System Personnel Inventory,* ADEM Form 441.

Do both the plant operator and collection system staffing comply with ADEM Administrative Code; Division 10, Operator Certification Program? (Check the appropriate point total.)

Yes = 0 points ☑ No = 121 points ☐

TOTAL POINT VALUE FOR PART 8 0 (highest point total = 121)
Enter this value on Part 11: Summary Sheet.

Facility Name: Prudes Creek WWTP

Part 9: Financial Status

A. Are User-Charge Revenues sufficient to cover operation and maintenance expenses? If no, how are O&M costs being financed? ***Include user charge rates***.

Revenues are sufficient. The below values are based on a 5/8" meter and 6,000 gallons water use. Jefferson County has a three tier block rate structure for residential users for 0-3, 4-6, and 7+ ccf water use.

Residential Minimum 15.00 Plus rate 6.02; 9.36; 10.69 /1,000 gal.

Industrial Minimum 15.00 Plus rate 10.51 /1,000 gal.

Monthly residential rate based on 6,000 gallons usage $ 56.04 (includes 15% credit for residential)

Please complete the above information based on your user charge rates for the report year. You may attach a sample water and sewer bill for clarity.

B. What financial resources are available to pay for the wastewater improvements and/or reconstruction needs?

In 2013, Jefferson County issued Series 2013 Sewer Warrants that fund capital improvements through 2023 at an annual average rate of $71.9 million over the 10-year period.

Part 10: Subjective Evaluation

A. Describe briefly the physical and structural conditions of the wastewater treatment facility.

Most of the WWTP was upgraded or newly constructed in 2006 and is in good condition. Some equipment and processes were constructed in the 80s and 90s and are in fair to average condition.

B. Describe the general condition of the sewer system (sewer lines, manholes, lift stations).

The Prudes system includes roughly 164,000' of pipe and 8 pump stations. The system's performance in 2013 was exceptional.

C. What sewage system improvements does the community have planned for construction in the next 5 years?

Routine maintenance and system renewal are budgeted within the capital improvement plan.

Sewer line repairs and replacements are continual activities planned for the collection systems.

D. What is the theoretical design life of the plant, and what is the estimated remaining useful life of the wastewater treatment facility?

Calculated remaining useful life of the structures is 50 years - years age of facility.

Remaining useful life of equipment is 25 years - years age of equipment.

Based on EPA's 2002 Clean Water and Drinking Water Infrastructure Gap Analysis Report.

E. What problems, if any, over the last year have threatened treatment or conveyance within the system?

None

F. Is the community presently involved in formal planning for treatment facility upgrading?

No.

G. How many days in the last year were there residential backups at any point in the collection system for any reason other than clogging of the lateral connection? 0

H. Does the plant have a written plan for preventive maintenance on major equipment items? If yes, describe.

Yes. Our INFOR maintenance program generate work tickets for scheduled preventive maintenance. This is backed up

by written records of scheduled service provided for each piece of equipment by our maintenance shop.

I. Does this preventive maintenance program depict frequency of intervals, types of lubrication, and other preventive maintenance tasks necessary for each piece of equipment? (Check the appropriate response.) Yes ☑ No ☐

J. Are these preventive maintenance tasks, as well as equipment problems, being recorded and filed so future maintenance problems can be assessed properly? (Check the appropriate response.) Yes ☑ No ☐

K. Describe any major repairs or mechanical equipment replacement made in the last year and include the approximate cost for those repairs. Do not include major treatment plant construction or upgrading programs.

In our continuing automation efforts at Prudes Creek 2 LIMITORQUE actuators were purchased at a cost of 8996.00.

$7338.43 was the cost of UV repairs.

L. List any additional comments. (Attach additional sheets if necessary.)

Facility Name: Prudes Creek WWTP

Part 11: Summary Sheet

1. Enter in the values from Parts 1 through 8 in the left column below. Add the numbers in the left column to determine the MWPP Report point total the wastewater system generated for the previous calendar year.

Actual Values	Maximum Possible
Part 1 0 points	80 points
Part 2 0 points	121 points
Part 3 14 points	40 points
Part 4 0 points	200 points
Part 5 0 points	50 points
Part 6 20 points	50 points
Part 7 0 points	121 points
Part 8 0 points	121 points
Total 34 points	783 points

2. Check the facility type that best describes the plant's treatment and disposal of wastewater.

- [✓] Mechanical plant with surface water discharge
- [ ] Aerated Lagoon or stabilization pond with surface water discharge
- [ ] Mechanical plant using land disposal of liquid wastes
- [ ] Aerated Lagoon or stabilization pond using land disposal of liquid wastes

3. Check the range that describes the action needed to address problems identified in the report.

- [✓] 0 - 70 pts. Actions as Appropriate*
- [ ] 71 - 120 pts. Departmental Recommendation Range*
- [ ] 121 – 783 Municipality Action Range*

***Other actions may be required by NPDES outside the scope of this report.**

4. Complete the *Municipal Water Pollution Prevention Resolution Form*, ADEM Form 418.

5. In Question 1, do any of the actual point values in the left column equal the maximum possible points in the right column? (Check the appropriate response) Yes ☐ No ☑

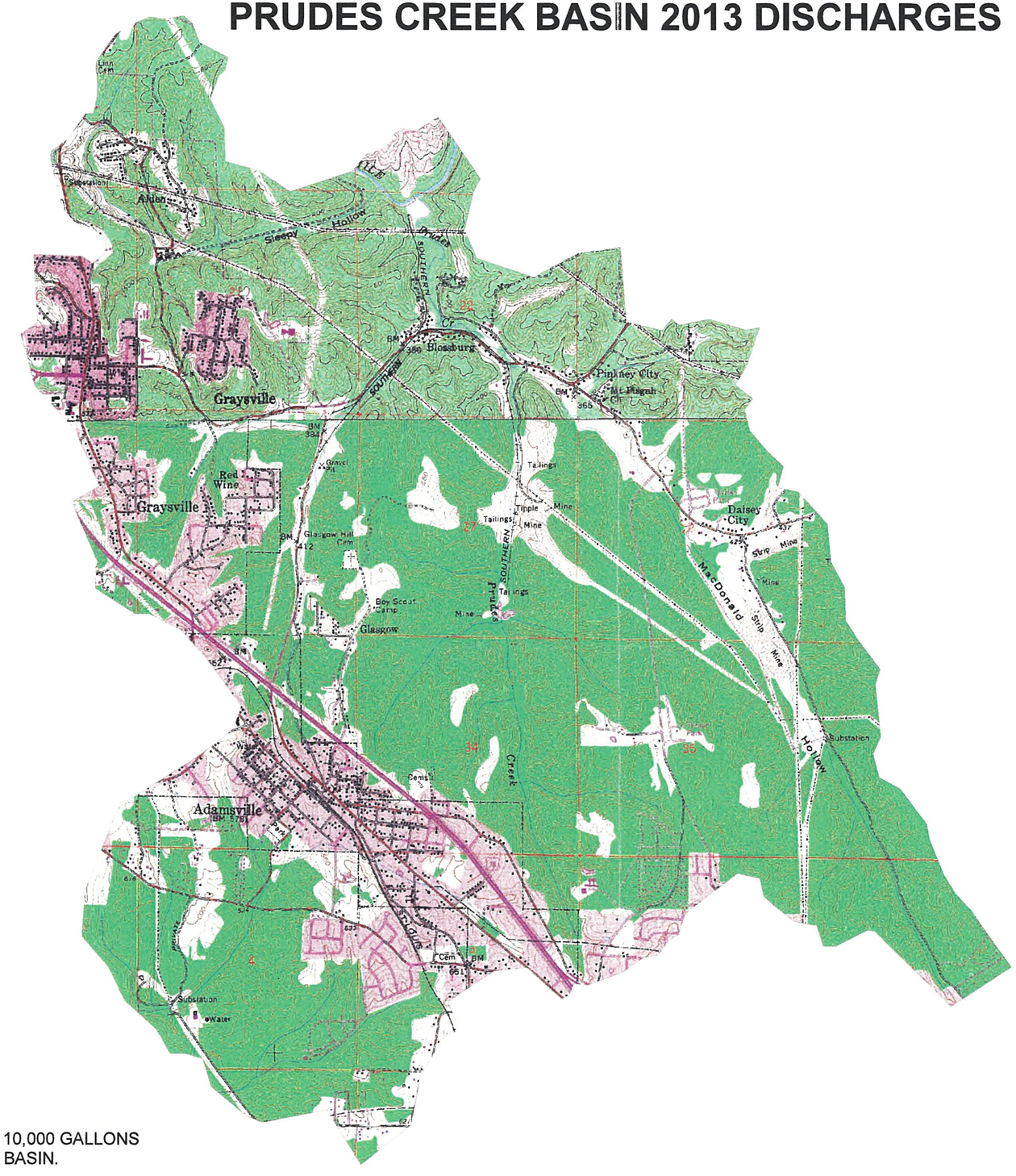
If yes, provide a written explanation for this situation in the space below.

Prudes Creek Wastewater Treatment Plant

ATTACHMENT 2 – Raw Sewage Bypass and

SUMMARY

PRUDES CREEK BASIN 2013 DISCHARGES



NOTE: OVERFLOWS SHOWN ARE OVER 10,000 GALLONS
NONE REPORTED FOR PRUDES CREEK BASIN.

JEFFERSON COUNTY
ENVIRONMENTAL SERVICES
PLOTTED: 2-11-14

Summary of Unpermitted Discharges - Prudes Creek

January 01, 2013 through December 31, 2013

NOTE: Quantities shown in the column "Est. Volume" are ESTIMATED ONLY. These estimates are the County's best determination of the discharge volume, based upon site-determinable information and accepted estimating methods. However, such estimates are subject to a high number of variables which are completely beyond the County's control and which can have a significant effect upon the calculated amount. Therefore, these estimates are to be used for relative comparison only, not as actual discharge volumes.

Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*

Notes:

No Unpermitted Discharges for 2013

Prudes Creek Wastewater Treatment Plant

ATTACHMENT 3 – MWPP Sewage Sludge

SURVEY

MWPP SEWAGE SLUDGE SURVEY

Facility Background Information:

1. Facility Information

Permit Number: AL0026913

Name: Prudes Creek WWTP

Street Address: 500 Water Trail Graysville, AL 35073

County: Jefferson County

2. Facility Contact

Name: Lynn D. Jones

Title: Plant Manager

Telephone: 205 - 841 - 5939

Permittee Name: Jefferson County Commission

Mailing Address: Environmental Services Department Suite A-300

716 Richard Arrington Jr. Blvd. N. Birmingham, Alabama 35203

Facility Flow Information

1. Facility Wastewater Treatment Capacity

Avg. Daily Flow for ~~2000~~ 2013: 0.44 MGD

Facility Design Capacity: 0.9 MGD

2. Estimated Septage Quantity Handled (Residuals Removed from Septic Tank Systems)

Average Domestic Septage: N/A gallons per month

Average Commercial Septage: N/A gallons per month

3. Method of Septage Processing

Mixed with Influent Wastewater for Treatment

Mixed with Sewage Sludge

N/A

4. Estimated Percentage Contributing Wastewater Flow

Residential: 98 %

Industrial: %

Other: 2 % Describe: COMMERCIAL

5. List type of wastewater treatment process(es) utilized at this facility:

Screening, grit removal, aeration with activated sludge, clarification, sandfiltration, UV disenfection

6. Estimated sewage sludge wasting rate at this facility: lb/day dry weight

or 46 gallons per day

7. Estimated untreated sludge received from off site: lb/day dry weight

or N/A gallons per day

8. Estimated percent solids of combined sewage sludge prior to treatment: 2.4 %

9. List the sewage sludge treatment processes used in preparing sludge for final use or disposal:

	Sludge Quantity (untreated pounds per day)
Aerobic Digestion	
Thickening	
Drying Beds (air drying)	

10. Estimate the total volume of sludge generated: 122.5 (dry U.S. tons per year)

Sludge Disposal Methods

1. Which of the following describes the current method of sewage sludge disposal for this facility:

	Current Practices Approved by ADEM Yes	Current Practices Approved by ADEM No	Current Practices Quantity (dry U.S. tons/year)	Proposed Practices Approved by ADEM Yes	Proposed Practices Approved by ADEM No
a. Land Application, Bulk Shipped			122.5		
[X] Agriculture				X	
Forest					
Public Contact					
Lawn/Home Garden					
b. Land Application, Bagged/Other Container					
Agriculture					
Forest					
Public Contact					
Lawn/Home Garden					
c. Incineration					
d. Subtitle D Landfill (Disposal Only)					
e. Lined Treatment Lagoon or Stabilization Pond					
f. Unlined Lagoon or Stabilization Pond					
g. Other (Please Describe)					

2. If "f" was selected above and sludge is stored for 2 or more years, enter the distance between the surface disposal site and the property line: _____ feet

Pollutant Concentrations

1. Enter the total concentrations of the following analytes using existing data. Do not enter TCLP results.

Analyte	Concentration (mg/kg or ppm)	Sample Type	Sample Date	Detection Level of Analysis
Arsenic	<PQL	grab	*	11.0
Cadmium	<PQL	grab	*	8
Chromium	36.3	grab	*	8.0
Copper	210	grab	*	8.0
Lead	38.8	grab	*	15.0
Mercury	4.8	grab	*	0.6
Molybdenum	<PQL	grab	*	5.0
Nickel	23.3	grab	*	6.0
Selenium	<PQL	grab	*	15.0
Zinc	1,150	grab	*	18.0
Ammonium-Nitrogen	-	N/A	N/A	N/A
Nitrate-Nitrogen	-	N/A	N/A	N/A
Total Kjeldahl Nitrogen	20,875	grab	*	1.8

2. Enter the estimated or determined percent solids of the sewage sludge when sampled for the above analysis: 48 %

Treatment Provided for Sewage Sludge at the Facility

1. Which class of pathogen reduction does the sewage sludge meet at the facility? (As defined in 40 CFR Part 503)

Class A

- Alternative A1 - Time and Temperature
- Alternative A2 - Alkaline Treatment
- Alternative A3 - Analysis and Operation
- Alternative A4 - Analysis Only
- Alternative A5 - Processes to Further Reduce Pathogens (PFRP)
  - Heat Drying
  - Pasteurization
  - Composting
  - Thermophilic Aerobic Digestion
  - Gamma Ray Irradiation
  - Heat Treatment
  - Beta Ray Irradiation
- Alternative A6 - PFRP Equivalent _____

Class B

- X Alternative B1 - Fecal Coliform Count
- Alternative B2 - Process to Significantly Reduce Pathogens (PSRP)
  - Aerobic Digestion
  - Composting
  - X Air Drying
  - Lime Stabilization
  - Anaerobic Digestion
- Alternative B3 - PSRP Equivalent _____

Neither or Unknown

Vector Attraction Control

Option 1 - Minimum 38% Reduction in Volatile Solids
Option 2 - Anaerobic Processes, with Bench-Scale Demonstration of Volatile Solids Reduction
Option 3 - Aerobic Processes, with Bench-Scale Demonstration of Volatile Solids Reduction
Option 4 - Specific Oxygen Uptake Rate (SOUR) for Aerobically Digested Sludge
Option 5 - Aerobic Processes plus Elevated Temperature
Option 6 - Raised pH to 12 and Retained at 11.5
Option 7 - 75% Solids with no Unstabilized Solids
Option 8 - 90% Solids with Unstabilized Solids
Option 9 - Injection Below Land Surface
X Option 10 - Incorporation into Soil within 6 or 8 Hours
Option 11 Covering Active Sewage Sludge Unit Daily
None of the Above

Groundwater Monitoring

1. If disposal practice is surface disposal or land application, is groundwater monitoring required or performed at the site?

Yes
X No

(If yes, please submit a copy of the groundwater monitoring reports along with this survey. Also please provide the approximate depth to groundwater and the groundwater monitoring procedures used to obtain the data.)

Land Application of Sewage Sludge

Answer the following questions if sewage sludge is applied to land.

1. If sewage sludge is land applied in bulk form, what type of crop or other vegetation is grown on this site?

Tifton Bermuda grass and Rye Grass.

2. If sewage sludge is land applied in bulk form, what is the nitrogen requirement for this crop or vegetation?

The nitrogen requirement is 600lbs / acre /year.

3. If sewage sludge is land applied in bulk form, briefly describe the nature of any complaints filed from neighbors?

No complaints received.

Note: Permittees that submitted the "Annual Report Review Form" for sludge to the EPA may submitt a copy with the MWPP in lieu of this Attachment.

Prudes Creek Wastewater Treatment Plant

ATTACHMENT 4 – Plant and Collection System

Personnel Inventory

PLANT AND COLLECTION SYSTEM PERSONNEL INVENTORY

FACILITY NAME: Five Mile Creek WWTP PLANT GRADE: IV

PERMIT NUMBER: AL0026913

PLANT MANAGER: Lynn Jones TEL. # (205) 841-5939

SYSTEM MANAGER David Denard TEL. # (205) 325-5806

PLANT OPERATORS:

	NAME	GRADE OR TRAINEE STATUS	OPERATOR NO.	EXP. DATE
1	Lynn Jones	Plant Manager	C003327	9/30/2014
2	Robert Tyler	Shift Supervisor	C003008	11/30/2015
3	Randy Maxwell	Shift Supervisor	C003076	11/30/2015
4	Terry Joe MaHaffey	Shift Supervisor	C003135	8/31/2016
5	Tony Sutton	Shift Supervisor	C002294	11/30/2015
6	Mark Cruce	Operator II	C001682	3/31/2015
7	Adam Smith	Operator II	C002236	4/30/2016
8	Daniel Tesseneer	Operator II	C006050	6/30/2014
9	Ellis Brown	Operator I		
10	Sam Shears	Operator I		
11	Todd Smitherman	Operator I		
12	Michael Wright	Operator I		

	MAN HRS./WK	NUMBER
Avg Daily	40	7
GRADE I-C		
GRADE I		
GRADE II		
GRADE III		
GRADE IV	40	8
MANAGEMENT/SUPERVISOR	40	5
OPERATOR(S):	40	3
TRAINEE(S)	40	4
OTHER PLANT WORKERS		

AVERAGE NUMBER OF EMPLOYEES PER SHIFT:

1ST	5
2ND	2
3rd	2
weekend	2

START TIME

M -F	Sat-Sun
7:00a.m.	7:00am
3:00p.m.	7:00pm
11:00p.m.	7:00am

OPERATOR SHIFTS NORMALLY WORKED EACH DAY:

	SUN	MON	TUES	WED	THURS	FRI	SAT
1ST	X	X	X	X	X	X	X
2ND	X	X	X	X	X	X	X
3RD	X	X	X	X	X	X	X

ADEM USE ONLY

1. DOES PLANT OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?
2. DOES COLLECTION SYSTEM OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?

YES	NO

ADEM FORM 441 8/02

PLANT AND COLLECTION SYSTEM PERSONNEL INVENTORY

Continued

FACILITY NAME: Prudes Creek WWTP PLANT GRADE: IV

PERMIT NUMBER: AL0026913

PLANT SUPERINTENDENT: Lynn Jones TEL. #(205) 841-5939

SYSTEM MANAGER: David Denard TEL. #(205) 325-5806

PLANT OPERATORS:

	NAME	GRADE OR TRAINEE STATUS	OPERATOR NO.	EXP. DATE
15	Garren Hubbert	Trainee		
16	Johnny McDonough	Trainee		
17	Billy Joe Poe	Trainee		
18	Samuel Shears	Trainee		
19	Todd Smitherman	Trainee		
20	Daniel Tesseneer	Trainee		
21	Michael Wright	Trainee		

	MAN HRS./WK	NUMBER
MANAGEMENT/SUPERVISOR		
OPERATOR(S):		
GRADE I-C		
GRADE I		
GRADE II		
GRADE III		
GRADE IV		
DESIGNATED TRAINEE(S)		
LABORATORY		
MAINTENANCE		
OTHER PLANT WORKERS		

AVERAGE NUMBER OF EMPLOYEES PER SHIFT:

		START TIME
1ST		
2ND		
3RD		

OPERATOR SHIFTS NORMALLY WORKED EACH DAY:

	SUN	MON	TUES	WED	THURS	FRI	SAT
1ST							
2ND							
3RD							

ADEM USE ONLY

	YES	NO
1. DOES PLANT OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		
2. DOES COLLECTION SYSTEM OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		

PLANT AND COLLECTION SYSTEM PERSONNEL INVENTORY

FACILITY NAME: Sewer Line Maintenance PLANT GRADE: IV

PERMIT NUMBER:

PLANT SUPERINTENDENT: TEL. # (205) 540-7585

SYSTEM MANAGER: David Denard TEL. # (205) 325-5979

PLANT OPERATORS:

	NAME	GRADE OR TRAINEE STATUS	OPERATOR NO.	EXP. DATE
1.	Brian Champion	I (c)	C002094	6/30/2015
2.	Don Goodwin	I (c)	C005423	6/30/2015
3.	Lavon Evans	I (c)	C004631	12/31/2014
4.	Brian Rohling	I (c)	C005418	6/30/2015
5.				
6.				
7.				
8.				
9.				
10.				

COLLECTION SYSTEM OPERATORS:

1.				
2.				
3.				
4.				

	MAN HRS./WK	NUMBER
MANAGEMENT/SUPERVISOR		
OPERATOR(S):		
GRADE I-C		
GRADE I		
GRADE II		
GRADE III		
GRADE IV		
DESIGNATED TRAINEE(S)		
LABORATORY		
MAINTENANCE		
OTHER PLANT WORKERS		

AVERAGE NUMBER OF EMPLOYEES PER SHIFT:

		START TIME
1ST		
2ND		
3RD		

OPERATOR SHIFTS NORMALLY WORKED EACH DAY:

	SUN	MON	TUES	WED	THURS	FRI	SAT
1ST							
2ND							
3RD							

ADEM USE ONLY

	YES	NO
1. DOES PLANT OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		
2. DOES COLLECTION SYSTEM OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		

Municipal Water Pollution Prevention (MWPP) Annual Report Calendar Year 2013

For the

Trussville WWTP

as required by the
Alabama Department of Environmental Management NPDES Program

Prepared by
Jefferson County Commission
Environmental Services Department

May 31, 2014

JEFFERSON COUNTY COMMISSION

DAVID CARRINGTON - PRESIDENT
GEORGE F. BOWMAN
SANDRA LITTLE BROWN - PRESIDENT PRO TEMPORE
T. JOE KNIGHT
JAMES A."JIMMIE" STEPHENS

DAVID CARRINGTON – COMMISSIONER
ENVIRONMENTAL SERVICES

TONY PETELOS, COUNTY MANAGER

Office of

DAVID DENARD
Director of Environmental Services
Suite A-300
716 Richard Arrington, Jr. Blvd. N.
Birmingham, Alabama 35203
Telephone (205) 325-5496
Fax (205) 325-5981

May 31, 2014

Mr. Nic Caraway
Alabama Department of Environmental Management
Water Division – Municipal Branch
P.O. Box 301463
Montgomery, AL 36130-1463

RE: Municipal Water Pollution Prevention (MWPP)
Annual Report Calendar Year 2013

Mr. Caraway:

The Jefferson County Environmental Services Department submits the above referenced report for the Trussville Wastewater Treatment Facility, NPDES Permit No. AL0022934. Included is information as required in ADEM Form 41701/06ml, bypass/overflow event reports, MWPP Sewage Sludge Survey, and the Plant & Collection System Personnel Inventory.

If you have any questions regarding this information, please contact me at 205.325.5979 or Celeste Brown at Jefferson County Barton Laboratory at 205.238.3859.

Sincerely,

David Denard, Director
Environmental Services Department

pc: Celeste Brown, JCESD Barton Laboratory
Daniel White, JCESD Deputy Director
David Willoughby, Trussville WWTP

MUNICIPAL WATER POLLUTION PREVENTION (MWPP)

ANNUAL REPORT

SUBMITTED BY:

TREATMENT FACILITY: Trussville WWTP NPDES #: AL 0022934

MUNICIPALITY: Jefferson County COUNTY: Jefferson

CONTACT PERSON: David Denard
Municipal Official

Director of Environmental Services
Title

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Email Address: denardd@jccal.org

CHIEF OPERATOR: David Willoughby
Name

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Email Address: willoughbyd@jccal.org

Date: May 14, 2014

REVIEWED BY: Daniel White P.E., ESD Engineer
Consulting Engineer

Telephone #: 205 214 8610 Fax #: 205 325 5688

Date: May 14, 2014

MWPP Annual Report
Information Source List

The following information will be needed to complete the compliance maintenance report that covers the calendar year of 2013 (due **May 31,** 2014).

Part 1 A. The average plant influent flow for each month (million gallons per day/MGD) during the year.
B. The average plant influent BOD (CBOD) for each month (mg/l and lb/day) in the year.
C. The plant's average design flow (MGD) and design BOD loading (lbs/day).

Part 2 A. The monthly average permit and DMR effluent concentration for BOD (CBOD), TSS, NH3-N, and/or TKN in mg/l for the year
B. The monthly average effluent limits and DMR loading for BOD, TSS, NH3-N, and/or TKN in lbs/day for the year

Part 3 The age of the treatment plant defined as the number of years since the last major reconstruction to increase the organic or hydraulic capacity of the plant. The last calendar year minus the year the new construction was brought on-line.

Part 4 Bypass and overflow information. This is the number of bypass or overflow events of untreated wastewater due to heavy rain or equipment failure whether intentional or inadvertent from all collection systems tributary to the treatment facility.

Part 5 A. Describe the characteristics and quantity of sludge generated.
B. If sludge is landspread, how many months of sludge storage does the plant have? This should include on-site and off-site storage from the treatment plant. The digestor capacity may be used in the calculation.

Part 6 A. Sludge Disposal Method
B. The number of approved land disposal sites for sludge available, and how many months or years these disposal sites will these be available for use.

Part 7 The number of sewer extensions installed in the community last year--the design population, design flow, and design BOD for each sewer extension.

Part 8 Operator Certification

Part 9 Financial Status

Part 10 Subjective Evaluation

Part 11 Summary Sheet

State of Alabama
MWPP Annual Report
Department of Environmental Management

Instructions to the Operator-in-Charge

1. Complete all sections of the MWPP Report to the best of your ability.

2. Parts 1 through 8 contain questions for which points will be generated. These points are intended to communicate to the Department and the governing body or owner the actions necessary to prevent effluent violations. Enter the point totals from Parts 1 through 8 on Part 11: Summary Sheet.

3. Add the point totals on Part 11: Summary Sheet.

4. Submit the MWPP Report to the governing body and the consulting engineer and owner for review and approval.

5. The governing body should pass a resolution which contains the following points:

   a. The resolution should acknowledge the governing body or owner has reviewed the MWPP Report.

   b. The resolution should indicate what actions will be taken to prevent effluent violations.

   c. The resolution should provide any other information the governing body or owner deems appropriate.

6. **The MWPP Report and the resolution must be submitted by May 31st to Municipal Section, Water Division, ADEM, P.O. Box 301463, Montgomery, AL 36130-1463.**

Facility Name: Trussville WWTP

Part 1: Influent Loading/Flows

A. List the average monthly volumetric flows and BOD_5 ($CBOD_5$) loadings received at your facility during the last calendar year.

Month	Column 1 Average Monthly Flowrate (MGD)	Column 2 Average Monthly BOD_5 ($CBOD_5$) Concentration (mg/l)	Column 3 Average Loading BOD_5 ($CBOD_5$) (lbs/day**)
January	3.51	80	2229
February	3.47	81	2231
March	2.62	93	2025
April	2.66	86	1748
May	2.87	80	1651
June	2.33	86	1561
July	2.23	108	1809
August	2.54	86	1618
September	1.75	111	1633
October	1.51	146	1825
November	1.69	141	1883
December	2.83	72	1769
Annual Avg.	2.50	98	1832

**As reported on NPDES Discharge Monitoring Reports (DMRs) and as required by EPA's NPDES Self-Monitoring System, User Guide, March 1985.

B. List the average design flow and average design BOD_5 loading for the facility below. If you are not aware of these design quantities, contact your consulting engineer or the Alabama Department of Environmental Management.

	Average Design Flow	Average Design BOD_5 Loading (lbs/day)
Design Criteria	4.0	10014
90% of the Design Criteria	3.6	9012

C. How many times did the monthly flow (Column 1) to the WWTP exceed 90% of design flow? _____ (Check the appropriate point total)

☑ 0 - 4 = 0 points ☐ 5 or more = 5 points

D. How many times did the monthly flow (Column 1) to the WWTP exceed the design flow? ____ (Check the appropriate point total)

☑ 0 = 0 points ☐ 1 - 2 = 5 points ☐ 3 - 4 = 10 points ☐ 5 or more = 15 points

E. How many times did the monthly BOD_5 (or $CBOD_5$)* loading (lbs/day) (Column 3) to the WWTP exceed 90% of the design loading? ____ (Check the appropriate point total)

☑ 0 - 1 = 0 points ☐ 2 - 4 = 5 points ☐ 5 or more = 10 points

F. How many times did the monthly BOD_5 (or $CBOD_5$)* loading (lbs/day) (Column 3) to the WWTP exceed the design loading? _____ (Check the appropriate point total)

☑ 0 = 0 points ☐ 1 = 10 points ☐ 2 = 20 points ☐ 3 = 30 points ☐ 4 = 40 points ☐ 5 or more = 50 points

G. Enter each point value marked for Cthrough F and enter the sum in the appropriate blank below.

C points = 0

D points = 0

E points = 0

F points = 0

TOTAL POINTS VALUE OR PART 1 0
Enter this value on Part 11: Summary Sheet.

*To obtain equivalent BOD_5 loading for comparison with design loading for those permittees using influent $CBOD_5$, divide annual average $CBOD_5$, loading in lbs/day from Part 1, A by 0.7.

Facility Name: Trussville WWTP

Part 2: Effluent Quality/Plant Performance

A. List the monthly average permit limits for the facility in the blanks below and the average monthly effluent DMR BOD_5, ($CBOD_5$) TSS, NH_3-N and/or TKN concentration produced by the facility during the last calendar year.

(1) NPDES Permit Concentration

	Months	BOD_5 ($CBOD_5$) (mg/l)	TSS (mg/l)	NH_3-N (mg/l)	TKN (mg/l)
Permit Limit	May-Nov	3.0	30.0	1.0	2.0
	Dec-Apr	10.0	30.0	1.0	3.0

(2) DMR Concentration

Qtr	Month	BOD_5 ($CBOD_5$) (mg/l)	TSS (mg/l)	NH_3-N (mg/l)	TKN (mg/l)
1	January	0.60	0.85	0.21	0.50
	February	0.71	0.83	0.06	0.21
	March	1.6	1.3	0.02	0.21
2	April	0.37	1.2	0.0	0.21
	May	0.28	1.6	0.0	0.29
	June	0.57	1.4	0.0	0.27
3	July	0.54	1.2	0.02	0.27
	August	0.31	1.6	0.004	0.25
	September	0.38	1.7	0.005	0.34
4	October	0.56	2.5	0.0	0.41
	November	0.51	5.4	0.02	0.63
	December	0.64	4.9	0.04	0.57
	Annual Avg.	0.59	2.0	0.03	0.35

B. List the monthly average permit limit and DMR loadings below.

(1) NPDES Permit Loading

	Months	BOD_5 ($CBOD_5$) (lbs/day)	TSS (lbs/day)	NH_3-N (lbs/day)	TKN (lbs/day)
Permit Limit	May-Nov	100	1000	33.3	66.7
	Dec-Apr	333	1000	33.3	100

(2) DMR Loading

Qtr	Month	BOD_5 ($CBOD_5$) (lbs/day)	TSS (lbs/day)	NH_3-N (lbs/day)	TKN (lbs/day)
1	January	17	39	13	25
	February	20	26	2.6	7.0
	March	29	31	0.83	5.0
2	April	7.6	25	0.00	4.1
	May	5.1	31	0.00	6.3
	June	13	26	0.00	5.5
3	July	10.9	28	0.48	5.6
	August	6.0	32	0.06	5.1
	September	5.7	26	0.10	5.1
4	October	7.0	31	0.00	5.0
	November	8.0	75	0.54	9.3
	December	19	141	1.7	16
	Annual Avg.	12	43	1.6	8.2

C. During the past year did the BOD_5 concentration (mg/l) and/or loading (lbs/day) exceed the product of 1.4 times the monthly average permit limit during two months of any consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

D. During the past year did the BOD_5 concentration (mg/l) and/or loading (lbs/day), exceed the monthly average permit limit during four months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

E. During the past year did the effluent TSS concentration (mg/l) or loading (lbs/day) exceed the product of 1.4 times the monthly average permit limit during two months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

F. During the past year did the TSS concentration (mg/l) and/or loading (lbs/day) exceed the monthly average permit limit during four months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

G. During the past year did the NH_3-N or TKN concentration (mg/l) and/or loading (lbs/day) exceed the product of 1.4 times the monthly average permit limit during two months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

H. During the past year did either the NH_3-N or TKN concentration (mg/l) and/or loading (lbs/day), exceed the monthly average permit limit during four months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

I. Enter each point value checkedfor C through H in the blanks below.

C Points = 0
D Points = 0
E Points = 0
F Points = 0
G Points = 0
H Points = 0

HIGHEST INDIVIDUAL POINT VALUE FOR PART 2 (C-H) 0 (HIGHEST POINT = 121)
Enter this value on Part 11: Summary Sheet.

Facility Name: Trussville WWTP

Part 3: Age of the Wastewater Treatment Facility

A. What year was the wastewater treatment plant constructed or last reconstructed? 1998

Subtract the above answer from the report year to determine age:

Age = (Last Calendar year) - (Answer to A)

Age 15 = (2013) - (1998)

Enter Age in Part C below.

B. Check the type of treatment facility employed.

		Factor
x	Mechanical Treatment Plant	2.0
	Aerated Lagoon	1.5
	Stabilization Pond	1.0
	Other (Specify:)	1.0

C. Multiply the factor listed next to the type of the facility your community employs by the age of your facility to determine the total point value for Part 3:

2.0 (Factor) x 15 (Age) = 30 TOTAL POINT VALUE FOR PART 3

Enter the above value on Part 11: Summary Sheet. If the total point value exceeds 40, enter 40 on Part 11: Summary Sheet.

Facility Name: Trussville WWTP

Part 4: Bypassing and Overflows

A. How many bypass or overflow events of untreated wastewater occurred in the last year at the WWTP due to heavy rain? 0

B. How many bypass or overflow events of untreated wastewater occurred in the last year prior to the headworks of the WWTP due to heavy rain? 0

C. How many of the bypass or overflow events listed in Parts A and B have been corrected such that future bypass or overflow events at the same location due to heavy rain are not anticipated? 0

D. Add together Answers A and B and subtract Answer C from that total.
A + B – C = _____(Check the appropriate point total.)

☑ 0 = 0 points ☐ 1 = 5 points ☐ 2 = 10 points ☐ 3 = 15 points ☐ 4 = 20 points ☐ 5 = 25 points ☐ 6 = 30 points
☐ 7 = 35 points ☐ 8 = 40 points ☐ 9 = 45 points ☐ 10 = 50 points ☐ 11 or more = 100 points

E. How many bypass or overflow events of untreated wastewater occurred in the last year at the WWTP due to equipment failure? (This includes clogged/broken lines or manholes.) 0

F. How many bypass or overflow events of untreated wastewater occurred in the last year due to equipment failure prior to the headworks of the WWTP? (This includes clogged/broken lines or manholes.) 4

G. How many of the bypass or overflow events listed in Parts E and F have been corrected such that future bypass or overflow events at the same location due to the same equipment failure are not anticipated? 4

H. Add together Answers E and F and subtract Answer G from that total.
E + F - G = _____ (Check the appropriate point total.)

☑ 0 = 0 points ☐ 1 = 5 points ☐ 2 = 10 points ☐ 3 = 15 points ☐ 4 = 20 points ☐ 5 = 25 points ☐ 6 = 30 points
☐ 7 = 35 points ☐ 8 = 40 points ☐ 9 = 45 points ☐ 10 = 50 points ☐ 11 or more = 100 points

I. Add point values circled in D and H and enter the total in the blank below.

TOTAL POINT VALUE FOR PART 4 0
Enter this value on Part 11: Summary Sheet.

All bypass or overflow events that have occurred in the last year (for any reason) must be individually reported with this MWPP report.

Facility Name: Trussville WWTP

Part 5: Sludge Quantity and Storage

A. Please provide information concerning sludge quantity, characteristics, and storage practices based on available data as requested on the *MWPP Sewage Sludge Survey,* ADEM Form 419.

B. How many months of sludge storage capacity does the wastewater treatment facility have available, either on-site or off-site? (i.e., How many months can the facility operate without land spreading or disposing of sludge?) 4

(Check the appropriate point total.)

Greater than or equal to 4 months	= 0 points	☑
Less than 4 months, but greater than or equal to 3 months	= 10 points	☐
Less than 3 months, but greater than or equal to 2 months	= 20 points	☐
Less than 2 months, but greater than or equal to 1 month	= 30 points	☐
Less than one month	= 50 points	☐

TOTAL POINT VALUE FOR PART 5 0
Enter this value on Part 11: Summary Sheet.

Part 6: Sludge Disposal Practices and Sites

A. Please provide the sludge disposal practices and site information based on available data as requested on the *MWPP Sewage Sludge Survey,* ADEM Form 419.

B. How many months or years does the facility have access to and approval for sufficient land disposal sites to provide proper land disposal? (Check the appropriate point total.)

36 or more months	= 0 points	☐
24 - 35 months	= 10 points	☐
12 - 23 months	= 20 points	☑
6 - 11 months	= 30 points	☐
Less than 6 months	= 50 points	☐

TOTAL POINT VALUE FOR PART 6 20
Enter this value on Part 11: Summary Sheet.

Facility Name: Trussville WWTP

Part 7: New Development

Are there any major new developments (industrial, commercial, or residential) in the last calendar year or anticipated in the next 2-3 years such that either flow or BOD_5 loadings to the sewage system could significantly increase? Estimate additional loadings below.

Design Population: Equivalent (PE)	Design Flow: MGD	Design BOD_5: lbs/day

List industrial and/or residential developments.

No major new development

Will the additional loading overload the plant? (Check the appropriate point total.)

No = 0 points	Yes = 121 points
☑	☐

Enter the point total in the blank below.

TOTAL POINT VALUE FOR PART 7 0 (highest point total = 121)
Enter this value on Part 11: Summary Sheet.

Part 8: Operator Certification

Complete the *Plant and Collection System Personnel Inventory,* ADEM Form 441.

Do both the plant operator and collection system staffing comply with ADEM Administrative Code; Division 10, Operator Certification Program? (Check the appropriate point total.)

Yes = 0 points	No = 121 points
☑	☐

TOTAL POINT VALUE FOR PART 8 0 (highest point total = 121)
Enter this value on Part 11: Summary Sheet.

Facility Name: Trussville WWTP

Part 9: Financial Status

A. Are User-Charge Revenues sufficient to cover operation and maintenance expenses? If no, how are O&M costs being financed? ***Include user charge rates***.

Revenues are sufficient. The below values are based on a 5/8" meter and 6,000 gallons water use. Jefferson County has a three tier block rate structure for residential users for 0-3, 4-6, and 7+ ccf water use.

Residential Minimum $15.00 Plus rate $6.02; 9.36; 10.69 /1,000 gal.

Industrial Minimum $15.00 Plus rate $10.51 /1,000 gal.

Monthly residential rate based on 6,000 gallons usage $ 56.04 (includes 15% credit for residential)

Please complete the above information based on your user charge rates for the report year. You may attach a sample water and sewer bill for clarity.

B. What financial resources are available to pay for the wastewater improvements and/or reconstruction needs?

In 2013, Jefferson County issued Series 2013 Sewer Warrants that fund capital improvements through 2023 at an annual average rate of $71.9 million over the 10-year period.

Part 10: Subjective Evaluation

A. Describe briefly the physical and structural conditions of the wastewater treatment facility.

All structures are in good condition.

B. Describe the general condition of the sewer system (sewer lines, manholes, lift stations).

The Trussville system includes roughly 460,000' of pipe and 8 pumping stations. The system's rate of SSO's/100 miles of sewer is slightly above the department's goal. There are no known capacity deficiencies.

The general condition of the system is good.

C. What sewage system improvements does the community have planned for construction in the next 5 years?

Completion of Phase I TMDL currently in construction; Phase II TMDL Improvements;

Improvements to Wisteria Trace and Cedar Creek pump stations.

D. What is the theoretical design life of the plant, and what is the estimated remaining useful life of the wastewater treatment facility?

Calculated remaining useful life of the structures is 35 years (50 years - 15 years age of facility).

Calculated remaining useful life of the equipment is 10 years (25 years - 15 years of equipment).

Based on EPA's 2002 Clean Water and Drinking Water Infrastructure Gap Analysis Report.

E. What problems, if any, over the last year have threatened treatment or conveyance within the system?

None

F. Is the community presently involved in formal planning for treatment facility upgrading?

No.

G. How many days in the last year were there residential backups at any point in the collection system for any reason other than clogging of the lateral connection? 6

H. Does the plant have a written plan for preventive maintenance on major equipment items? If yes, describe.

Yes. O & M Manuals are used for all equipment maintenance schedules. Preventive maintenance schedules are input into the INFOR maintenance system and PM work orders are automatically generated. All equipment PM schedules and records are maintained in the INFOR system.

I. Does this preventive maintenance program depict frequency of intervals, types of lubrication, and other preventive maintenance tasks necessary for each piece of equipment? (Check the appropriate response.) Yes ☑ No ☐

J. Are these preventive maintenance tasks, as well as equipment problems, being recorded and filed so future maintenance problems can be assessed properly? (Check the appropriate response.) Yes ☑ No ☐

K. Describe any major repairs or mechanical equipment replacement made in the last year and include the approximate cost for those repairs. Do not include major treatment plant construction or upgrading programs.

L. List any additional comments. (Attach additional sheets if necessary.)

Facility Name: Trussville WWTP

Part 11: Summary Sheet

1. Enter in the values from Parts 1 through 8 in the left column below. Add the numbers in the left column to determine the MWPP Report point total the wastewater system generated for the previous calendar year.

Actual Values	Maximum Possible
Part 1 0 points	80 points
Part 2 0 points	121 points
Part 3 30 points	40 points
Part 4 0 points	200 points
Part 5 0 points	50 points
Part 6 20 points	50 points
Part 7 0 points	121 points
Part 8 0 points	121 points
Total 50 points	783 points

2. Check the facility type that best describes the plant's treatment and disposal of wastewater.

- [✓] Mechanical plant with surface water discharge
- [ ] Aerated Lagoon or stabilization pond with surface water discharge
- [ ] Mechanical plant using land disposal of liquid wastes
- [ ] Aerated Lagoon or stabilization pond using land disposal of liquid wastes

3. Check the range that describes the action needed to address problems identified in the report.

- [✓] 0 - 70 pts. Actions as Appropriate*
- [ ] 71 - 120 pts. Departmental Recommendation Range*
- [ ] 121 – 783 Municipality Action Range*

***Other actions may be required by NPDES outside the scope of this report.**

4. Complete the *Municipal Water Pollution Prevention Resolution Form*, ADEM Form 418.

5. In Question 1, do any of the actual point values in the left column equal the maximum possible points in the right column? (Check the appropriate response) Yes ☐ No ☑

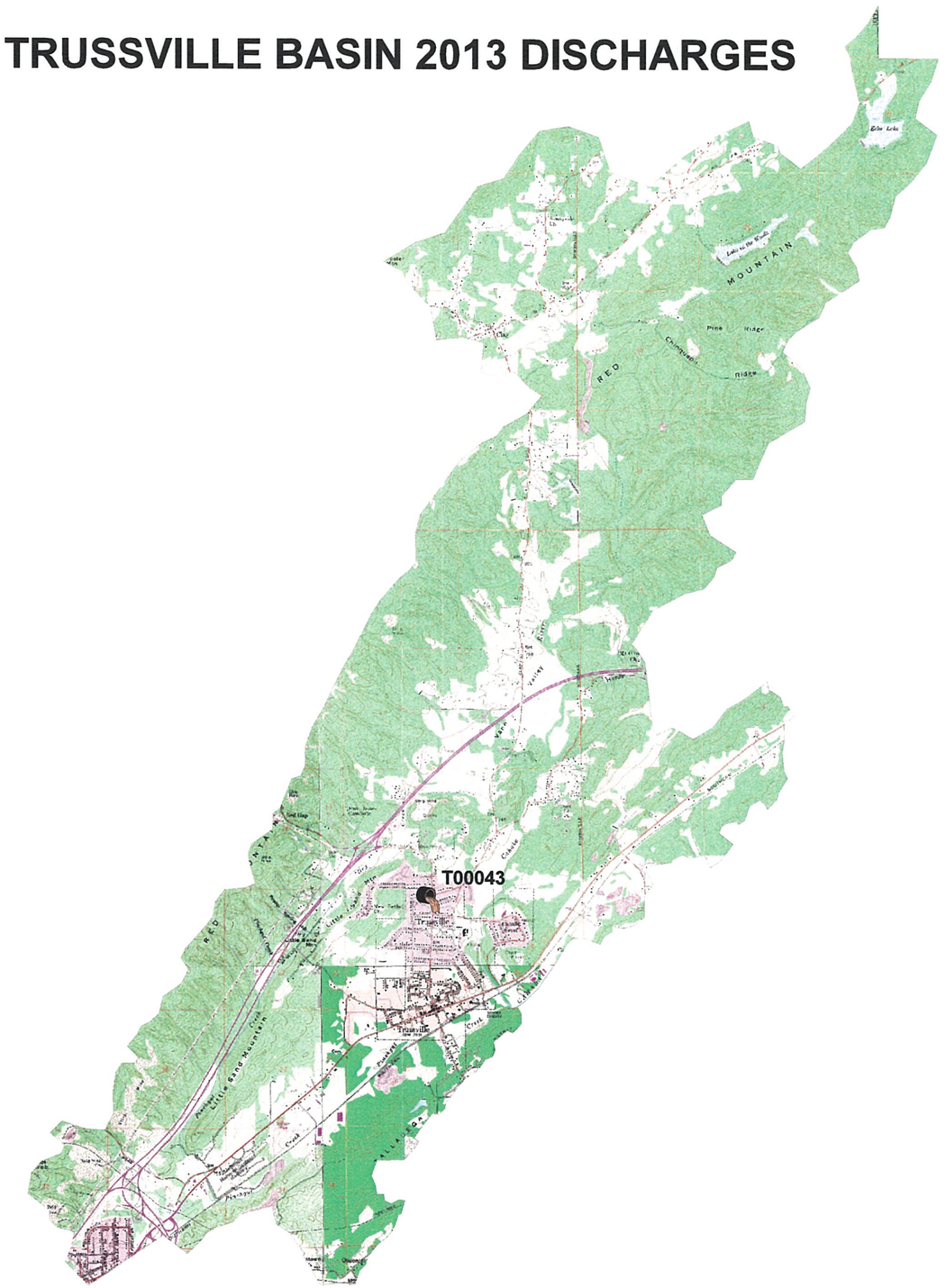
If yes, provide a written explanation for this situation in the space below.

Trussville Wastewater Treatment Plant

ATTACHMENT 2 – Raw Sewage Bypass and

SUMMARY

TRUSSVILLE BASIN 2013 DISCHARGES



NOTE: OVERFLOWS SHOWN ARE OVER 10,000 GALLONS.

JEFFERSON COUNTY
ENVIRONMENTAL SERVICES
PLOTTED: 2-11-14

Summary of Unpermitted Discharges - Trussville

January 01, 2013 through December 31, 2013

NOTE: Quantities shown in the column "Est. Volume" are ESTIMATED ONLY. These estimates are the County's best determination of the discharge volume, based upon site-determinable information and accepted estimating methods. However, such estimates are subject to a high number of variables which are completely beyond the County's control and which can have a significant effect upon the calculated amount. Therefore, these estimates are to be used for relative comparison only, not as actual discharge volumes.

Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*
T00042	3/8/13	802 Chalkville Rd	Trussville	Ground Absorbed	2	Manhole	Grease/ Roots/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes: Manhole not overflowing upon crew arrival, but there was evidence on the ground.										
T00043	4/6/13	527 Rockridge Ave	Trussville	Ground Absorbed	26,652	Pipe	Roots/ Broken Pipe	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
T00044	4/11/13	111 S Chalkville Rd	Trussville	Pinchgut Creek	200	Manhole	Grease/ Debris/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
T00046	7/3/13	7473 Gadsden Highway	Trussville	Drainage Ditch	6,625	Manhole	Grease/ Roots/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										

Trussville Wastewater Treatment Plant

ATTACHMENT 3 – MWPP Sewage Sludge

SURVEY

MWPP SEWAGE SLUDGE SURVEY

Facility Background Information:

1. Facility Information

Permit Number: **AL0022934**

Name: **Trussville WWTP**

Street Address: **325 City Hall Drive**

County: **Jefferson**

2. Facility Contact

Name: **David Willoughby**

Title: **Plant Superintendent**

Telephone: **(205) 655-3617**

Permittee Name: **Jefferson County Commission- Trussville WWTP**

Mailing Address: **Suite A-300, 716 Richard Arrington JR. Blvd. N.**

Birmingham AL 35203

Facility Flow Information

1. Facility Wastewater Treatment Capacity

Avg. Daily Flow for 2013: **2.5** MGD

Facility Design Capacity: **4.0** MGD

2. Estimated Septage Quantity Handled (Residuals Removed from Septic Tank Systems)

Average Domestic Septage: **N/A** gallons per month

Average Commercial Septage: **N/A** gallons per month

3. Method of Septage Processing

☐ Mixed with Influent Wastewater for Treatment

☐ Mixed with Sewage Sludge

☒ **N/A**

4. Estimated Percentage Contributing Wastewater Flow

Residential: **90** %

Industrial: **2** %

Other: **8** % Describe: **Commercial**

5. List type of wastewater treatment process(es) utilized at this facility:

Bar Screening, Grit Removal, Extended Aeration with Activated Sludge, Clarification, UV Disinfection, Step Aeration

6. Estimated sewage sludge wasting rate at this facility: _____ lb/day dry weight

or **21,457** gallons per day

7. Estimated untreated sludge received from off site: **N/A** lb/day dry weight

or _____ gallons per day

8. Estimated percent solids of combined sewage sludge prior to treatment: **2** %

9. List the sewage sludge treatment processes used in preparing sludge for final use or disposal:

	Sludge Quantity (untreated pounds per day)
Aerobic Digestion	
Thicker	
Drying Beds (Air Drying)	

10. Estimate the total volume of sludge generated: **614** (dry U.S. tons per year)

Sludge Disposal Methods

1. Which of the following describes the current method of sewage sludge disposal for this facility:

	Current Practices Approved by ADEM Yes	Current Practices Approved by ADEM No	Quantity (dry U.S. tons/year)	Proposed Practices Approved by ADEM Yes	Proposed Practices Approved by ADEM No
a. [X] Land Application, Bulk Shipped			**614**		
[X] Agriculture	X	☐		☐	☐
☐ Forest	☐	☐		☐	☐
☐ Public Contact	☐	☐		☐	☐
☐ Lawn/Home Garden	☐	☐		☐	☐
b. ☐ Land Application, Bagged/Other Container					
☐ Agriculture	☐	☐		☐	☐
☐ Forest	☐	☐		☐	☐
☐ Public Contact	☐	☐		☐	☐
☐ Lawn/Home Garden	☐	☐		☐	☐
c. ☐ Incineration	☐	☐		☐	☐
d. ☐ Subtitle D Landfill (Disposal Only)	☐	☐		☐	☐
e. ☐ Lined Treatment Lagoon or Stabilization Pond	☐	☐		☐	☐
f. ☐ Unlined Lagoon or Stabilization Pond	☐	☐		☐	☐
g. ☐ Other (Please Describe)	☐	☐		☐	☐

2. If "f" was selected above and sludge is stored for 2 or more years, enter the distance between the surface disposal site and the property line: **N/A** feet

Pollutant Concentrations

1. Enter the total concentrations of the following analytes using existing data. Do not enter TCLP results.

Analyte	Concentration (mg/kg or ppm)	Sample Type	Sample Date	Detection Level of Analysis
Arsenic	**<PQL**	**Grab**	*	**11.0**
Cadmium	**<PQL**	**Grab**	*	**5.0**
Chromium	**62**	**Grab**	*	**6.0**
Copper	**2,075**	**Grab**	*	**5.0**
Lead	**24**	**Grab**	*	**12.0**
Mercury	**1.9**	**Grab**	*	**0.03**
Molybdenum	**9.2**	**Grab**	*	**6.0**
Nickel	**32**	**Grab**	*	**6.0**
Selenium	**<PQL**	**Grab**	*	**12.0**
Zinc	**1,317.5**	**Grab**	*	**8.0**
Ammonium-Nitrogen	,,,,,,,,,,,,,,,,	**N/A**	**N/A**	**N/A**
Nitrate-Nitrogen	,,,,,,,,,,,,,,,,	**N/A**	**N/A**	**N/A**
Total Kjeldahl Nitrogen	**38,500**	**Grab**	*	**0.09**

PQL=Practical Quantitative Limit *= Yearly Average

2. Enter the estimated or determined percent solids of the sewage sludge when sampled for the above analysis: **61** %

Treatment Provided for Sewage Sludge at the Facility

1. Which class of pathogen reduction does the sewage sludge meet at the facility? (As defined in 40 CFR Part 503)

☐ Class A
- ☐ Alternative A1 - Time and Temperature
- ☐ Alternative A2 - Alkaline Treatment
- ☐ Alternative A3 - Analysis and Operation
- ☐ Alternative A4 - Analysis Only
- ☐ Alternative A5 - Processes to Further Reduce Pathogens (PFRP)
  - ☐ Heat Drying ☐ Thermophilic Aerobic Digestion ☐ Heat Treatment
  - ☐ Pasteurization ☐ Gamma Ray Irradiation ☐ Beta Ray Irradiation
  - ☐ Composting ☐ ☐
- ☐ Alternative A6 - PFRP Equivalent _____

☒ Class B
- ☒ Alternative B1 - Fecal Coliform Count
- ☐ Alternative B2 - Process to Significantly Reduce Pathogens (PSRP)
  - ☒ Aerobic Digestion ☒ Air Drying ☐ Anaerobic Digestion
  - ☐ Composting ☐ Lime Stabilization
- ☐ Alternative B3 - PSRP Equivalent _____

☐ Neither or Unknown

☐ Option 1 - Minimum 38% Reduction in Volatile Solids
☐ Option 2 - Anaerobic Processes, with Bench-Scale Demonstration of Volatile Solids Reduction
☐ Option 3 - Aerobic Processes, with Bench-Scale Demonstration of Volatile Solids Reduction
☐ Option 4 - Specific Oxygen Uptake Rate (SOUR) for Aerobically Digested Sludge
☐ Option 5 - Aerobic Processes plus Elevated Temperature
☐ Option 6 - Raised pH to 12 and Retained at 11.5
☐ Option 7 - 75% Solids with no Unstabilized Solids
☐ Option 8 - 90% Solids with Unstabilized Solids
☐ Option 9 - Injection Below Land Surface
☒ Option 10 - Incorporation into Soil within 6 or 8 Hours
☐ Option 11 Covering Active Sewage Sludge Unit Daily
☐ None of the Above

Groundwater Monitoring

1. If disposal practice is surface disposal or land application, is groundwater monitoring required or performed at the site?

☐ Yes
☒ No

(If yes, please submit a copy of the groundwater monitoring reports along with this survey. Also please provide the approximate depth to groundwater and the groundwater monitoring procedures used to obtain the data.)

Land Application of Sewage Sludge

Answer the following questions if sewage sludge is applied to land.

1. If sewage sludge is land applied in bulk form, what type of crop or other vegetation is grown on this site?

Tifton Bermuda Grass, Ryegrass

2. If sewage sludge is land applied in bulk form, what is the nitrogen requirement for this crop or vegetation?

600lb/acre/year (Reclamation Site)

3. If sewage sludge is land applied in bulk form, briefly describe the nature of any complaints filed from neighbors?

No complaints have been received.

Note: Permittees that submitted the "Annual Report Review Form" for sludge to the EPA may submit a copy with the MWPP in lieu of this Attachment.

Trussville Wastewater Treatment Plant

ATTACHMENT 4 – Plant and Collection System

Personnel Inventory

PLANT AND COLLECTION SYSTEM PERSONNEL INVENTORY

FACILITY NAME: Trussville WWTP PLANT GRADE: III

PERMIT NUMBER: AL0022934

PLANT SUPERINTENDENT: David Willoughby TEL. # (205) 655-3617

SYSTEM MANAGER: David Denard TEL. # (205) 325-5806

PLANT OPERATORS:

	NAME	GRADE OR TRAINEE STATUS	OPERATOR NO.	EXP. DATE
1.	David Willoughby	IV	C002616	11/30/2015
2.	Brian Key	IV	C003285	12/31/2014
3.	Ladonna Coalburn	IV	C002043	12/31/2014
4.	Rosemary Sparks	IV	C002168	12/31/2014
5.	Ronald Johnson	II	C005501	2/28/2014
6.				
7.				
8.				
9.				
10.				

COLLECTION SYSTEM OPERATORS:

1.				
2.				
3.				
4.				

	MAN HRS./WK	NUMBER
MANAGEMENT/SUPERVISOR	120	3
OPERATOR(S):		
GRADE I-C		
GRADE I		
GRADE II	40	1
GRADE III		
GRADE IV	40	1
DESIGNATED TRAINEE(S)		
LABORATORY		
MAINTENANCE		
OTHER PLANT WORKERS	40	1

AVERAGE NUMBER OF EMPLOYEES PER SHIFT:

1ST	3	START TIME	700
2ND			
3RD			

OPERATOR SHIFTS NORMALLY WORKED EACH DAY:

	SUN	MON	TUES	WED	THURS	FRI	SAT
1ST	x	x	x	x	x	x	x
2ND							
3RD							

ADEM USE ONLY

	YES	NO
1. DOES PLANT OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		
2. DOES COLLECTION SYSTEM OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		

PLANT AND COLLECTION SYSTEM PERSONNEL INVENTORY

FACILITY NAME: Sewer Line Maintenance PLANT GRADE: IV

PERMIT NUMBER:

PLANT SUPERINTENDENT: TEL. # (205) 540-7585

SYSTEM MANAGER: David Denard TEL. # (205) 325-5979

PLANT OPERATORS:

	NAME	GRADE OR TRAINEE STATUS	OPERATOR NO.	EXP. DATE
1.	Brian Champion	I (c)	C002094	6/30/2015
2.	Don Goodwin	I (c)	C005423	6/30/2015
3.	Lavon Evans	I (c)	C004631	12/31/2014
4.	Brian Rohling	I (c)	C005418	6/30/2015
5.				
6.				
7.				
8.				
9.				
10.				

COLLECTION SYSTEM OPERATORS:

1.				
2.				
3.				
4.				

	MAN HRS./WK	NUMBER
MANAGEMENT/SUPERVISOR		
OPERATOR(S):		
GRADE I-C		
GRADE I		
GRADE II		
GRADE III		
GRADE IV		
DESIGNATED TRAINEE(S)		
LABORATORY		
MAINTENANCE		
OTHER PLANT WORKERS		

AVERAGE NUMBER OF EMPLOYEES PER SHIFT:

		START TIME
1ST		
2ND		
3RD		

OPERATOR SHIFTS NORMALLY WORKED EACH DAY:

	SUN	MON	TUES	WED	THURS	FRI	SAT
1ST							
2ND							
3RD							

ADEM USE ONLY

	YES	NO
1. DOES PLANT OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		
2. DOES COLLECTION SYSTEM OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		

Municipal Water Pollution Prevention (MWPP) Annual Report Calendar Year 2013

For the

Turkey Creek WWTP

as required by the
Alabama Department of Environmental Management NPDES Program

Prepared by
Jefferson County Commission
Environmental Services Department

May 31, 2014

JEFFERSON COUNTY COMMISSION

DAVID CARRINGTON - PRESIDENT
GEORGE F. BOWMAN
SANDRA LITTLE BROWN - PRESIDENT PRO TEMPORE
T. JOE KNIGHT
JAMES A."JIMMIE" STEPHENS

DAVID CARRINGTON – COMMISSIONER
ENVIRONMENTAL SERVICES

TONY PETELOS, COUNTY MANAGER

Office of

DAVID DENARD
Director of Environmental Services
Suite A-300
716 Richard Arrington, Jr. Blvd. N.
Birmingham, Alabama 35203
Telephone (205) 325-5496
Fax (205) 325-5981

May 31, 2014

Mr. Nic Caraway
Alabama Department of Environmental Management
Water Division – Municipal Branch
P.O. Box 301463
Montgomery, AL 36130-1463

RE: Municipal Water Pollution Prevention (MWPP)
Annual Report Calendar Year 2013

Mr. Caraway:

The Jefferson County Environmental Services Department submits the above referenced report for the Turkey Creek Wastewater Treatment Facility, NPDES Permit No. AL0022926. Included is information as required in ADEM Form 41701/06ml, bypass/overflow event reports, MWPP Sewage Sludge Survey, and the Plant & Collection System Personnel Inventory.

If you have any questions regarding this information, please contact me at 205.325.5979 or Celeste Brown at Jefferson County Barton Laboratory at 205.238.3859.

Sincerely,

David Denard, Director
Environmental Services Department

pc: Celeste Brown, JCESD Barton Laboratory
Daniel White, JCESD Deputy Director
Chad Quick, Turkey Creek WWTP

MUNICIPAL WATER POLLUTION PREVENTION (MWPP)

ANNUAL REPORT

SUBMITTED BY:

TREATMENT FACILITY: Turkey Creek WWTP NPDES #: 0022926

MUNICIPALITY: Jefferson County COUNTY: Jefferson

CONTACT PERSON: David Denard
Municipal Official

Director of Environmental Services
Title

Telephone #: (205)325-5979 Fax #: (205)325-5806

Email Address: denardd@jccal.org

CHIEF OPERATOR: Chad Quick
Name

Telephone #: (205)681-7971 Fax #: (205)680-8139

Email Address: quickc@jccal.org

Date: May 14, 2014

REVIEWED BY: Daniel White P.E. ESD Engineer
Consulting Engineer

Telephone #: (205) 214-8610 Fax #: (205)325-5688

Date: May 14, 2014

MWPP Annual Report
Information Source List

The following information will be needed to complete the compliance maintenance report that covers the calendar year of 2013 (due **May 31,** 2014).

Part 1 A. The average plant influent flow for each month (million gallons per day/MGD) during the year.
B. The average plant influent BOD (CBOD) for each month (mg/l and lb/day) in the year.
C. The plant's average design flow (MGD) and design BOD loading (lbs/day).

Part 2 A. The monthly average permit and DMR effluent concentration for BOD (CBOD), TSS, NH3-N, and/or TKN in mg/l for the year
B. The monthly average effluent limits and DMR loading for BOD, TSS, NH3-N, and/or TKN in lbs/day for the year

Part 3 The age of the treatment plant defined as the number of years since the last major reconstruction to increase the organic or hydraulic capacity of the plant. The last calendar year minus the year the new construction was brought on-line.

Part 4 Bypass and overflow information. This is the number of bypass or overflow events of untreated wastewater due to heavy rain or equipment failure whether intentional or inadvertent from all collection systems tributary to the treatment facility.

Part 5 A. Describe the characteristics and quantity of sludge generated.
B. If sludge is landspread, how many months of sludge storage does the plant have? This should include on-site and off-site storage from the treatment plant. The digestor capacity may be used in the calculation.

Part 6 A. Sludge Disposal Method
B. The number of approved land disposal sites for sludge available, and how many months or years these disposal sites will these be available for use.

Part 7 The number of sewer extensions installed in the community last year--the design population, design flow, and design BOD for each sewer extension.

Part 8 Operator Certification

Part 9 Financial Status

Part 10 Subjective Evaluation

Part 11 Summary Sheet

State of Alabama
MWPP Annual Report
Department of Environmental Management

Instructions to the Operator-in-Charge

1. Complete all sections of the MWPP Report to the best of your ability.

2. Parts 1 through 8 contain questions for which points will be generated. These points are intended to communicate to the Department and the governing body or owner the actions necessary to prevent effluent violations. Enter the point totals from Parts 1 through 8 on Part 11: Summary Sheet.

3. Add the point totals on Part 11: Summary Sheet.

4. Submit the MWPP Report to the governing body and the consulting engineer and owner for review and approval.

5. The governing body should pass a resolution which contains the following points:

   a. The resolution should acknowledge the governing body or owner has reviewed the MWPP Report.

   b. The resolution should indicate what actions will be taken to prevent effluent violations.

   c. The resolution should provide any other information the governing body or owner deems appropriate.

6. **The MWPP Report and the resolution must be submitted by May 31st to Municipal Section, Water Division, ADEM, P.O. Box 301463, Montgomery, AL 36130-1463.**

Facility Name: Turkey Creek WWTP

Part 1: Influent Loading/Flows

A. List the average monthly volumetric flows and BOD_5 ($CBOD_5$) loadings received at your facility during the last calendar year.

Month	Column 1 Average Monthly Flowrate (MGD)	Column 2 Average Monthly BOD_5 ($CBOD_5$) Concentration (mg/l)	Column 3 Average Loading BOD_5 ($CBOD_5$) (lbs/day**)
January	7.4	33	2111
February	7.4	33	1941
March	6.4	44	2184
April	6.9	44	2368
May	7.0	45	2238
June	6.6	51	2715
July	5.3	58	2756
August	6.3	39	1895
September	4.0	63	2105
October	3.4	78	2204
November	4.3	72	2404
December	6.1	42	2084
Annual Avg.	5.9	50	2250

**As reported on NPDES Discharge Monitoring Reports (DMRs) and as required by EPA's NPDES Self-Monitoring System, User Guide, March 1985.

B. List the average design flow and average design BOD_5 loading for the facility below. If you are not aware of these design quantities, contact your consulting engineer or the Alabama Department of Environmental Management.

	Average Design Flow	Average Design BOD_5 Loading (lbs/day)
Design Criteria	5.0	7506
90% of the Design Criteria	4.5	6755

C. How many times did the monthly flow (Column 1) to the WWTP exceed 90% of design flow? _____ (Check the appropriate point total)

☐ 0 - 4 = 0 points ☑ 5 or more = 5 points

D. How many times did the monthly flow (Column 1) to the WWTP exceed the design flow? ____ (Check the appropriate point total)

☐ 0 = 0 points ☐ 1 - 2 = 5 points ☐ 3 - 4 = 10 points ☑ 5 or more = 15 points

E. How many times did the monthly BOD_5 (or $CBOD_5$)* loading (lbs/day) (Column 3) to the WWTP exceed 90% of the design loading? ____ (Check the appropriate point total)

☑ 0 - 1 = 0 points ☐ 2 - 4 = 5 points ☐ 5 or more = 10 points

F. How many times did the monthly BOD_5 (or $CBOD_5$)* loading (lbs/day) (Column 3) to the WWTP exceed the design loading? _____ (Check the appropriate point total)

☑ 0 = 0 points ☐ 1 = 10 points ☐ 2 = 20 points ☐ 3 = 30 points ☐ 4 = 40 points ☐ 5 or more = 50 points

G. Enter each point value marked for Cthrough F and enter the sum in the appropriate blank below.

C points = 5

D points = 15

E points = 0

F points = 0

TOTAL POINTS VALUE OR PART 1 20
Enter this value on Part 11: Summary Sheet.

*To obtain equivalent BOD_5 loading for comparison with design loading for those permittees using influent $CBOD_5$, divide annual average $CBOD_5$, loading in lbs/day from Part 1, A by 0.7.

Facility Name: Turkey Creek WWTP

Part 2: Effluent Quality/Plant Performance

A. List the monthly average permit limits for the facility in the blanks below and the average monthly effluent DMR BOD_5, ($CBOD_5$) TSS, NH_3-N and/or TKN concentration produced by the facility during the last calendar year.

(1) NPDES Permit Concentration

	Months	BOD_5 ($CBOD_5$) (mg/l)	TSS (mg/l)	NH_3-N (mg/l)	TKN (mg/l)
Permit Limit	April- Oct	20.0	24.0	2.5	Report
	Nov- March	20.0	24.0	5.0	Report

(2) DMR Concentration

Qtr	Month	BOD_5 ($CBOD_5$) (mg/l)	TSS (mg/l)	NH_3-N (mg/l)	TKN (mg/l)
1	January	1.2	5.8	0.01	0.52
	February	1.5	6.9	0.0	0.42
	March	1.4	7.0	0.01	0.43
2	April	0.89	4.5	0.0	0.17
	May	1.1	6.0	0.0	0.65
	June	0.83	5.7	0.01	0.43
3	July	1.3	4.6	0.0	0.22
	August	0.77	3.3	0.0	0.0
	September	1.4	4.1	0.0	0.47
4	October	2.0	4.6	0.0	0.35
	November	1.4	7.3	0.01	0.30
	December	0.93	5.4	0.02	0.26
	Annual Avg.	1.2	5.4	0.01	0.35

B. List the monthly average permit limit and DMR loadings below.

(1) NPDES Permit Loading

	Months	BOD_5 ($CBOD_5$) (lbs/day)	TSS (lbs/day)	NH_3-N (lbs/day)	TKN (lbs/day)
Permit Limit	April-Oct	834	1000	104	Report
	Nov-March	834	1000	208	Report

(2) DMR Loading

Qtr	Month	BOD_5 ($CBOD_5$) (lbs/day)	TSS (lbs/day)	NH_3-N (lbs/day)	TKN (lbs/day)
1	January	79	468	0.68	60
	February	93	449	0.0	22
	March	70	387	0.64	23
2	April	48	245	0.0	9.9
	May	54	314	0.0	30
	June	46	325	0.66	31
3	July	59	217	0.0	7.6
	August	43	176	0.0	0.0
	September	49	139	0.0	14
4	October	57	129	0.0	10
	November	49	262	0.45	9.3
	December	50	293	0.98	11
	Annual Avg.	58	284	0.28	19

C. During the past year did the BOD_5 concentration (mg/l) and/or loading (lbs/day) exceed the product of 1.4 times the monthly average permit limit during two months of any consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

D. During the past year did the BOD_5 concentration (mg/l) and/or loading (lbs/day), exceed the monthly average permit limit during four months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

E. During the past year did the effluent TSS concentration (mg/l) or loading (lbs/day) exceed the product of 1.4 times the monthly average permit limit during two months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

F. During the past year did the TSS concentration (mg/l) and/or loading (lbs/day) exceed the monthly average permit limit during four months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

G. During the past year did the NH_3-N or TKN concentration (mg/l) and/or loading (lbs/day) exceed the product of 1.4 times the monthly average permit limit during two months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

H. During the past year did either the NH_3-N or TKN concentration (mg/l) and/or loading (lbs/day), exceed the monthly average permit limit during four months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

I. Enter each point value checked for C through H in the blanks below.

C Points = 0
D Points = 0
E Points = 0
F Points = 0
G Points = 0
H Points = 0

HIGHEST INDIVIDUAL POINT VALUE FOR PART 2 (C-H) 0 (HIGHEST POINT = 121)
Enter this value on Part 11: Summary Sheet.

Facility Name: Turkey Creek WWTP

Part 3: Age of the Wastewater Treatment Facility

A. What year was the wastewater treatment plant constructed or last reconstructed? 2004

Subtract the above answer from the report year to determine age:

Age = (Last Calendar year) - (Answer to A)

Age 9 = (2013) - (2004)

Enter Age in Part C below.

B. Check the type of treatment facility employed.

		Factor
2.0	Mechanical Treatment Plant	2.0
_____	Aerated Lagoon	1.5
_____	Stabilization Pond	1.0
_____	Other (Specify:_____)	1.0

C. Multiply the factor listed next to the type of the facility your community employs by the age of your facility to determine the total point value for Part 3:

2.0 (Factor) x 9 (Age) = 18 TOTAL POINT VALUE FOR PART 3

Enter the above value on Part 11: Summary Sheet. If the total point value exceeds 40, enter 40 on Part 11: Summary Sheet.

Facility Name: Turkey Creek WWTP

Part 4: Bypassing and Overflows

A. How many bypass or overflow events of untreated wastewater occurred in the last year at the WWTP due to heavy rain? 0

B. How many bypass or overflow events of untreated wastewater occurred in the last year prior to the headworks of the WWTP due to heavy rain? 0

C. How many of the bypass or overflow events listed in Parts A and B have been corrected such that future bypass or overflow events at the same location due to heavy rain are not anticipated? 0

D. Add together Answers A and B and subtract Answer C from that total.
A + B – C = _____(Check the appropriate point total.)

☑ 0 = 0 points ☐ 1 = 5 points ☐ 2 = 10 points ☐ 3 = 15 points ☐ 4 = 20 points ☐ 5 = 25 points ☐ 6 = 30 points
☐ 7 = 35 points ☐ 8 = 40 points ☐ 9 = 45 points ☐ 10 = 50 points ☐ 11 or more = 100 points

E. How many bypass or overflow events of untreated wastewater occurred in the last year at the WWTP due to equipment failure? (This includes clogged/broken lines or manholes.) 1.0

F. How many bypass or overflow events of untreated wastewater occurred in the last year due to equipment failure prior to the headworks of the WWTP? (This includes clogged/broken lines or manholes.) 1.0

G. How many of the bypass or overflow events listed in Parts E and F have been corrected such that future bypass or overflow events at the same location due to the same equipment failure are not anticipated? 2.0

H. Add together Answers E and F and subtract Answer G from that total.
E + F - G = _____(Check the appropriate point total.)

☑ 0 = 0 points ☐ 1 = 5 points ☐ 2 = 10 points ☐ 3 = 15 points ☐ 4 = 20 points ☐ 5 = 25 points ☐ 6 = 30 points
☐ 7 = 35 points ☐ 8 = 40 points ☐ 9 = 45 points ☐ 10 = 50 points ☐ 11 or more = 100 points

I. Add point values circled in D and H and enter the total in the blank below.

TOTAL POINT VALUE FOR PART 4 0
Enter this value on Part 11: Summary Sheet.

All bypass or overflow events that have occurred in the last year (for any reason) must be individually reported with this MWPP report.

Facility Name: Turkey Creek WWTP

Part 5: Sludge Quantity and Storage

A. Please provide information concerning sludge quantity, characteristics, and storage practices based on available data as requested on the *MWPP Sewage Sludge Survey,* ADEM Form 419.

B. How many months of sludge storage capacity does the wastewater treatment facility have available, either on-site or off-site? (i.e., How many months can the facility operate without land spreading or disposing of sludge?) 4

(Check the appropriate point total.)

Greater than or equal to 4 months	= 0 points	☑
Less than 4 months, but greater than or equal to 3 months	= 10 points	☐
Less than 3 months, but greater than or equal to 2 months	= 20 points	☐
Less than 2 months, but greater than or equal to 1 month	= 30 points	☐
Less than one month	= 50 points	☐

TOTAL POINT VALUE FOR PART 5 0
Enter this value on Part 11: Summary Sheet.

Part 6: Sludge Disposal Practices and Sites

A. Please provide the sludge disposal practices and site information based on available data as requested on the *MWPP Sewage Sludge Survey,* ADEM Form 419.

B. How many months or years does the facility have access to and approval for sufficient land disposal sites to provide proper land disposal? (Check the appropriate point total.)

36 or more months	= 0 points	☐
24 - 35 months	= 10 points	☐
12 - 23 months	= 20 points	☑
6 - 11 months	= 30 points	☐
Less than 6 months	= 50 points	☐

TOTAL POINT VALUE FOR PART 6 20
Enter this value on Part 11: Summary Sheet.

Facility Name: Turkey Creek WWTP

Part 7: New Development

Are there any major new developments (industrial, commercial, or residential) in the last calendar year or anticipated in the next 2-3 years such that either flow or BOD_5 loadings to the sewage system could significantly increase? Estimate additional loadings below.

Design Population: Equivalent (PE)	Design Flow: MGD	Design BOD_5: lbs/day

List industrial and/or residential developments.

No major developments are planned.

Will the additional loading overload the plant? (Check the appropriate point total.)

No = 0 points ☑ Yes = 121 points ☐

Enter the point total in the blank below.

TOTAL POINT VALUE FOR PART 7 0 (highest point total = 121)
Enter this value on Part 11: Summary Sheet.

Part 8: Operator Certification

Complete the *Plant and Collection System Personnel Inventory,* ADEM Form 441.

Do both the plant operator and collection system staffing comply with ADEM Administrative Code; Division 10, Operator Certification Program? (Check the appropriate point total.)

Yes = 0 points ☑ No = 121 points ☐

TOTAL POINT VALUE FOR PART 8 0 (highest point total = 121)
Enter this value on Part 11: Summary Sheet.

Facility Name: Turkey Creek WWTP

Part 9: Financial Status

A. Are User-Charge Revenues sufficient to cover operation and maintenance expenses? If no, how are O&M costs being financed? ***Include user charge rates***.

Revenues are sufficient. The below values are based on a 5/8" meter and 6000 gallons of water use.

Jefferson County has a three tier block rate structure for residential users for 0-3, 4-6, and 7+ccf water use.

Residential Minimum 15.00 Plus rate 6.02, 9.36, 10.69 /1,000 gal.

Industrial Minimum 15.00 Plus rate 10.51 /1,000 gal.

Monthly residential rate based on 6,000 gallons usage $ 56.04(includes 15% credit for residential)

Please complete the above information based on your user charge rates for the report year. You may attach a sample water and sewer bill for clarity.

B. What financial resources are available to pay for the wastewater improvements and/or reconstruction needs?

In 2013, Jefferson County issued Series 2013 Sewer Warrants that fund capital improvements

through 2023 at an annual average rate of $71.9 million over the 10-year period.

Part 10: Subjective Evaluation

A. Describe briefly the physical and structural conditions of the wastewater treatment facility.

All structures are in good condition.

B. Describe the general condition of the sewer system (sewer lines, manholes, lift stations).

The Turkey system includes roughly 460,000' of pipe and 8 pumping stations. The system's rate of

SSO's/100 miles of sewer is below the department's goal. There are no known capacity deficiencies,

but I/I rates were high. The general condition of the system is fair.

C. What sewage system improvements does the community have planned for construction in the next 5 years?

Improvements to the Womack Road sanitary sewer area that experienced a break in the April 2014 flooding.

D. What is the theoretical design life of the plant, and what is the estimated remaining useful life of the wastewater treatment facility?

Calculated remaining useful life of the structures is 41 years (50 years - 9 years age of facility).

Calculated remaining useful life of the equipment is 16 years (25 years - 9 years age of equipment).

Based on EPA's 2002 Clean Water and Drinking Water Infrastructure Gap Analysis Report.

E. What problems, if any, over the last year have threatened treatment or conveyance within the system?

On May 18, 2013, Turkey Creek flooded after receiving 6+" of rain in a 12-hour period. Debris overwhelmed and blocked the influent screens. Between 1.6 and 2.2 million gallons of sewage flowed to Turkey Creek before the screens could be cleared and restarted.

F. Is the community presently involved in formal planning for treatment facility upgrading?

No

G. How many days in the last year were there residential backups at any point in the collection system for any reason other than clogging of the lateral connection? 4

H. Does the plant have a written plan for preventive maintenance on major equipment items? If yes, describe.

Yes, O&M manuals for all equipment are on site. We record lubrication and repairs on all equipment in an asset management program (Infor) for future reference and to keep a log on all repairs. Preventive maintenance schedules are loaded in the program, and work orders are automatically generated.

I. Does this preventive maintenance program depict frequency of intervals, types of lubrication, and other preventive maintenance tasks necessary for each piece of equipment? (Check the appropriate response.) Yes ☑ No ☐

J. Are these preventive maintenance tasks, as well as equipment problems, being recorded and filed so future maintenance problems can be assessed properly? (Check the appropriate response.) Yes ☑ No ☐

K. Describe any major repairs or mechanical equipment replacement made in the last year and include the approximate cost for those repairs. Do not include major treatment plant construction or upgrading programs.

L. List any additional comments. (Attach additional sheets if necessary.)

Facility Name: Turkey Creek WWTP

Part 11: Summary Sheet

1. Enter in the values from Parts 1 through 8 in the left column below. Add the numbers in the left column to determine the MWPP Report point total the wastewater system generated for the previous calendar year.

Actual Values	Maximum Possible
Part 1 20 points	80 points
Part 2 0 points	121 points
Part 3 18 points	40 points
Part 4 ____ points	200 points
Part 5 0 points	50 points
Part 6 20 points	50 points
Part 7 0 points	121 points
Part 8 0 points	121 points
Total 58 points	783 points

2. Check the facility type that best describes the plant's treatment and disposal of wastewater.

- [✓] Mechanical plant with surface water discharge
- [ ] Aerated Lagoon or stabilization pond with surface water discharge
- [ ] Mechanical plant using land disposal of liquid wastes
- [ ] Aerated Lagoon or stabilization pond using land disposal of liquid wastes

3. Check the range that describes the action needed to address problems identified in the report.

- [✓] 0 - 70 pts. Actions as Appropriate*
- [ ] 71 - 120 pts. Departmental Recommendation Range*
- [ ] 121 – 783 Municipality Action Range*

***Other actions may be required by NPDES outside the scope of this report.**

4. Complete the *Municipal Water Pollution Prevention Resolution Form*, ADEM Form 418.

5. In Question 1, do any of the actual point values in the left column equal the maximum possible points in the right column? (Check the appropriate response) Yes ☐ No ☑

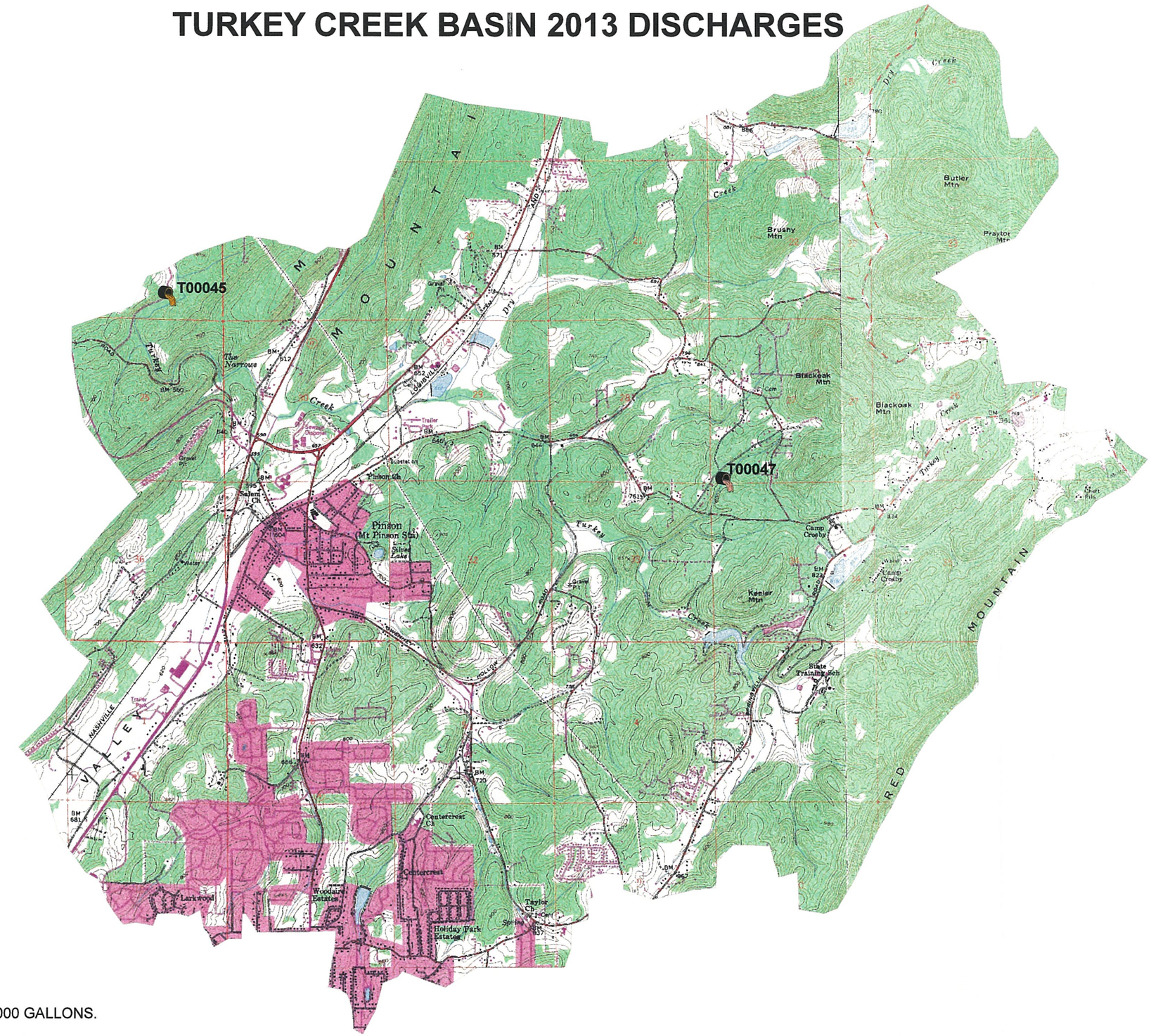
If yes, provide a written explanation for this situation in the space below.

Turkey Creek Wastewater Treatment Plant

ATTACHMENT 2 – Raw Sewage Bypass and

SUMMARY

TURKEY CREEK BASIN 2013 DISCHARGES



NOTE: OVERFLOWS SHOWN ARE OVER 10,000 GALLONS.

JEFFERSON COUNTY
ENVIRONMENTAL SERVICES
PLOTTED: 2-11-14

Summary of Unpermitted Discharges - Turkey Creek

January 01, 2013 through December 31, 2013

NOTE: Quantities shown in the column "Est. Volume" are ESTIMATED ONLY. These estimates are the County's best determination of the discharge volume, based upon site-determinable information and accepted estimating methods. However, such estimates are subject to a high number of variables which are completely beyond the County's control and which can have a significant effect upon the calculated amount. Therefore, these estimates are to be used for relative comparison only, not as actual discharge volumes.

Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*
T00045	5/18/13	7137 Disposal Plant Rd	Turkey Creek	Turkey Creek	2,000,000	Treatment Plant	Treatment Plant Equipment Failure	Heavy Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes: Influent screens blinded by debris from influent flow.										
T00047	8/19/13	6517 Womack Rd	Turkey Creek	Drainage Ditch/ Feeder to Turkey Creek	18,994	Pipe	Manhole Washed Out	No Rain	Line Repaired	Brian Champion	Sewer Maintenance Supervisor
	Notes:										

Turkey Creek Wastewater Treatment Plant

ATTACHMENT 3 – MWPP Sewage Sludge

SURVEY

MWPP SEWAGE SLUDGE SURVEY

Facility Background Information:

1. Facility Information

Permit Number: **AL0022926**

Name: **Turkey Creek WWTP**

Street Address: **7137 Disposal Plant Road**

County: **Jefferson**

2. Facility Contact

Name: **Chad Quick**

Title: **Plant Supervisor**

Telephone: **(205) 681-7971**

Permitted Name: **Jefferson County Commission- Turkey Creek WWTP**

Mailing Address: **Suite A-300, 716 Richard Arrington JR. Blvd. N.**

Birmingham AL 35203

Facility Flow Information

1. Facility Wastewater Treatment Capacity

Avg. Daily Flow for 2013: **5.9** MGD

Facility Design Capacity: **5.0** MGD

2. Estimated Septage Quantity Handled (Residuals Removed from Septic Tank Systems)

Average Domestic Septage: **N/A** gallons per month

Average Commercial Septage: **N/A** gallons per month

3. Method of Septage Processing

☐ Mixed with Influent Wastewater for Treatment

☐ Mixed with Sewage Sludge

☒ **N/A**

4. Estimated Percentage Contributing Wastewater Flow

Residential: **95** %

Industrial: **0** %

Other: **5** % Describe: **Commercial**

5. List type of wastewater treatment process(es) utilized at this facility:

Bar Screening, Grit Removal, Extended Aeration with Activated Sludge, Clarification, Traveling Bridge Sand Filtration, UV Disinfection, Step Aeration

6. Estimated sewage sludge wasting rate at this facility: _____ lb/day dry weight

or **7297** gallons per day

7. Estimated untreated sludge received from off site: **N/A** lb/day dry weight

or _____ gallons per day

8. Estimated percent solids of combined sewage sludge prior to treatment: **2.2** %

9. List the sewage sludge treatment processes used in preparing sludge for final use or disposal:

	Sludge Quantity (untreated pounds per day)
Aerobic Digestion, Drying Beds (Air Drying)	

10. Estimate the total volume of sludge generated: **251** (dry U.S. tons per year)

Sludge Disposal Methods

1. Which of the following describes the current method of sewage sludge disposal for this facility:

	Current Practices			Proposed Practices	
	Approved by ADEM		Quantity	Approved by ADEM	
	Yes	No	(dry U.S. tons/year)	Yes	No
a. [X] Land Application, Bulk Shipped			**251**		
[X] Agriculture	X	☐		☐	☐
☐ Forest	☐	☐		☐	☐
☐ Public Contact	☐	☐		☐	☐
☐ Lawn/Home Garden	☐	☐		☐	☐
b. ☐ Land Application, Bagged/Other Container					
☐ Agriculture	☐	☐		☐	☐
☐ Forest	☐	☐		☐	☐
☐ Public Contact	☐	☐		☐	☐
☐ Lawn/Home Garden	☐	☐		☐	☐
c. ☐ Incineration	☐	☐		☐	☐
d. ☐ Subtitle D Landfill (Disposal Only)	☐	☐		☐	☐
e. ☐ Lined Treatment Lagoon or Stabilization Pond	☐	☐		☐	☐
f. ☐ Unlined Lagoon or Stabilization Pond	☐	☐		☐	☐
g. ☐ Other (Please Describe)	☐	☐		☐	☐

2. If "f" was selected above and sludge is stored for 2 or more years, enter the distance between the surface disposal site and the property line: **N/A** feet

Pollutant Concentrations

1. Enter the total concentrations of the following analytes using existing data. Do not enter TCLP results.

Analyte	Concentration (mg/kg or ppm)	Sample Type	Sample Date	Detection Level of Analysis
Arsenic	**<PQL**	**Grab**	*	**11.0**
Cadmium	**<PQL**	**Grab**	*	**5.0**
Chromium	**47**	**Grab**	*	**6.0**
Copper	**957**	**Grab**	*	**5.0**
Lead	**16**	**Grab**	*	**12.0**
Mercury	**2**	**Grab**	*	**0.0**
Molybdenum	**<PQL**	**Grab**	*	**6.0**
Nickel	**25**	**Grab**	*	**6.0**
Selenium	**<PQL**	**Grab**	*	**12.0**
Zinc	**937**	**Grab**	*	**8.0**
Ammonium-Nitrogen	,,,,,,,,,,,,,,,,	**N/A**	**N/A**	**N/A**
Nitrate-Nitrogen	,,,,,,,,,,,,,,,,	**N/A**	**N/A**	**N/A**
Total Kjeldahl Nitrogen	**40,667**	**Grab**	*	**0.09**

PQL=Practical Quantitative Limit *= Yearly Average

2. Enter the estimated or determined percent solids of the sewage sludge when sampled for the above analysis: **82** %

Treatment Provided for Sewage Sludge at the Facility

1. Which class of pathogen reduction does the sewage sludge meet at the facility? (As defined in 40 CFR Part 503)

☐ Class A
- ☐ Alternative A1 - Time and Temperature
- ☐ Alternative A2 - Alkaline Treatment
- ☐ Alternative A3 - Analysis and Operation
- ☐ Alternative A4 - Analysis Only
- ☐ Alternative A5 - Processes to Further Reduce Pathogens (PFRP)
  - ☐ Heat Drying ☐ Thermophilic Aerobic Digestion ☐ Heat Treatment
  - ☐ Pasteurization ☐ Gamma Ray Irradiation ☐ Beta Ray Irradiation
  - ☐ Composting ☐ ☐
- ☐ Alternative A6 - PFRP Equivalent _____

☒ Class B
- ☒ Alternative B1 - Fecal Coliform Count
- ☐ Alternative B2 - Process to Significantly Reduce Pathogens (PSRP)
  - ☐ Aerobic Digestion ☐ Air Drying ☐ Anaerobic Digestion
  - ☐ Composting ☐ Lime Stabilization
- ☐ Alternative B3 - PSRP Equivalent _____

☐ Neither or Unknown

Vector Attraction Control

- ☐ Option 1 - Minimum 38% Reduction in Volatile Solids
- ☐ Option 2 - Anaerobic Processes, with Bench-Scale Demonstration of Volatile Solids Reduction
- ☐ Option 3 - Aerobic Processes, with Bench-Scale Demonstration of Volatile Solids Reduction
- ☐ Option 4 - Specific Oxygen Uptake Rate (SOUR) for Aerobically Digested Sludge
- ☐ Option 5 - Aerobic Processes plus Elevated Temperature
- ☐ Option 6 - Raised pH to 12 and Retained at 11.5
- ☐ Option 7 - 75% Solids with no Unstabilized Solids
- ☐ Option 8 - 90% Solids with Unstabilized Solids
- ☐ Option 9 - Injection Below Land Surface
- ☒ Option 10 - Incorporation into Soil within 6 or 8 Hours
- ☐ Option 11 Covering Active Sewage Sludge Unit Daily
- ☐ None of the Above

Groundwater Monitoring

1. If disposal practice is surface disposal or land application, is groundwater monitoring required or performed at the site?

- ☐ Yes
- ☒ No

(If yes, please submit a copy of the groundwater monitoring reports along with this survey. Also please provide the approximate depth to groundwater and the groundwater monitoring procedures used to obtain the data.)

Land Application of Sewage Sludge

Answer the following questions if sewage sludge is applied to land.

1. If sewage sludge is land applied in bulk form, what type of crop or other vegetation is grown on this site?

Tifton Bermuda Grass, Ryegrass

2. If sewage sludge is land applied in bulk form, what is the nitrogen requirement for this crop or vegetation?

600lb/acre/year (Reclamation Site)

3. If sewage sludge is land applied in bulk form, briefly describe the nature of any complaints filed from neighbors?

No complaints have been received.

Note: Permittees that submitted the "Annual Report Review Form" for sludge to the EPA may submit a copy with the MWPP in lieu of this Attachment.

Turkey Creek Wastewater Treatment Plant

ATTACHMENT 4 – Plant and Collection System

Personnel Inventory

PLANT AND COLLECTION SYSTEM PERSONNEL INVENTORY

FACILITY NAME: **Turkey Creek WWTP** PLANT GRADE: **III**

PERMIT NUMBER: **AL 0022926**

PLANT SUPERINTENDENT: **Chad Quick** TEL. # **(205)681-7971**

SYSTEM MANAGER: **David Denard** TEL. # **(205)326-8232**

PLANT OPERATORS:

	NAME	GRADE OR TRAINEE STATUS	OPERATOR NO.	EXP. DATE
1.	**Eric Pond**	**IV**	**C003706**	**2/28/2016**
2.	**Mark Lee**	**IV**	**C000389**	**8/31/2016**
3.	**Chad Quick**	**IV**	**C003616**	**2/28/2015**
4.	**Pat McCarty**	**IV**	**C003224**	**8/31/2014**
5.	**Adam Moore**	**IV**	**C006513**	**11/1/2014**
6.				
7.				
8.				
9.				
10.				

COLLECTION SYSTEM OPERATORS:

1.				
2.				
3.				
4.				

	MAN HRS./WK	NUMBER
MANAGEMENT/SUPERVISOR	**120**	**3**
OPERATOR(S):		
GRADE I-C		
GRADE I		
GRADE II		
GRADE III		
GRADE IV	**80**	**2**
DESIGNATED TRAINEE(S)		
LABORATORY		
MAINTENANCE		
OTHER PLANT WORKERS		

AVERAGE NUMBER OF EMPLOYEES PER SHIFT:

		START TIME
1ST	**1**	**7:00 AM**
2ND		
3RD		

OPERATOR SHIFTS NORMALLY WORKED EACH DAY:

	SUN	MON	TUES	WED	THURS	FRI	SAT
1ST	**X**	**X**	**X**	**X**	**X**	**X**	**X**
2ND							
3RD							

ADEM USE ONLY

	YES	NO
1. DOES PLANT OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?	**X**	
2. DOES COLLECTION SYSTEM OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		

PLANT AND COLLECTION SYSTEM PERSONNEL INVENTORY

FACILITY NAME: Sewer Line Maintenance PLANT GRADE: IV

PERMIT NUMBER:

PLANT SUPERINTENDENT: TEL. # (205) 540-7585

SYSTEM MANAGER: David Denard TEL. # (205) 325-5979

PLANT OPERATORS:

	NAME	GRADE OR TRAINEE STATUS	OPERATOR NO.	EXP. DATE
1.	Brian Champion	I (c)	C002094	6/30/2015
2.	Don Goodwin	I (c)	C005423	6/30/2015
3.	Lavon Evans	I (c)	C004631	12/31/2014
4.	Brian Rohling	I (c)	C005418	6/30/2015
5.				
6.				
7.				
8.				
9.				
10.				

COLLECTION SYSTEM OPERATORS:

1.				
2.				
3.				
4.				

	MAN HRS./WK	NUMBER
MANAGEMENT/SUPERVISOR		
OPERATOR(S):		
GRADE I-C		
GRADE I		
GRADE II		
GRADE III		
GRADE IV		
DESIGNATED TRAINEE(S)		
LABORATORY		
MAINTENANCE		
OTHER PLANT WORKERS		

AVERAGE NUMBER OF EMPLOYEES PER SHIFT:

		START TIME
1ST		
2ND		
3RD		

OPERATOR SHIFTS NORMALLY WORKED EACH DAY:

	SUN	MON	TUES	WED	THURS	FRI	SAT
1ST							
2ND							
3RD							

ADEM USE ONLY

	YES	NO
1. DOES PLANT OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		
2. DOES COLLECTION SYSTEM OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		

Municipal Water Pollution Prevention (MWPP) Annual Report Calendar Year 2013

For the

Valley Creek WWTP

as required by the
Alabama Department of Environmental Management NPDES Program

Prepared by
Jefferson County Commission
Environmental Services Department

May 31, 2014

JEFFERSON COUNTY COMMISSION

DAVID CARRINGTON - PRESIDENT
GEORGE F. BOWMAN
SANDRA LITTLE BROWN - PRESIDENT PRO TEMPORE
T. JOE KNIGHT
JAMES A."JIMMIE" STEPHENS

DAVID CARRINGTON – COMMISSIONER
ENVIRONMENTAL SERVICES

TONY PETELOS, COUNTY MANAGER

Office of

DAVID DENARD
Director of Environmental Services
Suite A-300
716 Richard Arrington, Jr. Blvd. N.
Birmingham, Alabama 35203
Telephone (205) 325-5496
Fax (205) 325-5981

May 31, 2014

Mr. Nic Caraway
Alabama Department of Environmental Management
Water Division – Municipal Branch
P.O. Box 301463
Montgomery, AL 36130-1463

RE: Municipal Water Pollution Prevention (MWPP)
Annual Report Calendar Year 2013

Mr. Caraway:

The Jefferson County Environmental Services Department submits the above referenced report for the Valley Creek Wastewater Treatment Facility, NPDES Permit No. AL0023655. Included is information as required in ADEM Form 41701/06ml, bypass/overflow event reports, MWPP Sewage Sludge Survey, and the Plant & Collection System Personnel Inventory.

If you have any questions regarding this information, please contact me at 205.325.5979 or Celeste Brown at Jefferson County Barton Laboratory at 205.238.3859.

Sincerely,

David Denard, Director
Environmental Services Department

pc: Celeste Brown, JCESD Barton Laboratory
Daniel White, JCESD Deputy Director
Robby Bennett, Valley Creek WWTP

MUNICIPAL WATER POLLUTION PREVENTION (MWPP)

ANNUAL REPORT

SUBMITTED BY:

TREATMENT FACILITY: Valley Creek WWTP NPDES #: AL0023655

MUNICIPALITY: Jefferson County COUNTY: Jefferson

CONTACT PERSON: David Denard
Municipal Official

Director of Environmental Services
Title

Telephone #: (205) 327-8232 Fax #: (205) 325-5981

Email Address: denardd@jccal.org

CHIEF OPERATOR: Robby Bennett
Name

Telephone #: (205) 428-2614 Fax #: (205) 426-3274

Email Address: bennettr@jccal.org

Date: May 14, 2014

REVIEWED BY: Daniel White P.E., ESD Engineer
Consulting Engineer

Telephone #: 205 214 8610 Fax #: 205 325-5688

Date: May 14, 2014

MWPP Annual Report
Information Source List

The following information will be needed to complete the compliance maintenance report that covers the calendar year of 2013 (due **May 31,** 2014).

Part 1 A. The average plant influent flow for each month (million gallons per day/MGD) during the year.
B. The average plant influent BOD (CBOD) for each month (mg/l and lb/day) in the year.
C. The plant's average design flow (MGD) and design BOD loading (lbs/day).

Part 2 A. The monthly average permit and DMR effluent concentration for BOD (CBOD), TSS, NH3-N, and/or TKN in mg/l for the year
B. The monthly average effluent limits and DMR loading for BOD, TSS, NH3-N, and/or TKN in lbs/day for the year

Part 3 The age of the treatment plant defined as the number of years since the last major reconstruction to increase the organic or hydraulic capacity of the plant. The last calendar year minus the year the new construction was brought on-line.

Part 4 Bypass and overflow information. This is the number of bypass or overflow events of untreated wastewater due to heavy rain or equipment failure whether intentional or inadvertent from all collection systems tributary to the treatment facility.

Part 5 A. Describe the characteristics and quantity of sludge generated.
B. If sludge is landspread, how many months of sludge storage does the plant have? This should include on-site and off-site storage from the treatment plant. The digestor capacity may be used in the calculation.

Part 6 A. Sludge Disposal Method
B. The number of approved land disposal sites for sludge available, and how many months or years these disposal sites will these be available for use.

Part 7 The number of sewer extensions installed in the community last year--the design population, design flow, and design BOD for each sewer extension.

Part 8 Operator Certification

Part 9 Financial Status

Part 10 Subjective Evaluation

Part 11 Summary Sheet

State of Alabama
MWPP Annual Report
Department of Environmental Management

Instructions to the Operator-in-Charge

1. Complete all sections of the MWPP Report to the best of your ability.

2. Parts 1 through 8 contain questions for which points will be generated. These points are intended to communicate to the Department and the governing body or owner the actions necessary to prevent effluent violations. Enter the point totals from Parts 1 through 8 on Part 11: Summary Sheet.

3. Add the point totals on Part 11: Summary Sheet.

4. Submit the MWPP Report to the governing body and the consulting engineer and owner for review and approval.

5. The governing body should pass a resolution which contains the following points:

   a. The resolution should acknowledge the governing body or owner has reviewed the MWPP Report.

   b. The resolution should indicate what actions will be taken to prevent effluent violations.

   c. The resolution should provide any other information the governing body or owner deems appropriate.

6. **The MWPP Report and the resolution must be submitted by May 31st to Municipal Section, Water Division, ADEM, P.O. Box 301463, Montgomery, AL 36130-1463.**

Facility Name: Valley Creek WWTP

Part 1: Influent Loading/Flows

A. List the average monthly volumetric flows and BOD_5 ($CBOD_5$) loadings received at your facility during the last calendar year.

Month	Column 1 Average Monthly Flowrate (MGD)	Column 2 Average Monthly BOD_5 ($CBOD_5$) Concentration (mg/l)	Column 3 Average Loading BOD_5 ($CBOD_5$) (lbs/day**)
January	87	53	34602
February	89	54	37054
March	62	87	43682
April	60	123	57792
May	52	122	44532
June	35	135	38659
July	49	118	46310
August	47	108	42357
September	22	159	29330
October	22	163	30150
November	27	160	36679
December	63	107	54757
Annual Avg.	51	116	41325

**As reported on NPDES Discharge Monitoring Reports (DMRs) and as required by EPA's NPDES Self-Monitoring System, User Guide, March 1985.

B. List the average design flow and average design BOD_5 loading for the facility below. If you are not aware of these design quantities, contact your consulting engineer or the Alabama Department of Environmental Management.

	Average Design Flow	Average Design BOD_5 Loading (lbs/day)
Design Criteria	85.0	141,780
90% of the Design Criteria	76.5	127,602

C. How many times did the monthly flow (Column 1) to the WWTP exceed 90% of design flow? _____ (Check the appropriate point total)

☑ 0 - 4 = 0 points ☐ 5 or more = 5 points

D. How many times did the monthly flow (Column 1) to the WWTP exceed the design flow? ____ (Check the appropriate point total)

☐ 0 = 0 points ☑ 1 - 2 = 5 points ☐ 3 - 4 = 10 points ☐ 5 or more = 15 points

E. How many times did the monthly BOD_5 (or $CBOD_5$)* loading (lbs/day) (Column 3) to the WWTP exceed 90% of the design loading? ____ (Check the appropriate point total)

☑ 0 - 1 = 0 points ☐ 2 - 4 = 5 points ☐ 5 or more = 10 points

F. How many times did the monthly BOD_5 (or $CBOD_5$)* loading (lbs/day) (Column 3) to the WWTP exceed the design loading? _____ (Check the appropriate point total)

☑ 0 = 0 points ☐ 1 = 10 points ☐ 2 = 20 points ☐ 3 = 30 points ☐ 4 = 40 points ☐ 5 or more = 50 points

G. Enter each point value marked for Cthrough F and enter the sum in the appropriate blank below.

C points = 0_____

D points = 5_____

E points = 0_____

F points = 0_____

TOTAL POINTS VALUE OR PART 1 5_____
Enter this value on Part 11: Summary Sheet.

*To obtain equivalent BOD_5 loading for comparison with design loading for those permittees using influent $CBOD_5$, divide annual average $CBOD_5$, loading in lbs/day from Part 1, A by 0.7.

Facility Name: Valley Creek WWTP

Part 2: Effluent Quality/Plant Performance

A. List the monthly average permit limits for the facility in the blanks below and the average monthly effluent DMR BOD_5, ($CBOD_5$) TSS, NH_3-N and/or TKN concentration produced by the facility during the last calendar year.

(1) NPDES Permit Concentration

	Months	BOD_5 ($CBOD_5$) (mg/l)	TSS (mg/l)	NH_3-N (mg/l)	TKN (mg/l)
Permit Limit	May - Nov	8.0	24.0	1.0	3.0
	Dec - Apr	8.0	24.0	1.0	4.0

(2) DMR Concentration

Qtr	Month	BOD_5 ($CBOD_5$) (mg/l)	TSS (mg/l)	NH_3-N (mg/l)	TKN (mg/l)
1	January	2.0	5.3	0.01	0.86
	February	1.7	5.8	0.02	0.76
	March	1.8	4.7	0.02	0.67
2	April	1.1	4.1	0.01	0.50
	May	1.2	4.5	0.01	0.64
	June	0.88	1.8	0.01	0.61
3	July	1.2	4.7	0.03	0.59
	August	0.94	2.9	0.01	0.57
	September	1.1	3.5	0.04	0.80
4	October	1.2	3.7	0.02	0.89
	November	2.0	7.3	0.06	1.1
	December	2.2	7.8	0.03	0.97
	Annual Avg.	1.4	4.7	0.02	0.75

B. List the monthly average permit limit and DMR loadings below.

(1) NPDES Permit Loading

	Months	BOD_5 ($CBOD_5$) (lbs/day)	TSS (lbs/day)	NH_3-N (lbs/day)	TKN (lbs/day)
Permit Limit	May - Nov	5671	17013	708	2126
	Dec - Apr	5671	17013	708	2835

(2) DMR Loading

Qtr	Month	BOD_5 ($CBOD_5$) (lbs/day)	TSS (lbs/day)	NH_3-N (lbs/day)	TKN (lbs/day)
1	January	1557	4468	4.9	648
	February	1320	4598	23	563
	March	906	2679	12	360
2	April	510	1956	2.7	240
	May	499	2023	5.0	262
	June	251	582	2.5	184
3	July	535	2097	11	243
	August	394	1243	4.8	232
	September	199	673	8.1	149
4	October	222	708	3.2	165
	November	757	2796	22	328
	December	1227	4217	18	506
	Annual Avg.	698	2337	9.7	323

C. During the past year did the BOD_5 concentration (mg/l) and/or loading (lbs/day) exceed the product of 1.4 times the monthly average permit limit during two months of any consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

D. During the past year did the BOD_5 concentration (mg/l) and/or loading (lbs/day), exceed the monthly average permit limit during four months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

E. During the past year did the effluent TSS concentration (mg/l) or loading (lbs/day) exceed the product of 1.4 times the monthly average permit limit during two months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

F. During the past year did the TSS concentration (mg/l) and/or loading (lbs/day) exceed the monthly average permit limit during four months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

G. During the past year did the NH_3-N or TKN concentration (mg/l) and/or loading (lbs/day) exceed the product of 1.4 times the monthly average permit limit during two months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

H. During the past year did either the NH_3-N or TKN concentration (mg/l) and/or loading (lbs/day), exceed the monthly average permit limit during four months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

I. Enter each point value checked for C through H in the blanks below.

C Points = 0
D Points = 0
E Points = 0
F Points = 0
G Points = 0
H Points = 0

HIGHEST INDIVIDUAL POINT VALUE FOR PART 2 (C-H) 0 (HIGHEST POINT = 121)
Enter this value on Part 11: Summary Sheet.

Facility Name: Valley Creek WWTP

Part 3: Age of the Wastewater Treatment Facility

A. What year was the wastewater treatment plant constructed or last reconstructed? 2005

Subtract the above answer from the report year to determine age:

Age = (Last Calendar year) - (Answer to A)

Age 2013 = (2005) - (8)

Enter Age in Part C below.

B. Check the type of treatment facility employed.

		Factor
X	Mechanical Treatment Plant	2.0
_____	Aerated Lagoon	1.5
_____	Stabilization Pond	1.0
_____	Other (Specify:_____)	1.0

C. Multiply the factor listed next to the type of the facility your community employs by the age of your facility to determine the total point value for Part 3:

2.0 (Factor) x 8 (Age) = 16 TOTAL POINT VALUE FOR PART 3

Enter the above value on Part 11: Summary Sheet. If the total point value exceeds 40, enter 40 on Part 11: Summary Sheet.

Facility Name: Valley Creek WWTP

Part 4: Bypassing and Overflows

A. How many bypass or overflow events of untreated wastewater occurred in the last year at the WWTP due to heavy rain? 0

B. How many bypass or overflow events of untreated wastewater occurred in the last year prior to the headworks of the WWTP due to heavy rain? 57

C. How many of the bypass or overflow events listed in Parts A and B have been corrected such that future bypass or overflow events at the same location due to heavy rain are not anticipated? 8

D. Add together Answers A and B and subtract Answer C from that total.
A + B – C = _____ (Check the appropriate point total.)

☐ 0 = 0 points ☐ 1 = 5 points ☐ 2 = 10 points ☐ 3 = 15 points ☐ 4 = 20 points ☐ 5 = 25 points ☐ 6 = 30 points
☐ 7 = 35 points ☐ 8 = 40 points ☐ 9 = 45 points ☐ 10 = 50 points 11 or more = ☑ 100 points

E. How many bypass or overflow events of untreated wastewater occurred in the last year at the WWTP due to equipment failure? (This includes clogged/broken lines or manholes.) 0

F. How many bypass or overflow events of untreated wastewater occurred in the last year due to equipment failure prior to the headworks of the WWTP? (This includes clogged/broken lines or manholes.) 126

G. How many of the bypass or overflow events listed in Parts E and F have been corrected such that future bypass or overflow events at the same location due to the same equipment failure are not anticipated? 126

H. Add together Answers E and F and subtract Answer G from that total.
E + F - G = _____ (Check the appropriate point total.)

☑ 0 = 0 points ☐ 1 = 5 points ☐ 2 = 10 points ☐ 3 = 15 points ☐ 4 = 20 points ☐ 5 = 25 points ☐ 6 = 30 points
☐ 7 = 35 points ☐ 8 = 40 points ☐ 9 = 45 points ☐ 10 = 50 points 11 or more = ☐ 100 points

I. Add point values circled in D and H and enter the total in the blank below.

TOTAL POINT VALUE FOR PART 4 100
Enter this value on Part 11: Summary Sheet.

All bypass or overflow events that have occurred in the last year (for any reason) must be individually reported with this MWPP report.

Facility Name: Valley Creek WWTP

Part 5: Sludge Quantity and Storage

A. Please provide information concerning sludge quantity, characteristics, and storage practices based on available data as requested on the *MWPP Sewage Sludge Survey,* ADEM Form 419.

B. How many months of sludge storage capacity does the wastewater treatment facility have available, either on-site or off-site? (i.e., How many months can the facility operate without land spreading or disposing of sludge?) 4

(Check the appropriate point total.)

Greater than or equal to 4 months	= 0 points	☑
Less than 4 months, but greater than or equal to 3 months	= 10 points	☐
Less than 3 months, but greater than or equal to 2 months	= 20 points	☐
Less than 2 months, but greater than or equal to 1 month	= 30 points	☐
Less than one month	= 50 points	☐

TOTAL POINT VALUE FOR PART 5 0
Enter this value on Part 11: Summary Sheet.

Part 6: Sludge Disposal Practices and Sites

A. Please provide the sludge disposal practices and site information based on available data as requested on the *MWPP Sewage Sludge Survey,* ADEM Form 419.

B. How many months or years does the facility have access to and approval for sufficient land disposal sites to provide proper land disposal? (Check the appropriate point total.)

36 or more months	= 0 points	☐
24 - 35 months	= 10 points	☐
12 - 23 months	= 20 points	☑
6 - 11 months	= 30 points	☐
Less than 6 months	= 50 points	☐

TOTAL POINT VALUE FOR PART 6 20
Enter this value on Part 11: Summary Sheet.

Facility Name: Valley Creek WWTP

Part 7: New Development

Are there any major new developments (industrial, commercial, or residential) in the last calendar year or anticipated in the next 2-3 years such that either flow or BOD_5 loadings to the sewage system could significantly increase? Estimate additional loadings below.

Design Population: Equivalent (PE)	Design Flow: 0.324 MGD	Design BOD_5: 6,200 lbs/day

List industrial and/or residential developments.

The Cahaba River WWTP to Valley Creek WWTP Sludge Transfer Force Main is under design. The project is needed to comply with the Cahaba River TMDL. Waste sludge from Cahaba will be pumped to the Shades Transfer Sewer and routed to the Valley Creek WWTP.

Will the additional loading overload the plant? (Check the appropriate point total.)

No = 0 points ☑ Yes = 121 points ☐

Enter the point total in the blank below.

TOTAL POINT VALUE FOR PART 7 0 (highest point total = 121)
Enter this value on Part 11: Summary Sheet.

Part 8: Operator Certification

Complete the *Plant and Collection System Personnel Inventory,* ADEM Form 441.

Do both the plant operator and collection system staffing comply with ADEM Administrative Code; Division 10, Operator Certification Program? (Check the appropriate point total.)

Yes = 0 points ☑ No = 121 points ☐

TOTAL POINT VALUE FOR PART 8 0 (highest point total = 121)
Enter this value on Part 11: Summary Sheet.

Facility Name: Valley Creek WWTP

Part 9: Financial Status

A. Are User-Charge Revenues sufficient to cover operation and maintenance expenses? If no, how are O&M costs being financed? ***Include user charge rates***.

Revenues are sufficient. The below values are based on a 5/8" meter and 6,000 gallons water use. Jefferson County has a three tier block rate structure for residential users for 0-3, 4-6, and 7+ ccf water use.

Residential Minimum $15.00 Plus rate 6.02; 9.36; 10.69 /1,000 gal.

Industrial Minimum $15.00 Plus rate $10.51 /1,000 gal.

Monthly residential rate based on 6,000 gallons usage $ 56.04 (includes 15% credit for residential)

Please complete the above information based on your user charge rates for the report year. You may attach a sample water and sewer bill for clarity.

B. What financial resources are available to pay for the wastewater improvements and/or reconstruction needs?

In 2013, Jefferson County issued Series 2013 Sewer Warrants that fund capital improvements through 2023 at an annual average rate of $71.9 million over the 10-year period.

Part 10: Subjective Evaluation

A. Describe briefly the physical and structural conditions of the wastewater treatment facility.

Most of the WWTP was upgraded or newly constructed in 2005 and is in good condition. Some equipment and processes were constructed in the 1970s, 80s, and 90s and are in fair to average condition. Maintenance and refurbishments are planned for assets needing improvements.

B. Describe the general condition of the sewer system (sewer lines, manholes, lift stations).

The Valley system includes roughly 7,600,000' of pipe and 80 pump stations. The system's performance is below the expectations of the County. Repairs, replacements, and improvements are underway and planned.

C. What sewage system improvements does the community have planned for construction in the next 5 years?

See attachment

D. What is the theoretical design life of the plant, and what is the estimated remaining useful life of the wastewater treatment facility?

See attachment

E. What problems, if any, over the last year have threatened treatment or conveyance within the system?

See attachment

F. Is the community presently involved in formal planning for treatment facility upgrading?

No

G. How many days in the last year were there residential backups at any point in the collection system for any reason other than clogging of the lateral connection? 47

H. Does the plant have a written plan for preventive maintenance on major equipment items? If yes, describe.

Yes. We have a comprehensive maintenance plan that schedules all preventive maintenance per manufacturers recommendations or better.

Valley Creek

Part 10.C

The County has plans to bid an estimated $14,000,000 worth of sewer line rehabilitation and repairs primarily located in the Valley Creek collection system in the summer of 2014. Design is underway for the Lincoln Ave sewer replacement that will increase capacity along a section with multiple wet-weather overflows. The County has plans to commence collection system modeling work in Valley in the summer of 2014. The results of the model will used to develop improvement strategies for sites with past wet-weather overflows identified in Part 4.B&C of this MWPP. Headworks screen refurbishment, clarifier floor grout repairs, and significant painting efforts are all planned for the Valley Creek WWTP in the next 24 months.

Backup power generators are planned for the following pump stations: Chapel Drive #2, Moss Lane, Oakwood Drive, Trace Ridge, and Walker Avenue. Wet-well rehabilitation and pump and pipe improvements are planned for the Halls Branch pump station.

Part 10.E

Prolonged weather patterns producing saturated ground conditions prior to a storm have been identified as the primary cause of most I/I related SSOs observed in the last few years. The mini-system areas that have repeat overflows attributed to excessive I/I were included in a SSES project that included television inspection (TVI), manhole inspections, and smoke testing of all sewers. Defects and/or deficiencies have been identified and designs are being developed for rehabilitation and replacement construction projects that will bid in the summer of 2014. Several collapsed sections of sewer discovered through the TVI have already been repaired. Engineering capacity analysis of the sewers will also be performed.

While very small in volume, the Eastern Valley Road force main broke 12 times in 2013 contributing to 12 separate SSO events. A construction contract for replacement commenced on 2/5/2014 and the original scope was completed on 4/16/2014 eliminating the potential for future overflows from pipe failure. Additional replacement work is planned after more corroded pipe was identified through the construction work.

Part 10.L

Jefferson County's bankruptcy impacted the County's ability to fund needed system improvements. Specific to Valley, the hydraulic model proposed in the 2013 MWPP Resolution Form and response to Part 10.C was delayed. Design of the WWTP work described Part 10.C (digester mixing, headworks screen refurbishment, energy optimization, SCADA replacement) was also delayed. The County exited bankruptcy on December 3, 2013. The County has completed a QBS process and selected a consultant to perform the modeling work. The County is in contract negotiations and plans to commence modeling work in the summer of 2014. The County now post-bankruptcy has capital funding through 2023 at an

annual average rate of $71.9 million over the 10-year period. This capital funding will be adequate to provide for needed improvements and system renewal. The County is committed to improving the performance of the Valley Creek complete waste treatment system.

The elimination of the Eastern Valley Force Main was listed in the 2013 MWPP Resolution Form. Through the design process is was determined to be more cost effective to replace the corroded portions of the force main than to eliminate through line extensions and capacity upgrades to a nearby gravity line. The construction to replace the force main began on 2/5/2014 and was completed on 4/16/2014 eliminating the potential for future overflows from pipe failure.

I. Does this preventive maintenance program depict frequency of intervals, types of lubrication, and other preventive maintenance tasks necessary for each piece of equipment? (Check the appropriate response.) Yes ☑ No ☐

J. Are these preventive maintenance tasks, as well as equipment problems, being recorded and filed so future maintenance problems can be assessed properly? (Check the appropriate response.) Yes ☑ No ☐

K. Describe any major repairs or mechanical equipment replacement made in the last year and include the approximate cost for those repairs. Do not include major treatment plant construction or upgrading programs.

Trojan UV Components - $335, 850.00

Dewatering Communications Repairs - $118,900.00

Hy-Bon Gas Compressor Parts - $22,400.00

Dewatering Filter Press Belts - $36,400.00

Trojan UV Communications Boards - $15,850.00

Blower Touchscreen & Programming - $12,500.00

Dewatering Press Parts & Cylinders - $12,100.00

L. List any additional comments. (Attach additional sheets if necessary.)

Facility Name: Valley Creek WWTP

Part 11: Summary Sheet

1. Enter in the values from Parts 1 through 8 in the left column below. Add the numbers in the left column to determine the MWPP Report point total the wastewater system generated for the previous calendar year.

Actual Values	Maximum Possible
Part 1 5 points	80 points
Part 2 0 points	121 points
Part 3 16 points	40 points
Part 4 100 points	200 points
Part 5 0 points	50 points
Part 6 20 points	50 points
Part 7 0 points	121 points
Part 8 0 points	121 points
Total 141 points	783 points

2. Check the facility type that best describes the plant's treatment and disposal of wastewater.

- [✓] Mechanical plant with surface water discharge
- [ ] Aerated Lagoon or stabilization pond with surface water discharge
- [ ] Mechanical plant using land disposal of liquid wastes
- [ ] Aerated Lagoon or stabilization pond using land disposal of liquid wastes

3. Check the range that describes the action needed to address problems identified in the report.

- [ ] 0 - 70 pts. Actions as Appropriate*
- [ ] 71 - 120 pts. Departmental Recommendation Range*
- [✓] 121 – 783 Municipality Action Range*

***Other actions may be required by NPDES outside the scope of this report.**

4. Complete the *Municipal Water Pollution Prevention Resolution Form*, ADEM Form 418.

5. In Question 1, do any of the actual point values in the left column equal the maximum possible points in the right column? (Check the appropriate response) Yes ☐ No ☑

If yes, provide a written explanation for this situation in the space below.

See attached response for Part 11.5

Valley - Part 11.5

Eliminating wet-weather and repeat sanitary sewer overflows in the Valley Creek system is one of the Environmental Services Department's highest priorities, and the County has dedicated significant resources to correcting the problem. In 2013, the County completed SSES investigations in 14 mini-systems in the Valley system that had recurring (2 or more) I/I related SSOs. The results of the TVI and smoke testing are being utilized to prepare rehabilitation and replacement designs. The construction work is planned to bid in the summer of 2014. The 49 SSOs noted in Part 4.D as uncorrected and potentially anticipated future SSOs are from five localized areas out of the 14 mini-systems noted above. Nearly half (24 of the 49) of the SSOs are from mini-system 1029 in Hueytown. This grouping of SSOs includes overflows from 230 Wabash Ave, 231 Dexter Court, 406 Wickstead Rd, and 612 Fairlawn Ct. Rehabilitation and sewer replacement work are included in the design plans scheduled to bid this year. Downstream capacity improvement work will likely be required to eliminate the potential for future overflows. The County has plans to commence collection system modeling work in Valley in the summer of 2014. The results of the model will be used to develop improvement strategies at this site and any other capacity limited locations identified in the collection system.

A second area with reoccurring SSOs includes 1624, 1625, and 1628 17th ST SW Birmingham in mini-system 1069. The Lincoln Ave Sewer Relocation project is under design and also planned to bid in the summer of 2014. This project will relocate the sewer to eliminate multiple siphons and increase the capacity of the sewer.

The other areas include 306 4th Ave SW Bessemer, 2122 Fulton Ave Birmingham, and 2405 Berkley Ave Bessemer. The County is committed to identifying and correcting all wet-weather related SSOs and all repetitive SSOs in the collection system.

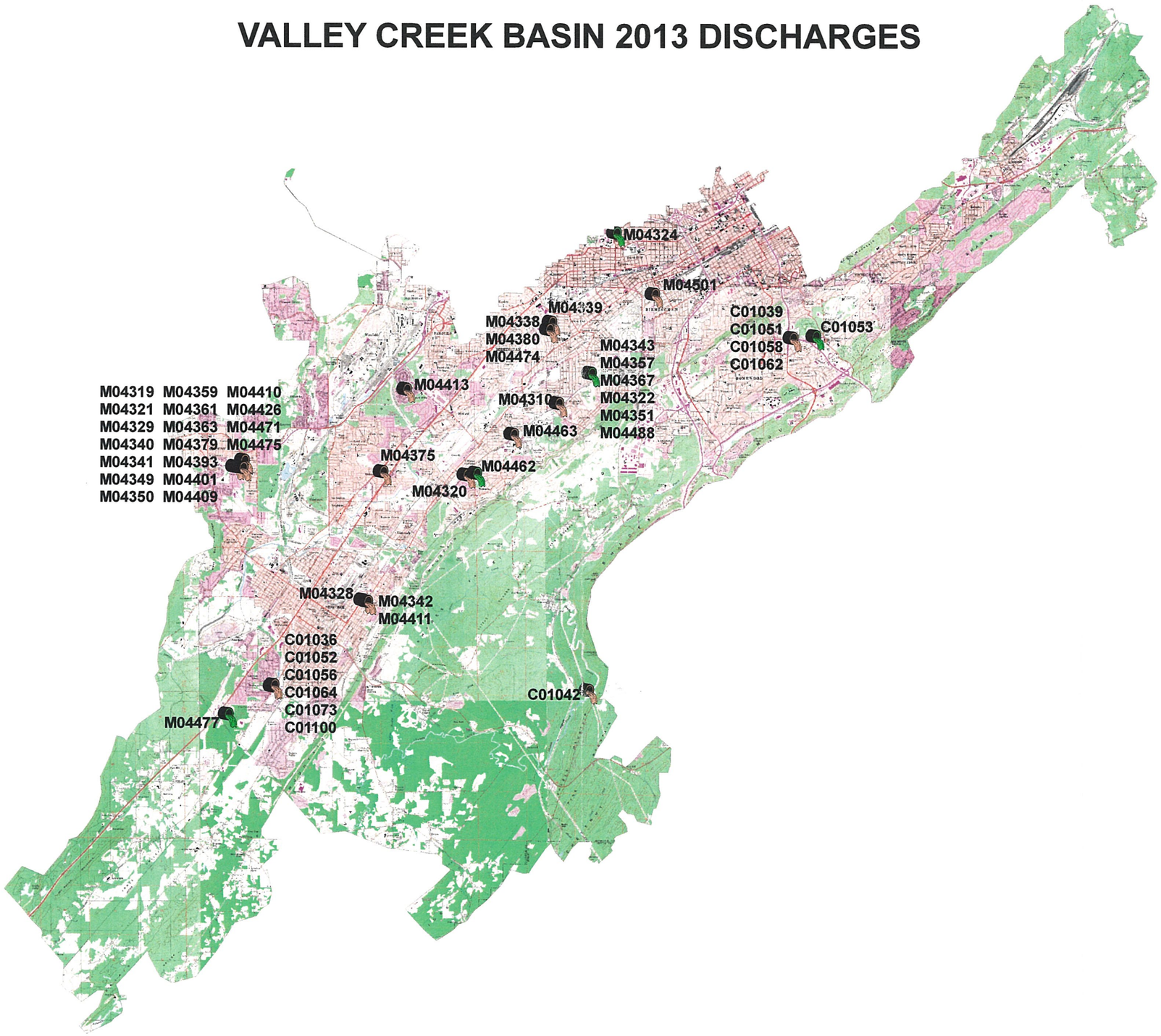
The County has already replaced significant portions of a force main that had corrosion damage and failed 12 times in 2013 causing 12 different SSO events.

Valley Creek Wastewater Treatment Plant

ATTACHMENT 2 – Raw Sewage Bypass and

SUMMARY

VALLEY CREEK BASIN 2013 DISCHARGES



NOTE: OVERFLOWS SHOWN ARE OVER 10,000 GALLONS.

JEFFERSON COUNTY
ENVIRONMENTAL SERVICES
PLOTTED: 2-11-14

Summary of Unpermitted Discharges - Valley Creek

January 01, 2013 through December 31, 2013

NOTE: Quantities shown in the column "Est. Volume" are ESTIMATED ONLY. These estimates are the County's best determination of the discharge volume, based upon site-determinable information and accepted estimating methods. However, such estimates are subject to a high number of variables which are completely beyond the County's control and which can have a significant effect upon the calculated amount. Therefore, these estimates are to be used for relative comparison only, not as actual discharge volumes.

Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*
C01033	1/2/13	5034 Eastern Valley Road	Valley	Ground Absorbed	2,500	Pipe	Force Main Break	Moderate Rain	Line Repaired	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
C01034	1/2/13	306 4th Ave SW	Valley	Feeder Creek to Valley Creek	1,200	Manhole	Grease/ Debris/ Surcharge from Rain	Moderate Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
C01035	1/2/13	3696 Hilltop Rd (Morgan Greenwood #2 PS)	Valley	Ground Absorbed	1,080	Pump Station	P.S. Equipment Failure	Moderate Rain	Pump Station Repaired	Brian Champion	Sewer Maintenance Supervisor
	Notes: #1 pump was clogged causing it to not pump incoming flow. #2 pump was put on line and the overflow was stopped.										
C01036	1/14/13	306 4th Ave SW	Valley	Storm Drain/ Feeder Creek to Valley Creek	1,437,200	Manhole	Surcharge from Rain	Heavy Rain	Line Monitored	Don Goodwin	Sewer Video Operations Supervisor
	Notes:										
C01039	1/15/13	101 Hermosa Drive	Valley	Ground Absorbed/ Storm Drain/ Shades Creek	1,867,502	Manhole	Surcharge from Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
C01042	1/15/13	260 Shades Crest Road (Ross Bridge Pkwy)	Valley	Shades Creek	250,000	Manhole	Surcharge from Rain	Moderate Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										

NOTE: Quantities shown in the column "Est. Volume" are ESTIMATED ONLY. These estimates are the County's best determination of the discharge volume, based upon site-determinable information and accepted estimating methods. However, such estimates are subject to a high number of variables which are completely beyond the County's control and which can have a significant effect upon the calculated amount. Therefore, these estimates are to be used for relative comparison only, not as actual discharge volumes.

Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*
C01043	1/16/13	5082 Eastern Valley Road	Valley	Ground Absorbed	1,740	Pipe	Force Main Break	Heavy Rain	Line Repaired	Don Goodwin	Sewer Video Operations Supervisor
	Notes:										
C01044	1/18/13	5082 Eastern Valley Road	Valley	Ground Absorbed	2,990	Pipe	Force Main Break	Light Rain	Line Repaired	Don Goodwin	Sewer Video Operations Supervisor
	Notes:										
C01045	1/18/13	5082 Eastern Valley Road	Valley	Ground Absorbed	1,725	Pipe	Force Main Break	Light Rain	Line Repaired	Don Goodwin	Sewer Video Operations Supervisor
	Notes:										
C01046	1/25/13	5082 Eastern Valley Rd	Valley	Ground Absorbed	506	Pipe	Force Main Break	No Rain	Line Repaired	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
C01047	1/25/13	101 Hermosa Drive	Valley	Storm Drain	1,028	Bypass Pump Hose	Bypass Pumping	No Rain	Area Cleaned	Brian Champion	Sewer Maintenance Supervisor
	Notes: When rolling up hose from bypass pumping operations, sewage contained within the hose was released.										
C01049	1/29/13	1923 21st Ave S	Valley	Ground Absorbed		Manhole	Unknown	No Rain	Sent to TVI	Brian Champion	Sewer Maintenance Supervisor
	Notes: Manhole was not overflowing upon crew arrival. Evidence of an overflow found around manhole.										
C01051	1/30/13	101 Hermosa Drive	Valley	Storm Drain/ Shades Creek	57,486	Manhole	Surcharge from Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
C01052	1/30/13	306 4th Ave SW	Valley	Drainage Ditch/ Valley Creek	487,400	Manhole	Surcharge from Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										

NOTE: Quantities shown in the column "Est. Volume" are ESTIMATED ONLY. These estimates are the County's best determination of the discharge volume, based upon site-determinable information and accepted estimating methods. However, such estimates are subject to a high number of variables which are completely beyond the County's control and which can have a significant effect upon the calculated amount. Therefore, these estimates are to be used for relative comparison only, not as actual discharge volumes.

Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*
C01053	1/30/13	Cahaba Rd & 20th Place S	Valley	Drainage Ditch/ Storm Drain/ Shades Creek	33,825	Manhole	Grease	Moderate Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
C01054	1/30/13	G&H Road and Eastern Valley Rd	Valley	Ground Absorbed	912	Pipe	Force Main Break	Moderate Rain	Line Repaired	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
C01055	1/31/13	5082 Eastern Valley Road	Valley	Ground Absorbed	920	Pipe	Force Main Break	Moderate Rain	Line Repaired	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
C01056	2/11/13	306 4th Ave SW	Valley	Drainage Ditch/ Feeder Creek to Valley Creek	1,274,000	Manhole	Surcharge from Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
C01057	2/11/13	5016 Eastern Valley Road	Valley	Ground Absorbed	874	Pipe	Force Main Break	Moderate Rain	Line Repaired	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
C01058	2/11/13	101 Hermosa Dr	Valley	Storm Drain/ Shades Creek	164,484	Manhole	Broken Water Main Discharging into Sanitary Sewer	Heavy Rain	Water Main Repaired	Brian Champion	Sewer Maintenance Supervisor
	Notes: Large diameter water main was broken discharging approximately .5 MGD into sanitary sewer line. Broken small diameter water line also discharging into sanitary sewer line.										
C01059	2/11/13	4939 Bessemer Johns Rd	Valley	Ground Absorbed	3	Manhole	Roots	Moderate Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										

NOTE: Quantities shown in the column "Est. Volume" are ESTIMATED ONLY. These estimates are the County's best determination of the discharge volume, based upon site-determinable information and accepted estimating methods. However, such estimates are subject to a high number of variables which are completely beyond the County's control and which can have a significant effect upon the calculated amount. Therefore, these estimates are to be used for relative comparison only, not as actual discharge volumes.

Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*
C01060	2/12/13	Eastern Valley Rd & Ave G	Valley	Ground Absorbed	948	Pipe	Force Main Break	Moderate Rain	Line Repaired	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
C01061	2/22/13	2017 Mississippi Ave	Valley	Drainage Ditch/ Valley Creek	785	Manhole	P.S. Equipment Failure	Moderate Rain	Pump Station Repaired	Brian Champion	Sewer Maintenance Supervisor
	Notes: Level control fault caused pumps to run on air.										
C01062	2/22/13	101 Hermosa Drive	Valley	Storm Drain/ Shades Creek	252,870	Manhole	Broken Water Main Discharging into Sanitary Sewer	Heavy Rain	Water Main Repaired	Brian Champion	Sewer Maintenance Supervisor
	Notes: Large diameter water main was broken discharging approximately .5 MGD into sanitary sewer line. Broken small diameter water line also discharging into sanitary sewer line.										
C01063	2/22/13	3696 Hilltop Rd SE	Valley	Ground Absorbed	639	Manhole	P.S. Equipment Failure	Moderate Rain	Pump Station Repaired	Brian Champion	Sewer Maintenance Supervisor
	Notes: Pump station pumps became clogged with rags.										
C01064	2/23/13	306 4th Ave SW	Valley	Drainage Ditch/ Feeder Creek to Valley Creek	117,182	Manhole	Surcharge from Rain	Heavy Rain	Line Montiored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
C01067	2/27/13	4954 Eastern Valley Rd	Valley	Ground Absorbed	770	Pipe	Force Main Break	No Rain	Line Repaired	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
C01068	3/6/13	101 Hermosa Dr.	Valley	Ground Absorbed/ Storm Drain	879	Bypass Pump Hose	Removing Bypass Pumps	No Rain	Cleaned Areas	Brian Champion	Sewer Maintenance Supervisor
	Notes: When bypass pumping operation was disassembled there was an amount of sewage that could not be contained. The affected area was washed and cleaned.										

NOTE: Quantities shown in the column "Est. Volume" are ESTIMATED ONLY. These estimates are the County's best determination of the discharge volume, based upon site-determinable information and accepted estimating methods. However, such estimates are subject to a high number of variables which are completely beyond the County's control and which can have a significant effect upon the calculated amount. Therefore, these estimates are to be used for relative comparison only, not as actual discharge volumes.

Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*
C01070	3/23/13	2 Country Club Rd	Valley	Storm Drain/ Watkins Branch		Manhole	Surcharge from Rain	Heavy Rain	Cleaned Area	Brian Champion	Sewer Maintenance Supervisor
	Notes: Manhole not overflowing upon crew arrival, but there was evidence on the ground.										
C01071	3/23/13	1149 Daniel Dr	Valley	Valley Creek	2,704	Manhole	Surcharge from Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
C01072	3/23/13	1923 21st Ave S	Valley	Ground Absorbed/ Feeder to Shades Creek		Manhole	Surcharge from Rain	Heavy Rain	Cleaned Area	Brian Champion	Sewer Maintenance Supervisor
	Notes: Manhole not overflowing upon crew arrival, but there was evidence on the ground.										
C01073	3/24/13	306 4th Ave SW	Valley	Drainage Ditch/ Feeder Creek to Valley Creek	14,355	Manhole	Surcharge from Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
C01075	4/12/13	551 W Oxmoor Rd	Valley	Shades Creek	882	Manhole	Roots/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
C01078	5/4/13	306 4th Ave SW	Valley	Drainage Ditch/ Feeder Creek to Valley Creek	6,924	Manhole	Surcharge from Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
C01084	7/19/13	105 Oxmoor Pl Cir	Valley	Storm Drain	93	Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
C01085	7/24/13	4954 Eastern Valley Rd	Valley	Ground Absorbed	900	Pipe	Force Main Break	No Rain	Line Repaired	Brian Champion	Sewer Maintenance Supervisor
	Notes:										

NOTE: Quantities shown in the column "Est. Volume" are ESTIMATED ONLY. These estimates are the County's best determination of the discharge volume, based upon site-determinable information and accepted estimating methods. However, such estimates are subject to a high number of variables which are completely beyond the County's control and which can have a significant effect upon the calculated amount. Therefore, these estimates are to be used for relative comparison only, not as actual discharge volumes.

Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*
C01089	8/30/13	320 Kenilworth Dr	Valley	Shades Creek		Pipe	Gravity Main Break/ Contractors Bypass Operations	No Rain	Contractor Adjusted the Bypass Operation/ Project Planned to Replace/ Repair Line	Brian Champion	Sewer Maintenance Supervisor
	Notes: Volume was not determinable.										
C01090	9/5/13	168 Lucerne Blvd	Valley	Storm Drain		Pipe	Construction Damage/ Gravity Main Break	No Rain	Line Repaired	Brian Champion	Sewer Maintenance Supervisor
	Notes: Contractor working on storm sewer for City of Homewood broke sanitary sewer line. Volume was not determinable.										
C01091	9/9/13	320 Kenilworth Dr	Valley	Shades Creek		Pipe	Gravity Main Break/ Plug Failure	No Rain	Plug Replaced	Brian Champion	Sewer Maintenance Supervisor
	Notes: Contractor performing rehabilitation work for the County had a plug failure while bypassing flow. Volume was not determinable.										
C01092	9/23/13	306 4th Ave SW	Valley	Drainage Ditch/ Feeder to Valley Creek		Manhole	Surcharge from Rain	Moderate Rain	Crew Responded	Brian Champion	Sewer Maintenance Supervisor
	Notes: Overflow occurred on 9/21/13 but was not called in until 9/23/13. County crew responded and did not find manhole overflowing. Volume was not determinable.										
C01093	9/23/13	320 Kenilworth Dr	Valley	Shades Creek		Pipe	Gravity Main Break/ Pump Failure	No Rain	Pumps Back Online	Brian Champion	Sewer Maintenance Supervisor
	Notes: Contractor performing rehabilitation work for the County had a pump failure while bypassing flow. Volume was not determinable.										
C01094	9/24/13	2169 Headrick Rd	Valley	Ground Absorbed/ Shades Creek	675	Air Release Valve in Manhole	Cracked Air Release Valve	No Rain	Repaired Air Release Valve	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
C01095	9/25/13	320 Kenilworth Dr	Valley	Shades Creek		Pipe	Gravity Main Break/ Plug Failure	No Rain	Plug Replaced	Brian Champion	Sewer Maintenance Supervisor
	Notes: Contractor performing rehabilitation work for the County had a plug failure while bypassing flow. Volume was not determinable.										

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Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*
C01096	9/29/13	320 Kenilworth Dr	Valley	Storm Drain/ Shades Creek		Discharge Hose	Hole in Discharge Hose	No Rain	Hose Repaired	Brian Champion	Sewer Maintenance Supervisor
	Notes: Contractor performing rehabilitation work for the County had a hole develop in the hose while bypassing flow. Volume was not determinable.										
C01097	9/30/13	323 Edgewood Blvd	Valley	Ground Absorbed		Cleanout	Bypass Pump	No Rain	Cleaned and Adjusted Pumps and Plugs	Brian Champion	Sewer Maintenance Supervisor
	Notes: Contractor performing rehabilitation work for the County caused a cleanout to overflow while bypassing flow. Evidence of a cleanout overflow was not discovered until the following morning. Volume was not determinable.										
C01100	12/9/13	306 4th Ave SW	Valley	Feeder to Valley Creek	27,848	Manhole	Surcharge from Rain	Moderate Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
C01101	12/10/13	5034 Eastern Valley Rd	Valley	Ground Absorbed	2,520	Pipe	Force Main Break	No Rain	Line Repaired	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
C01102	12/25/13	Orchard Ave & Southhampton Cir	Valley	Storm Drain	324	Manhole	P.S. Equipment Failure	No Rain	Pump Station Repaired	Brian Champion	Sewer Maintenance Supervisor
	Notes: Level control failure. Electricians repaired and restarted pump station.										
M04309	1/1/13	529 Flint Road	Valley	Ground Absorbed	5,000	Manhole	Grease/ Rags	Heavy Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04310	1/2/13	2227 21st St SW	Valley	Storm Drain/ Drainage Ditch/ Valley Creek	66,001	Cleanout/ Manhole	Grease/ Debris/ Rags	Heavy Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04311	1/2/13	2227 21st Street SW	Valley	Ground Absorded		Pipe	Construction Damage	Heavy Rain	Line Repaired	Brian Champion	Sewer Maintenance Supervisor
	Notes: ALAGASCO drilled through sanitary sewer line. Volume was not determinable.										

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Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*
M04314	1/6/13	Green Springs Hwy & Raleigh Ave	Valley	Storm Drain/ Shades Creek	2,000	Manhole	Debris/ Small Botttles	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04316	1/8/13	5331 Woodward Road	Valley	Ground Absorbed		Manhole	Unknown	No Rain	Lines Cleaned	Brian Champion	Sewer Maintenance Supervisor
	Notes: Volume not determinable. Evidence was found around manhole while jetwashing lines in the area.										
M04317	1/9/13	1860 Russet Hill Cir	Valley	Storm Drain	79	Manhole	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04318	1/10/13	132 17th St SW	Valley	Ground Absorbed	1,386	Cleanout	Grease/ Debris/ Rags	Light Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04319	1/13/13	612 Fairlawn Ct	Valley	Drainage Ditch/ Feeder Creek to Valley Creek	285,525	Manhole	Surcharge from Rain	Moderate Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04320	1/14/13	920 Fairdale Rd	Valley	Feeder Creek to Valley Creek	260,820	Cleanout	Surcharge from Rain	Moderate Rain	Line Monitored	Don Goodwin	Sewer Video Operations Supervisor
	Notes:										
M04321	1/14/13	406 Wickstead Rd	Valley	Drainage Ditch/ Feeder Creek to Valley Creek	424,260	Cleanout	Surcharge from Rain	Moderate Rain	Line Monitored	Don Goodwin	Sewer Video Operations Supervisor
	Notes:										
M04322	1/14/13	1628 & 1625 17th St SW	Valley	Storm Drain/ Valley Creek	5,212,395	Manhole	Surcharge from Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										

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M04324	1/14/13	735 9th Ave W	Valley	Ground Absorbed	22,000	Manhole	Grease	Moderate Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04327	1/14/13	2122 Fulton Ave SW & St. Charles Ave	Valley	Drainage Ditch/ Storm Drain/ Valley Creek	5,158	Manhole	Surcharge from Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04328	1/15/13	2405 Berkley Ave	Valley	Storm Drain/ Feeder Creek to Valley Creek	1,189,890	Manhole	Surcharge from Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes: Manholes 1014-026/ 024/ 019/ 014A/ 014										
M04329	1/15/13	230 Wabash Ave	Valley	Storm Drain/ Valley Creek	302,994	Manhole	Surcharge from Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04330	1/15/13	5320 Central Ave	Valley	Drainage Ditch/ Valley Creek	3,391	Manhole	Surcharge from Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04334	1/22/13	2905 Carlisle Rd	Valley	Drainage Ditch/ Watkins Brook	18	Pipe	Grease/ Gravity Main Break	No Rain	Blockage Removed/ Project Planned to Replace/Repair Line	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04335	1/23/13	6633 Ave N	Valley	Ground Absorbed	3	Manhole	Grease/ Roots/ Debris	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04338	1/30/13	2122 Fulton Ave	Valley	Storm Drain/ Valley Creek	87,426	Manhole	Surcharge from Rain	Light Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										

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M04339	1/30/13	St. Charles Ave & 21st St SW	Valley	Drainage Ditch/ Valley Creek	230,040	Manhole	Surcharge from Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04340	1/30/13	231 Dexter Court	Valley	Drainage Ditch/ Valley Creek	75,846	Manhole	Surcharge from Rain	Light Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04341	1/30/13	406 Wickstead Rd	Valley	Drainage Ditch/ Valley Creek	296,192	Cleanout	Surcharge from Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04342	1/30/13	2405 Berkley Ave & 317 25th St S	Valley	Storm Drain/ Feeder Creek to Valley Creek	172,141	Manhole	Surcharge from Rain	Light/ Moderate Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04343	1/31/13	1624 17th St SW	Valley	Storm Drain/ Feeder Creek to Valley Creek	115,978	Manhole	Surcharge from Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04344	2/1/13	1521 Valley View Cir	Valley	Ground Absorbed	8	Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04345	2/1/13	2905 Carlisle Rd	Valley	Ground Absorbed	2	Manhole	Debris	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04346	2/4/13	Old Montgomery Hwy downstream of Foxcroft St	Valley	Ground Absorbed	936	Manhole	Grease/ Roots	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										

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M04347	2/6/13	5229 Ross Bridge Parkway	Valley	Storm Drain		Bypass Pump Discharge Hose	Ruptured Hose	No Rain	Hose Repaired	Brian Champion	Sewer Maintenance Supervisor
	Notes: Bypass hose coupling being utilized by a Contractor performing a sanitary sewer repair was run over by a vehicle and damaged.										
M04348	2/10/13	Alley between 1900 & 2000 Rev Abraham Woods Jr Blvd	Valley	Ground Absorbed	111	Manhole	Grease	Moderate Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04349	2/11/13	406 Wickstead Rd	Valley	Drainage Ditch/ Feeder Creek to Valley Creek	537,848	Cleanout	Surcharge from Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04350	2/11/13	231 Dexter Court	Valley	Drainage Ditch/ Valley Creek	29,147	Manhole	Surcharge from Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04351	2/11/13	1625 & 1628 17th St SW	Valley	Storm Drain/ Valley Creek	31,335	Manhole	Surcharge from Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04352	2/11/13	921 Barclay Dr & 660 9th Ave SW	Valley	Drainage Ditch/ Storm Drain	6,711	Manhole	Grease/ Debris/ Rags	Heavy Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04353	2/13/13	401 Woodland Village	Valley	Ground Absorbed	65	Manhole	Grease/ Debris/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04355	2/15/13	5420 Stadium Trace Pkwy	Valley	Ground Absorbed		Manhole	Jetwashing trap	No Rain	Removed trap	Brian Champion	Sewer Maintenance Supervisor
	Notes: While jetwashing the sanitary sewer line the debris trap became hung when the pump station started causing a partial blockage in the manhole.										

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M04356	2/22/13	2405 Berkley Ave	Valley	Storm Drain	1,572	Manhole	Surcharge from Rain	Heavy Rain	Line Montiored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04357	2/22/13	1625 & 1628 17th St SW	Valley	Storm Drain/ Valley Creek	36,954	Manhole	Surcharge from Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04358	2/22/13	5400 Stadium Trace Pkwy	Valley	Drainage Ditch/ Storm Drain		Manhole	Jetwashing trap	No Rain	Removed trap	Brian Champion	Sewer Maintenance Supervisor
	Notes: While jetwashing the sanitary sewer line the debris trap became hung when the pump station started causing a partial blockage in the manhole.										
M04359	2/22/13	231 Dexter Court	Valley	Drainage Ditch/ Feeder Creek to Valley Creek	139,630	Manhole	Surcharge from Rain	Light Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04360	2/22/13	612 Fairlawn Cir	Valley	Drainage Ditch/ Feeder Creek to Valley Creek	145	Manhole	Surcharge from Rain	Light Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04361	2/22/13	406 Wickstead Rd	Valley	Drainage Ditch/ Feeder Creek to Valley Creek	103,880	Cleanout	Surcharge from Rain	Light Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04363	2/26/13	406 Wickstead Rd	Valley	Drainage Ditch/ Feeder Creek to Valley Creek	126,300	Cleanout	Surcharge from Rain	Light Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04364	2/26/13	231 Dexter Court	Valley	Drainage Ditch/ Feeder Creek to Valley Creek	3,000	Manhole	Surcharge from Rain	Moderate Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										

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M04366	2/27/13	1501 Arthur Shores Dr SW	Valley	Ground Absorbed	74	Manhole	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04367	2/27/13	1625 17th St SW	Valley	Storm Drain/ Feeder to Valley Creek	80,940	Manhole	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04368	3/7/13	113 Stratford Road	Valley	Ground Absorbed	235	Manhole	Roots	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04369	3/9/13	301 Beacon Drive	Valley	Ground Absorbed	77	Cleanout	Grease/ Bed Sheets/ Towels	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04371	3/12/13	2905 Carlisle Rd	Valley	Watkins Brook	3	Manhole	Gravity Main Break	Light Rain	Manhole Repaired	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04372	3/12/13	3209 Lee Ave SW	Valley	Ground Absorbed	6,020	Cleanout	Grease/ Roots/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04375	3/19/13	Int. of Rose Ave & Isabel St	Valley	Feeder to Valley Creek	13,114	Manhole	Construction Damage	No Rain	Bypass Pump Restarted	Brian Champion	Sewer Maintenance Supervisor
	Notes: Contractor's bypass pump shut down and caused overflow. Company returned and restarted pump and the overflow stopped.										
M04377	3/21/13	1023 Princeton Ave SW	Valley	Drainage Ditch	76	Manhole	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										

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M04378	3/23/13	231 Dexter Court	Valley	Storm Drain/ Feeder to Valley Creek	956	Manhole	Surcharge from Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04379	3/23/13	406 Wickstead Road	Valley	Drainage Ditch/ Feeder to Valley Creek	19,950	Cleanout	Surcharge from Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04380	3/23/13	2122 Fulton Ave	Valley	Storm Drain/ Valley Creek	84,992	Manhole	Surcharge from Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04381	3/23/13	1301 Lincoln St SW	Valley	Ground Absorbed	289	Manhole	Grease/ Rags	Heavy Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04384	4/1/13	1901 6th Ave S	Valley	Storm Drain	1,326	Manhole	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04386	4/4/13	4369 Mountaindale Rd	Valley	Storm Drain	163	Manhole	Grease/ Debris	Moderate Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04388	4/7/13	135 Robertson Ave	Valley	Feeder to Lick Creek	2,511	Manhole	Grease/ Roots	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04389	4/8/13	3817 Montevallo Rd	Valley	Ground Absorbed/ Drainage Ditch	113	Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										

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M04390	4/8/13	509 & 511 35th St	Valley	Ground Absorbed	588	Cleanout	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04391	4/10/13	1650 28th Crt S	Valley	Ground Absorbed		Manhole	Grease/ Debris/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes: Manhole not overflowing upon crew arrival, but there was evidence on the asphalt.										
M04392	4/11/13	1625 & 1628 17th St SW	Valley	Storm Drain/ Valley Creek	9,418	Manhole	Surcharge from Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04393	4/11/13	406 Wickstead Rd	Valley	Feeder Creek to Valley Creek	70,348	Cleanout	Surcharge from Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04397	4/15/13	801 Golf Course Rd	Valley	Storm Drain	2,625	Manhole	Grease/ Debris/ Rags	Light Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04398	4/19/13	2122 Fulton Ave	Valley	Storm Drain/ Valley Creek	110	Manhole	Surcharge from Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04399	4/19/13	2820 Commerce Blvd	Valley	Ground Absorbed	3,357	Manhole	Roots	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04400	4/19/13	231 Dexter Ct	Valley	Drainage Ditch/ Feeder to Valey Creek	1,380	Manhole	Surcharge from Rain	Moderate Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										

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M04401	4/19/13	406 Wickstead Rd	Valley	Drainage Ditch/ Valley Creek	18,830	Cleanout	Surcharge from Rain	Moderate Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04406	4/29/13	3845 South Cove Dr	Valley	Drainage Ditch/ Storm Drain/ Drainage to Shades Creek		Pipe	Construction Damage/ Gravity Main Break	No Rain	Line Repaired	Brian Champion	Sewer Maintenance Supervisor
	Notes: Gravity sewer line damaged by Birmingham Water Works crew.										
M04407	4/29/13	6701 Forest Drive	Valley	Ground Absorbed	3	Pipe	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04409	5/4/13	406 Wickstead Rd	Valley	Drainage Ditch/ Valley Creek	235,468	Cleanout	Surcharge from Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04410	5/4/13	231 Dexter Court	Valley	Storm Drain/ Valley Creek	73,440	Manhole	Surcharge from Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04411	5/4/13	2405 Berkley Ave	Valley	Storm Drain/ Valley Creek	25,881	Manhole	Surcharge from Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04413	5/9/13	409 Ridgewood Ave	Valley	Ground Absorbed	11,360	Cleanout	Grease/ Roots/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										

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M04414	5/12/13	104 Woodland Village Dr	Valley	Storm Drain	183	Manhole	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04415	5/15/13	2909 Overhill Rd	Valley	Storm Drain	107	Manhole	Roots	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04416	5/16/13	407 Rosewood St	Valley	Shades Creek	4,551	Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04420	5/24/13	4101 Brook Way	Valley	Feeder Creek to Shades Creek		Pipe	Gravity Main Break	No Rain	Project Planned to Replace/Repair Line	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04421	5/25/13	5320 Beacon Drive	Valley	Storm Drain	3,968	Manhole	Grease/ Debris/ Rags/ Rocks	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04425	6/10/13	231 Dexter Court	Valley	Ground Absorbed/ Valley Creek	115	Manhole	Surcharge from Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04426	6/10/13	406 Wickstead Rd	Valley	Ground Absorbed/ Drainage Ditch/ Valley Creek	27,520	Cleanout	Surcharge from Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04427	6/11/13	30 Laverne Ave	Valley	Drainage Ditch	42	Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										

NOTE: Quantities shown in the column "Est. Volume" are ESTIMATED ONLY. These estimates are the County's best determination of the discharge volume, based upon site-determinable information and accepted estimating methods. However, such estimates are subject to a high number of variables which are completely beyond the County's control and which can have a significant effect upon the calculated amount. Therefore, these estimates are to be used for relative comparison only, not as actual discharge volumes.

Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*
M04428	6/20/13	2305 Granville Ave	Valley	Ground Absorbed	16	Cleanout	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04429	6/22/13	2801 Wilson Rd SW	Valley	Ground Absorbed	270	Cleanout	Grease/ Debris/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04430	7/1/13	517 21st Ave S	Valley	Ground Absorbed	1	Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes: Manhole not overflowing upon crew arrival, but there was evidence on the ground.										
M04433	7/11/13	529 Flint Hill Road	Valley	Ground Absorbed	162	Manhole	Grease/ Rags	Moderate Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04434	7/18/13	921 Medical Center Dr	Valley	Storm Drain	720	Manhole	Grease/ Debris	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04435	7/22/13	3103 Ensley Avenue	Valley	Storm Drain	560	Cleanout	Grease	Moderate Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04436	8/12/13	204 St Charles St	Valley	Ground Absorbed/ Drainage Ditch	96	Manhole	Roots/ Debris/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04437	8/17/13	2828 Linden Ave	Valley	Storm Drain	6,000	Manhole	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										

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Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*
M04438	8/19/13	3212 Country Club Rd	Valley	Drainage Ditch/ Watkins Brook	294	Manhole	Grease/ Roots/ Debris/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04439	8/23/13	504 Brookwood Blvd	Valley	Storm Drain/ Shades Creek		Pipe	Gravity Main Break	No Rain	Line Repaired	Brian Champion	Sewer Maintenance Supervisor
	Notes: Volume was not determinable.										
M04440	8/30/13	7780 Ludington Ln	Valley	Storm Drain	63	Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04443	9/10/13	6637 Seminole Cir	Valley	Ground Absorbed	95	Manhole	Grease/ Roots	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04445	9/17/13	1025 Woodward Rd	Valley	Storm Drain	1,370	Manhole	Grease/ Debris	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04446	9/18/13	1144 Daniel Dr	Valley	Ground Absorbed	1	Manhole	Jetwashing a Line and Had a Blowback	No Rain	Stopped Jetwashing	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04447	9/19/13	1100 Medical Center Dr	Valley	Ground Absorbed	6	Manhole	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04448	9/20/13	3325 Country Club Rd	Valley	Drainage Ditch	5,684	Cleanout	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										

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Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*
M04449	9/20/13	Between 4212 & 4216 Terrace S	Valley	Drainage Ditch	2,675	Pipe	Gravity Main Break/ Rags/ Rocks	No Rain	Blockage Removed/ Line Repaired	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04450	9/26/13	2305 Granville Ave	Valley	Ground Absorbed	67	Manhole	Grease/ Rags	No Rain	Blockage Replaced	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04451	10/9/13	5012 5th Ave N	Valley	Ground Absorbed	93	Manhole	Grease/ Debris/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04452	10/10/13	103 Creel St	Valley	Ground Absorbed	3	Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04453	10/13/13	301 Beacon Crest Ln	Valley	Ground Absorbed	504	Cleanout	Grease/ Debris/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04454	10/15/13	7205 Pine Tree Ln	Valley	Ground Absorbed	330	Cleanout	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04456	10/18/13	5240 Dresden Rd	Valley	Ground Absorbed	354	Manhole	Grease/ Roots/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											
M04457	10/18/13	5012 5th Ave N	Valley	Drainage Ditch/ Valley Creek	1,350	Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
Notes:											

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Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*
M04458	10/21/13	143 Oak Ave	Valley	Drainage Ditch	1,350	Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04459	10/29/13	2177 11th Crt S	Valley	Storm Drain	54	Manhole	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04461	11/5/13	1001 17th St S	Valley	Storm Drain	1,456	Manhole	Grease/ Asphalt	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04462	11/8/13	3345 45th St SW	Valley	Ground Absorbed	26,400	Cleanout	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04463	11/8/13	2800 Wilson Rd	Valley	Valley Creek	25,168	Manhole	Debris/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04464	11/14/13	1477 Milner Crescent	Valley	Storm Drain		Pipe/ Holes in Ground	Gravity Main Break	No Rain	Blockage Removed/ Line Repaired	Brian Champion	Sewer Maintenance Supervisor
	Notes: Volume was not determinable.										
M04467	11/20/13	9218 Country Club Blvd	Valley	Storm Drain/ Watkins Brook		Pipe	Grease/ Roots/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes: Volume was not determinable.										
M04471	11/26/13	231 Dexter Court	Valley	Drainage Ditch/ Feeder to Valley Creek	12,420	Manhole	Surcharge from Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										

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Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*
M04472	11/26/13	5600 Oporto Madrid Blvd	Valley	Drainage Ditch	69	Manhole	Rags	Heavy Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04473	11/26/13	St. Charles Ave & 21st St SW	Valley	Drainage Ditch/ Valley Creek	6,750	Manhole	Surcharge from Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04474	11/26/13	2122 Fulton Ave	Valley	Storm Drain/ Valley Creek	12,789	Manhole	Surcharge from Rain	Heavy Rain	Line Montiored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04475	11/26/13	406 Wickstead Rd	Valley	Drainage Ditch/ Feeder to Valley Creek	18,158	Cleanout	Surcharge from Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04476	11/27/13	913 Cotton Ave SW	Valley	Ground Absorbed	12	Cleanout	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04477	11/27/13	801 Golf Course Rd	Valley	Storm Drain	13,500	Manhole	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04484	12/6/13	249 Graymont Ave W	Valley	Ground Absorbed	4	Manhole	Grease/ Rags	Light Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04485	12/7/13	2613 Cherokee Rd	Valley	Drainage Ditch	60	Manhole	Grease/ Rags	Light Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										

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Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*
M04488	12/9/13	1625 & 1628 17th St SW	Valley	Storm Drain	38,640	Manhole	Surcharge from Rain	Moderate Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04489	12/9/13	406 Wickstead Rd	Valley	Feeder to Valley Creek	404	Cleanout	Surcharge from Rain	Moderate Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes: Cleanout not overflowing upon crew arrival, but there was evidence on the ground.										
M04491	12/13/13	521 Fair Oaks Dr	Valley	Ground Absorbed	864	Manhole	Grease/ Debris	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04492	12/13/13	1044 Sunset Blvd	Valley	Storm Drain	246	Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04493	12/15/13	101 Peachtree Rd	Valley	Ground Absorbed	103	Manhole	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04494	12/16/13	2330 Highland Ave S	Valley	Ground Absorbed	24	Manhole	Gravity Main Break	No Rain	Line Repaired	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04495	12/17/13	705 19th St SW	Valley	Storm Drain		Pipe	Grease/ Leaking Joints	No Rain	Blockage Removed/ Pumped Siphon	Brian Champion	Sewer Maintenance Supervisor
	Notes: Volume was not determinable.										
M04498	12/19/13	803 Green Springs Hwy	Valley	Storm Drain	336	Cleanout	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										

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Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*
M04501	12/26/13	Goldwire St SW & 1st Ave SW	Valley	Drainage Ditch	44,750	Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04502	12/30/13	5103 7th Ave Wylam	Valley	Storm Drain	481	Manhole	Grease/ Debris	Moderate Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04503	12/30/13	6500 Cherokee Dr	Valley	Ground Absorbed	896	Cleanout	Grease/ Debris/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04504	12/31/13	1108 1st St N	Valley	Ground Absorbed		Pipe	Grease/ Debris/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes: Volume was not determinable.										
M04522	1/31/13	501 Palisades Blvd	Valley	Drainage Ditch	2,641	Cleanout/ Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										

Valley Creek Wastewater Treatment Plant

ATTACHMENT 3 – MWPP Sewage Sludge

SURVEY

MWPP SEWAGE SLUDGE SURVEY

Facility Background Information:

1. Facility Information — Permit Number: AL0023655
   - Name: Valley Creek WWTP
   - Street Address: 3923 Clear Water Drive Bessemer, AL 35023
   - County: Jefferson
2. Facility Contact
   - Name: Robby Bennett
   - Title: Plant Manager
   - Telephone: (205) 428-2614
   - Permittee Name: Jefferson County Commission
   - Mailing Address: ESD Suite A-300 716 Richard Arrington Jr. Blvd. N. Birmingham, AL 35203

Facility Flow Information

1. Facility Wastewater Treatment Capacity
   - Avg. Daily Flow for 2000: 51.1 MGD
   - Facility Design Capacity: 85.0 MGD
2. Estimated Septage Quantity Handled (Residuals Removed from Septic Tank Systems)
   - Average Domestic Septage: 301,917 gallons per month
   - Average Commercial Septage: N/A gallons per month
3. Method of Septage Processing
   - Mixed with Influent Wastewater for Treatment
   - Mixed with Sewage Sludge

   Mixed with influent wastewater for treatment
4. Estimated Percentage Contributing Wastewater Flow
   - Residential: 85 %
   - Industrial: 7 %
   - Other: 8 % Describe: Commercial
5. List type of wastewater treatment process(es) utilized at this facility:

   Screening, Grit Removal, Settling, Aeration with Activated Sludge, Clarification, & U.V. Disinfection.
6. Estimated sewage sludge wasting rate at this facility: _____ lb/day dry weight or 197,443 gallons per day
7. Estimated untreated sludge received from off site: _____ lb/day dry weight or 9,926 gallons per day
8. Estimated percent solids of combined sewage sludge prior to treatment: 0.1 %

9. List the sewage sludge treatment processes used in preparing sludge for final use or disposal:

	Sludge Quantity (untreated pounds per day)
Thickening	
Anaerobic Digestion	
Mechanical Dewatering (Belt Filter Presses)	
Lime Stabilization	

10. Estimate the total volume of sludge generated: 4111 (dry U.S. tons per year)

Sludge Disposal Methods

1. Which of the following describes the current method of sewage sludge disposal for this facility:

	Current Practices			Proposed Practices	
	Approved by ADEM		Quantity	Approved by ADEM	
	Yes	No	(dry U.S. tons/year)	Yes	No
a. Land Application, Bulk Shipped			4111		
Agriculture					
Forest					
Public Contact					
Lawn/Home Garden					
b. Land Application, Bagged/Other Container					
Agriculture					
Forest					
Public Contact					
Lawn/Home Garden					
c. Incineration					
d. Subtitle D Landfill (Disposal Only)					
e. Lined Treatment Lagoon or Stabilization Pond					
f. Unlined Lagoon or Stabilization Pond					
g. Other (Please Describe)					

2. If "f" was selected above and sludge is stored for 2 or more years, enter the distance between the surface disposal site and the property line: NA feet

Pollutant Concentrations

1. Enter the total concentrations of the following analytes using existing data. Do not enter TCLP results.

Analyte	Concentration (mg/kg or ppm)	Sample Type	Sample Date	Detection Level of Analysis
Arsenic	<PQL	Grab	Yearly Average	11
Cadmium	<PQL	Grab	Yearly Average	8.0
Chromium	48	Grab	Yearly Average	8.0
Copper	450	Grab	Yearly Average	8.0
Lead	40	Grab	Yearly Average	15
Mercury	1.3	Grab	Yearly Average	0.6
Molybdenum	11	Grab	Yearly Average	5.0
Nickel	37	Grab	Yearly Average	6.0
Selenium	<PQL	Grab	Yearly Average	15
Zinc	1280	Grab	Yearly Average	18
Ammonium-Nitrogen				
Nitrate-Nitrogen				
Total Kjeldahl Nitrogen	37,167	Grab	Yearly Average	

2. Enter the estimated or determined percent solids of the sewage sludge when sampled for the above analysis: 19 %

Treatment Provided for Sewage Sludge at the Facility

1. Which class of pathogen reduction does the sewage sludge meet at the facility? (As defined in 40 CFR Part 503)

Class A

Alternative A1 - Time and Temperature

Alternative A2 - Alkaline Treatment

Alternative A3 - Analysis and Operation

Alternative A4 - Analysis Only

Alternative A5 - Processes to Further Reduce Pathogens (PFRP)

Heat Drying	Thermophilic Aerobic Digestion	Heat Treatment
Pasteurization	Gamma Ray Irradiation	Beta Ray Irradiation
Composting		

Alternative A6 - PFRP Equivalent _____

Class B

X Alternative B1 - Fecal Coliform Count

Alternative B2 - Process to Significantly Reduce Pathogens (PSRP)

Aerobic Digestion	Air Drying	X Anaerobic Digestion
Composting	X Lime Stabilization	

Alternative B3 - PSRP Equivalent _____

Neither or Unknown

Vector Attraction Control

X Option 1 - Minimum 38% Reduction in Volatile Solids
Option 2 - Anaerobic Processes, with Bench-Scale Demonstration of Volatile Solids Reduction
Option 3 - Aerobic Processes, with Bench-Scale Demonstration of Volatile Solids Reduction
Option 4 - Specific Oxygen Uptake Rate (SOUR) for Aerobically Digested Sludge
Option 5 - Aerobic Processes plus Elevated Temperature
Option 6 - Raised pH to 12 and Retained at 11.5
Option 7 - 75% Solids with no Unstabilized Solids
Option 8 - 90% Solids with Unstabilized Solids
Option 9 - Injection Below Land Surface
X Option 10 - Incorporation into Soil within 6 or 8 Hours
Option 11 Covering Active Sewage Sludge Unit Daily
None of the Above

Groundwater Monitoring

1. If disposal practice is surface disposal or land application, is groundwater monitoring required or performed at the site?

Yes
X No

(If yes, please submit a copy of the groundwater monitoring reports along with this survey. Also please provide the approximate depth to groundwater and the groundwater monitoring procedures used to obtain the data.)

Land Application of Sewage Sludge

Answer the following questions if sewage sludge is applied to land.

1. If sewage sludge is land applied in bulk form, what type of crop or other vegetation is grown on this site?

Tifton Bermuda Grass and Ryegrass

2. If sewage sludge is land applied in bulk form, what is the nitrogen requirement for this crop or vegetation?

600 lbs/acre/year (reclamation site)

3. If sewage sludge is land applied in bulk form, briefly describe the nature of any complaints filed from neighbors?

No complaints have been received

Note: Permittees that submitted the "Annual Report Review Form" for sludge to the EPA may submitt a copy with the MWPP in lieu of this Attachment.

Valley Creek Wastewater Treatment Plant

ATTACHMENT 4 – Plant and Collection System

Personnel Inventory

PLANT AND COLLECTION SYSTEM PERSONNEL INVENTORY

FACILITY NAME: Valley Creek WWTP PLANT GRADE: IV

PERMIT NUMBER: AL0023655

PLANT SUPERINTENDENT: Robby Bennett TEL. # (205) 428-2614

SYSTEM MANAGER: David Denard TEL. # (205) 325-5979

PLANT OPERATORS:

	NAME	GRADE OR TRAINEE STATUS	OPERATOR NO.	EXP. DATE
1.	Robby Bennett	IV	C001594	9/30/2015
2.	David Humphryes	IV	C000819	12/31/2014
3.	Luelliot Maneice	IV	C000819	8/31/2015
4.	Kevin Waters	IV	C002962	11/30/2015
5.	Warren Gooden	IV	C000519	3/31/2015
6.	Glenda Waldrop	IV	C003017	11/30/2015
7.	Brigitte Akins	IV	C001557	11/30/2015
8.	Jason Bates	IV	C006032	11/30/2014
9.	Warren Burns	IV	C006163	5/31/2014
10.	Larry Cleckler	IV	C002038	11/30/2015

COLLECTION SYSTEM OPERATORS:

1.				
2.				
3.				
4.				

	MAN HRS./WK	NUMBER
MANAGEMENT/SUPERVISOR	240	6
OPERATOR(S):		
GRADE I-C	160	4
GRADE I		
GRADE II		
GRADE III		
GRADE IV	720	18
DESIGNATED TRAINEE(S)	760	19
LABORATORY	40	1
MAINTENANCE	320	8
OTHER PLANT WORKERS	40	1

AVERAGE NUMBER OF EMPLOYEES PER SHIFT:

		START TIME
1ST	4	0
2ND	27	800
3RD	5	1600

OPERATOR SHIFTS NORMALLY WORKED EACH DAY:

	SUN	MON	TUES	WED	THURS	FRI	SAT
1ST	X	X	X	X	X	X	X
2ND	X	X	X	X	X	X	X
3RD	X	X	X	X	X	X	X

ADEM USE ONLY

	YES	NO
1. DOES PLANT OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		
2. DOES COLLECTION SYSTEM OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		

PLANT AND COLLECTION SYSTEM PERSONNEL INVENTORY

FACILITY NAME: Valley Creek WWTP PLANT GRADE: IV

PERMIT NUMBER: AL0023655

PLANT SUPERINTENDENT: Robby Bennett TEL. # (205) 428-2614

SYSTEM MANAGER: David Denard TEL. # (205) 325-5979

PLANT OPERATORS:

	NAME	GRADE OR TRAINEE STATUS	OPERATOR NO.	EXP. DATE
1.	William Doss	IV	C005868	5/30/2013
2.	Michael Gaines	IV	C000725	11/30/2015
3.	Mary Hardisty	IV	C000374	8/31/2016
4.	Heath Hinch	IV	C001149	8/31/2016
5.	Robert Myers	IV	C005721	9/30/2014
6.	Neal Poole	IV	C006958	7/31/2014
7.	James Rogers	IV	C002364	11/30/2015
8.	Joel Waldrop	IV	C003020	11/30/2015
9.		Trainee		
10.	Kenneth Bush	Trainee		

COLLECTION SYSTEM OPERATORS:

1.				
2.				
3.				
4.				

	MAN HRS./WK	NUMBER
MANAGEMENT/SUPERVISOR	240	6
OPERATOR(S):		
GRADE I-C	160	4
GRADE I		
GRADE II		
GRADE III		
GRADE IV	720	18
DESIGNATED TRAINEE(S)	760	19
LABORATORY	40	1
MAINTENANCE	320	8
OTHER PLANT WORKERS	40	1

AVERAGE NUMBER OF EMPLOYEES PER SHIFT:

1ST	4
2ND	27
3RD	5

START TIME
0
800
1600

OPERATOR SHIFTS NORMALLY WORKED EACH DAY:

	SUN	MON	TUES	WED	THURS	FRI	SAT
1ST	X	X	X	X	X	X	X
2ND	X	X	X	X	X	X	X
3RD	X	X	X	X	X	X	X

ADEM USE ONLY

	YES	NO
1. DOES PLANT OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		
2. DOES COLLECTION SYSTEM OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		

PLANT AND COLLECTION SYSTEM PERSONNEL INVENTORY

FACILITY NAME: Valley Creek WWTP PLANT GRADE: IV

PERMIT NUMBER: AL0023655

PLANT SUPERINTENDENT: Robby Bennett TEL. # (205) 428-2614

SYSTEM MANAGER: David Denard TEL. # (205) 325-5979

PLANT OPERATORS:

	NAME	GRADE OR TRAINEE STATUS	OPERATOR NO.	EXP. DATE
1.	Doug Carter	Trainee		
2.	Ed Crumley	Trainee		
3.	John Ellard	Trainee		
4.	Keith Frederick	Trainee		
5.	Malcolm Glass	Trainee		
6.	Earl Harper	Trainee		
7.	Jeff Hill	Trainee		
8.	Danny Hill	Trainee		
9.	Joshua Hughes	Trainee		
10.	Donald Kelly	Trainee		

COLLECTION SYSTEM OPERATORS:

1.				
2.				
3.				
4.				

	MAN HRS./WK	NUMBER
MANAGEMENT/SUPERVISOR	240	6
OPERATOR(S):		
GRADE I-C	160	4
GRADE I		
GRADE II		
GRADE III		
GRADE IV	720	18
DESIGNATED TRAINEE(S)	760	19
LABORATORY	40	1
MAINTENANCE	320	8
OTHER PLANT WORKERS	40	1

AVERAGE NUMBER OF EMPLOYEES PER SHIFT:

		START TIME
1ST	4	0
2ND	27	800
3RD	5	1600

OPERATOR SHIFTS NORMALLY WORKED EACH DAY:

	SUN	MON	TUES	WED	THURS	FRI	SAT
1ST	X	X	X	X	X	X	X
2ND	X	X	X	X	X	X	X
3RD	X	X	X	X	X	X	X

ADEM USE ONLY

	YES	NO
1. DOES PLANT OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		
2. DOES COLLECTION SYSTEM OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		

PLANT AND COLLECTION SYSTEM PERSONNEL INVENTORY

FACILITY NAME: Valley Creek WWTP PLANT GRADE: IV

PERMIT NUMBER: AL0023655

PLANT SUPERINTENDENT: Robby Bennett TEL. # (205) 428-2614

SYSTEM MANAGER: David Denard TEL. # (205) 325-5979

PLANT OPERATORS:

	NAME	GRADE OR TRAINEE STATUS	OPERATOR NO.	EXP. DATE
1.	Vince Leroy	Trainee		
2.	Herman McClain	Trainee		
3.	Percy Mims	Trainee		
4.	Emma Pleasant	Trainee		
5.	John Rockett	Trainee		
6.	Belinda Sexton	Trainee		
7.	Jason Sims	Trainee		
8.				
9.				
10.				

COLLECTION SYSTEM OPERATORS:

1.	Brian Champion	I (c)	C002094	6/30/2015
2.	Don Goodwin	I (c)	C005423	6/30/2015
3.	Lavon Evans	I (c)	C004631	12/31/2014
4.	Brian Rohling	I (c)	C005418	6/30/2015

	MAN HRS./WK	NUMBER
MANAGEMENT/SUPERVISOR	240	6
OPERATOR(S):		
GRADE I-C	160	4
GRADE I		
GRADE II		
GRADE III		
GRADE IV	720	18
DESIGNATED TRAINEE(S)	760	19
LABORATORY	40	1
MAINTENANCE	320	8
OTHER PLANT WORKERS	40	1

AVERAGE NUMBER OF EMPLOYEES PER SHIFT:

1ST	4
2ND	27
3RD	5

START TIME
0
800
1600

OPERATOR SHIFTS NORMALLY WORKED EACH DAY:

	SUN	MON	TUES	WED	THURS	FRI	SAT
1ST	X	X	X	X	X	X	X
2ND	X	X	X	X	X	X	X
3RD	X	X	X	X	X	X	X

ADEM USE ONLY

	YES	NO
1. DOES PLANT OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		
2. DOES COLLECTION SYSTEM OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		

PLANT AND COLLECTION SYSTEM PERSONNEL INVENTORY

FACILITY NAME: Sewer Line Maintenance PLANT GRADE: IV

PERMIT NUMBER:

PLANT SUPERINTENDENT: TEL. # (205) 540-7585

SYSTEM MANAGER: David Denard TEL. # (205) 325-5979

PLANT OPERATORS:

	NAME	GRADE OR TRAINEE STATUS	OPERATOR NO.	EXP. DATE
1.	Brian Champion	I (c)	C002094	6/30/2015
2.	Don Goodwin	I (c)	C005423	6/30/2015
3.	Lavon Evans	I (c)	C004631	12/31/2014
4.	Brian Rohling	I (c)	C005418	6/30/2015
5.				
6.				
7.				
8.				
9.				
10.				

COLLECTION SYSTEM OPERATORS:

1.				
2.				
3.				
4.				

	MAN HRS./WK	NUMBER
MANAGEMENT/SUPERVISOR		
OPERATOR(S):		
GRADE I-C		
GRADE I		
GRADE II		
GRADE III		
GRADE IV		
DESIGNATED TRAINEE(S)		
LABORATORY		
MAINTENANCE		
OTHER PLANT WORKERS		

AVERAGE NUMBER OF EMPLOYEES PER SHIFT:

		START TIME
1ST		
2ND		
3RD		

OPERATOR SHIFTS NORMALLY WORKED EACH DAY:

	SUN	MON	TUES	WED	THURS	FRI	SAT
1ST							
2ND							
3RD							

ADEM USE ONLY

	YES	NO
1. DOES PLANT OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		
2. DOES COLLECTION SYSTEM OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		

Municipal Water Pollution Prevention (MWPP) Annual Report Calendar Year 2013

For the

Village Creek WWTP

as required by the
Alabama Department of Environmental Management NPDES Program

Prepared by
Jefferson County Commission
Environmental Services Department

May 31, 2014

JEFFERSON COUNTY COMMISSION

DAVID CARRINGTON - PRESIDENT
GEORGE F. BOWMAN
SANDRA LITTLE BROWN - PRESIDENT PRO TEMPORE
T. JOE KNIGHT
JAMES A."JIMMIE" STEPHENS

DAVID CARRINGTON – COMMISSIONER
ENVIRONMENTAL SERVICES

TONY PETELOS, COUNTY MANAGER

Office of

DAVID DENARD
Director of Environmental Services
Suite A-300
716 Richard Arrington, Jr. Blvd. N.
Birmingham, Alabama 35203
Telephone (205) 325-5496
Fax (205) 325-5981

May 31, 2014

Mr. Nic Caraway
Alabama Department of Environmental Management
Water Division – Municipal Branch
P.O. Box 301463
Montgomery, AL 36130-1463

RE: Municipal Water Pollution Prevention (MWPP)
Annual Report Calendar Year 2013

Mr. Caraway:

The Jefferson County Environmental Services Department submits the above referenced report for the Village Creek Wastewater Treatment Facility, NPDES Permit No. AL0023647. Included is information as required in ADEM Form 41701/06ml, bypass/overflow event reports, MWPP Sewage Sludge Survey, and the Plant & Collection System Personnel Inventory.

If you have any questions regarding this information, please contact me at 205.325.5979 or Celeste Brown at Jefferson County Barton Laboratory at 205.238.3859.

Sincerely,

David Denard, Director
Environmental Services Department

pc: Celeste Brown, JCESD Barton Laboratory
Daniel White, JCESD Deputy Director
Greg James, Village Creek WWTP

MUNICIPAL WATER POLLUTION PREVENTION (MWPP)

ANNUAL REPORT

SUBMITTED BY:

TREATMENT FACILITY: Village Creek WWTP NPDES #: AL0023647

MUNICIPALITY: Jefferson County COUNTY: Jefferson

CONTACT PERSON: David Denard
Municipal Official

Director, Environmental Services Department
Title

Telephone #: 205-327-8232 Fax #: 205-325-5981

Email Address: denardd@jccal.org

CHIEF OPERATOR: Greg James
Name

Telephone #: 205-791-6405 Fax #: 205-791-3030

Email Address: jamesgr@jccal.org

Date: May 14, 2014

REVIEWED BY: Daniel White P.E., ESD Engineer
Consulting Engineer

Telephone #: 205-214-8610 Fax #: 205-325-5239

Date: May 14, 2014

MWPP Annual Report
Information Source List

The following information will be needed to complete the compliance maintenance report that covers the calendar year of 2013 (due **May 31,** 2014).

Part 1 A. The average plant influent flow for each month (million gallons per day/MGD) during the year.
B. The average plant influent BOD (CBOD) for each month (mg/l and lb/day) in the year.
C. The plant's average design flow (MGD) and design BOD loading (lbs/day).

Part 2 A. The monthly average permit and DMR effluent concentration for BOD (CBOD), TSS, NH3-N, and/or TKN in mg/l for the year
B. The monthly average effluent limits and DMR loading for BOD, TSS, NH3-N, and/or TKN in lbs/day for the year

Part 3 The age of the treatment plant defined as the number of years since the last major reconstruction to increase the organic or hydraulic capacity of the plant. The last calendar year minus the year the new construction was brought on-line.

Part 4 Bypass and overflow information. This is the number of bypass or overflow events of untreated wastewater due to heavy rain or equipment failure whether intentional or inadvertent from all collection systems tributary to the treatment facility.

Part 5 A. Describe the characteristics and quantity of sludge generated.
B. If sludge is landspread, how many months of sludge storage does the plant have? This should include on-site and off-site storage from the treatment plant. The digestor capacity may be used in the calculation.

Part 6 A. Sludge Disposal Method
B. The number of approved land disposal sites for sludge available, and how many months or years these disposal sites will these be available for use.

Part 7 The number of sewer extensions installed in the community last year--the design population, design flow, and design BOD for each sewer extension.

Part 8 Operator Certification

Part 9 Financial Status

Part 10 Subjective Evaluation

Part 11 Summary Sheet

State of Alabama
MWPP Annual Report
Department of Environmental Management

Instructions to the Operator-in-Charge

1. Complete all sections of the MWPP Report to the best of your ability.

2. Parts 1 through 8 contain questions for which points will be generated. These points are intended to communicate to the Department and the governing body or owner the actions necessary to prevent effluent violations. Enter the point totals from Parts 1 through 8 on Part 11: Summary Sheet.

3. Add the point totals on Part 11: Summary Sheet.

4. Submit the MWPP Report to the governing body and the consulting engineer and owner for review and approval.

5. The governing body should pass a resolution which contains the following points:

   a. The resolution should acknowledge the governing body or owner has reviewed the MWPP Report.

   b. The resolution should indicate what actions will be taken to prevent effluent violations.

   c. The resolution should provide any other information the governing body or owner deems appropriate.

6. **The MWPP Report and the resolution must be submitted by May 31st to Municipal Section, Water Division, ADEM, P.O. Box 301463, Montgomery, AL 36130-1463.**

Facility Name: Village Creek WWTP

Part 1: Influent Loading/Flows

A. List the average monthly volumetric flows and BOD_5 ($CBOD_5$) loadings received at your facility during the last calendar year.

Month	Column 1 Average Monthly Flowrate (MGD) 001	002	Column 2 Average Monthly BOD_5 ($CBOD_5$) Concentration (mg/l)		Column 3 Average Loading BOD_5 ($CBOD_5$) (lbs/day**)	
January	33	25	37	18	8548	3773
February	34	25	33	15	8850	3382
March	23	18	48	27	7420	4166
April	21	17	35	25	5928	3877
May	24	15	59	22	8616	2659
June	28	12	72	26	16830	2746
July	20	12	58	24	10691	2514
August	22	8.3	53	17	10003	1240
September	19	8.7	78	46	12244	3456
October	17	8.5	110	56	15441	4222
November	18	9.9	110	57	15305	4855
December	24	15	41	19	6862	2757
Annual Avg.	24	14	61	29	10562	3304

**As reported on NPDES Discharge Monitoring Reports (DMRs) and as required by EPA's NPDES Self-Monitoring System, User Guide, March 1985.

B. List the average design flow and average design BOD_5 loading for the facility below. If you are not aware of these design quantities, contact your consulting engineer or the Alabama Department of Environmental Management.

	Average Design Flow		Average Design BOD_5 Loading (lbs/day)	
Design Criteria	60.0	60.0	70056	70056
90% of the Design Criteria	54.0	54.0	63050	63050

C. How many times did the monthly flow (Column 1) to the WWTP exceed 90% of design flow? _____ (Check the appropriate point total)

☑ 0 - 4 = 0 points ☐ 5 or more = 5 points

D. How many times did the monthly flow (Column 1) to the WWTP exceed the design flow? ____ (Check the appropriate point total)

☑ 0 = 0 points ☐ 1 - 2 = 5 points ☐ 3 - 4 = 10 points ☐ 5 or more = 15 points

E. How many times did the monthly BOD_5 (or $CBOD_5$)* loading (lbs/day) (Column 3) to the WWTP exceed 90% of the design loading? ____ (Check the appropriate point total)

☑ 0 - 1 = 0 points ☐ 2 - 4 = 5 points ☐ 5 or more = 10 points

F. How many times did the monthly BOD_5 (or $CBOD_5$)* loading (lbs/day) (Column 3) to the WWTP exceed the design loading? _____ (Check the appropriate point total)

☑ 0 = 0 points ☐ 1 = 10 points ☐ 2 = 20 points ☐ 3 = 30 points ☐ 4 = 40 points ☐ 5 or more = 50 points

G. Enter each point value marked for Cthrough F and enter the sum in the appropriate blank below.

C points = 0_____

D points = 0_____

E points = 0_____

F points = 0_____

TOTAL POINTS VALUE OR PART 1 0_____
Enter this value on Part 11: Summary Sheet.

*To obtain equivalent BOD_5 loading for comparison with design loading for those permittees using influent $CBOD_5$, divide annual average $CBOD_5$, loading in lbs/day from Part 1, A by 0.7.

Facility Name: Village Creek WWTP

Part 2: Effluent Quality/Plant Performance

A. List the monthly average permit limits for the facility in the blanks below and the average monthly effluent DMR BOD_5, ($CBOD_5$) TSS, NH_3-N and/or TKN concentration produced by the facility during the last calendar year.

(1) NPDES Permit Concentration

	Months	BOD_5 ($CBOD_5$) (mg/l)	TSS (mg/l)	NH_3-N (mg/l)	TKN (mg/l)
Permit Limit	May-Nov.	4.0	24.0	1.0	Report
	Dec. -Apr.	6.0	24.0	1.0	Report

(2) DMR Concentration

Qtr	Month	BOD_5 ($CBOD_5$) (mg/l)		TSS (mg/l)		NH_3-N (mg/l)		TKN (mg/l)	
1	January	0.95	0.56	1.5	0.67	0.01	0.003	0.60	0.15
	February	1.0	0.58	1.5	0.33	0.01	0.00	0.51	0.25
	March	0.95	0.70	1.9	0.40	0.02	0.002	0.47	0.30
2	April	0.66	0.57	2.2	0.57	0.01	0.01	0.56	0.19
	May	0.55	0.51	3.0	0.94	0.01	0.01	0.71	0.32
	June	0.84	0.46	2.5	0.79	0.02	0.02	0.45	0.40
3	July	0.83	0.64	2.4	0.46	0.05	0.08	0.26	0.19
	August	0.68	0.56	2.0	0.31	0.01	0.004	1.00	0.3
	September	0.79	0.46	2.2	0.39	0.08	0.08	0.85	0.37
4	October	0.95	0.49	2.0	0.67	0.05	0.04	0.76	0.41
	November	1.2	1.1	2.9	1.3	0.03	0.01	1.10	0.4
	December	0.93	0.65	2.2	0.56	0.03	0.03	0.42	0.22
	Annual Avg.	0.86	0.61	2.2	0.61	0.03	0.02	0.64	0.29

B. List the monthly average permit limit and DMR loadings below.

(1) NPDES Permit Loading

	Months	BOD_5 ($CBOD_5$) (lbs/day)	TSS (lbs/day)	NH_3-N (lbs/day)	TKN (lbs/day)
Permit Limit	May-Nov.	2001	12009	500	Report
	Dec.-Apr.	3002	12009	500	Report

(2) DMR Loading

Qtr	Month	BOD_5 ($CBOD_5$) (lbs/day)	TSS (lbs/day)	NH_3-N (lbs/day)	TKN (lbs/day)
1	January	389	648	3.2	419
	February	424	462	2.2	133
	March	288	537	2.8	81
2	April	197	438	2.8	101
	May	153	620	1.9	140
	June	244	690	7.1	215
3	July	220	495	17.2	56
	August	163	397	1.7	178
	September	166	397	18.6	156
4	October	170	330	10.1	134
	November	313	607	6.0	162
	December	280	548	11.3	94
	Annual Avg.	251	514	7.1	156

C. During the past year did the BOD_5 concentration (mg/l) and/or loading (lbs/day) exceed the product of 1.4 times the monthly average permit limit during two months of any consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

D. During the past year did the BOD_5 concentration (mg/l) and/or loading (lbs/day), exceed the monthly average permit limit during four months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

E. During the past year did the effluent TSS concentration (mg/l) or loading (lbs/day) exceed the product of 1.4 times the monthly average permit limit during two months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

F. During the past year did the TSS concentration (mg/l) and/or loading (lbs/day) exceed the monthly average permit limit during four months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

G. During the past year did the NH_3-N or TKN concentration (mg/l) and/or loading (lbs/day) exceed the product of 1.4 times the monthly average permit limit during two months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

H. During the past year did either the NH_3-N or TKN concentration (mg/l) and/or loading (lbs/day), exceed the monthly average permit limit during four months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

I. Enter each point value checked for C through H in the blanks below.

C Points = 0
D Points = 0
E Points = 0
F Points = 0
G Points = 0
H Points = 0

HIGHEST INDIVIDUAL POINT VALUE FOR PART 2 (C-H) 0 (HIGHEST POINT = 121)
Enter this value on Part 11: Summary Sheet.

Facility Name: Village Creek WWTP

Part 3: Age of the Wastewater Treatment Facility

A. What year was the wastewater treatment plant constructed or last reconstructed? 2004

Subtract the above answer from the report year to determine age:

Age = (Last Calendar year) - (Answer to A)

Age 9 = (2013) - (2004)

Enter Age in Part C below.

B. Check the type of treatment facility employed.

		Factor
x	Mechanical Treatment Plant	2.0
_____	Aerated Lagoon	1.5
_____	Stabilization Pond	1.0
_____	Other (Specify:_____)	1.0

C. Multiply the factor listed next to the type of the facility your community employs by the age of your facility to determine the total point value for Part 3:

2.0 (Factor) x 9 (Age) = 18 TOTAL POINT VALUE FOR PART 3

Enter the above value on Part 11: Summary Sheet. If the total point value exceeds 40, enter 40 on Part 11: Summary Sheet.

Facility Name: Village Creek WWTP

Part 4: Bypassing and Overflows

A. How many bypass or overflow events of untreated wastewater occurred in the last year at the WWTP due to heavy rain? 0

B. How many bypass or overflow events of untreated wastewater occurred in the last year prior to the headworks of the WWTP due to heavy rain? 2

C. How many of the bypass or overflow events listed in Parts A and B have been corrected such that future bypass or overflow events at the same location due to heavy rain are not anticipated? 2

D. Add together Answers A and B and subtract Answer C from that total.
A + B – C = _____ (Check the appropriate point total.)

☑ 0 = 0 points ☐ 1 = 5 points ☐ 2 = 10 points ☐ 3 = 15 points ☐ 4 = 20 points ☐ 5 = 25 points ☐ 6 = 30 points
☐ 7 = 35 points ☐ 8 = 40 points ☐ 9 = 45 points ☐ 10 = 50 points ☐ 11 or more = 100 points

E. How many bypass or overflow events of untreated wastewater occurred in the last year at the WWTP due to equipment failure? (This includes clogged/broken lines or manholes.) 0

F. How many bypass or overflow events of untreated wastewater occurred in the last year due to equipment failure prior to the headworks of the WWTP? (This includes clogged/broken lines or manholes.) 40

G. How many of the bypass or overflow events listed in Parts E and F have been corrected such that future bypass or overflow events at the same location due to the same equipment failure are not anticipated? 40

H. Add together Answers E and F and subtract Answer G from that total.
E + F - G = _____ (Check the appropriate point total.)

☐ 0 = 0 points ☐ 1 = 5 points ☑ 2 = 10 points ☐ 3 = 15 points ☐ 4 = 20 points ☐ 5 = 25 points ☐ 6 = 30 points
☐ 7 = 35 points ☐ 8 = 40 points ☐ 9 = 45 points ☐ 10 = 50 points ☐ 11 or more = 100 points

I. Add point values circled in D and H and enter the total in the blank below.

TOTAL POINT VALUE FOR PART 4 10
Enter this value on Part 11: Summary Sheet.

All bypass or overflow events that have occurred in the last year (for any reason) must be individually reported with this MWPP report.

Facility Name: Village Creek WWTP

Part 5: Sludge Quantity and Storage

A. Please provide information concerning sludge quantity, characteristics, and storage practices based on available data as requested on the *MWPP Sewage Sludge Survey,* ADEM Form 419.

B. How many months of sludge storage capacity does the wastewater treatment facility have available, either on-site or off-site? (i.e., How many months can the facility operate without land spreading or disposing of sludge?) >4

(Check the appropriate point total.)

Greater than or equal to 4 months	= 0 points	☑
Less than 4 months, but greater than or equal to 3 months	= 10 points	☐
Less than 3 months, but greater than or equal to 2 months	= 20 points	☐
Less than 2 months, but greater than or equal to 1 month	= 30 points	☐
Less than one month	= 50 points	☐

TOTAL POINT VALUE FOR PART 5 0
Enter this value on Part 11: Summary Sheet.

Part 6: Sludge Disposal Practices and Sites

A. Please provide the sludge disposal practices and site information based on available data as requested on the *MWPP Sewage Sludge Survey,* ADEM Form 419.

B. How many months or years does the facility have access to and approval for sufficient land disposal sites to provide proper land disposal? (Check the appropriate point total.)

36 or more months	= 0 points	☐
24 - 35 months	= 10 points	☐
12 - 23 months	= 20 points	☑
6 - 11 months	= 30 points	☐
Less than 6 months	= 50 points	☐

TOTAL POINT VALUE FOR PART 6 20
Enter this value on Part 11: Summary Sheet.

Facility Name: Village Creek WWTP

Part 7: New Development

Are there any major new developments (industrial, commercial, or residential) in the last calendar year or anticipated in the next 2-3 years such that either flow or BOD_5 loadings to the sewage system could significantly increase? Estimate additional loadings below.

Design Population: Equivalent (PE)	Design Flow: MGD	Design BOD_5: lbs/day

List industrial and/or residential developments.

No major new developments planned.

Will the additional loading overload the plant? (Check the appropriate point total.)

No = 0 points ☑ Yes = 121 points ☐

Enter the point total in the blank below.

TOTAL POINT VALUE FOR PART 7 0 (highest point total = 121)
Enter this value on Part 11: Summary Sheet.

Part 8: Operator Certification

Complete the *Plant and Collection System Personnel Inventory,* ADEM Form 441.

Do both the plant operator and collection system staffing comply with ADEM Administrative Code; Division 10, Operator Certification Program? (Check the appropriate point total.)

Yes = 0 points ☑ No = 121 points ☐

TOTAL POINT VALUE FOR PART 8 0 (highest point total = 121)
Enter this value on Part 11: Summary Sheet.

Facility Name: Village Creek WWTP

Part 9: Financial Status

A. Are User-Charge Revenues sufficient to cover operation and maintenance expenses? If no, how are O&M costs being financed? ***Include user charge rates***.

Revenues are sufficient. The below values are based on a 5/8" meter and 6,000 gallons water use. Jefferson County has a three tier block rate structure for residential users for 0-3, 4-6, and 7+ ccf water use.

Residential Minimum 15.00 Plus rate 6.02; 9.36; 10.69 /1,000 gal.

Industrial Minimum 15.00 Plus rate 10.51 /1,000 gal.

Monthly residential rate based on 6,000 gallons usage $ 56.04 (includes 15% credit for residential)

Please complete the above information based on your user charge rates for the report year. You may attach a sample water and sewer bill for clarity.

B. What financial resources are available to pay for the wastewater improvements and/or reconstruction needs?

In 2013, Jefferson County issued Series 2013 Sewer Warrants that fund capital improvements through 2023 at an annual average rate of $71.9 million over the 10-year period.

Part 10: Subjective Evaluation

A. Describe briefly the physical and structural conditions of the wastewater treatment facility.

The 002 WWTP was constructed in 2004 and is in good condition. Some equipment and processes were constructed or upgraded in the 1970s, 80s, and 90s and are in fair to average condition. Maintenance and refurbishments are planned for assets needing improvements.

B. Describe the general condition of the sewer system (sewer lines, manholes, lift stations).

The Village system includes roughly 3,460,000' of pipe and 24 pump stations. The system's rate of SSO's/100 miles of sewer is above the department's goal. There are no known capacity deficiencies. The general condition of the system is fair.

C. What sewage system improvements does the community have planned for construction in the next 5 years?

Construction work began in October 2013 to rehab 001 Plant bar screens , final settling tanks, dewatering building improvements, and 002 plant U.V. disinfection system upgrades. This project will end in October 2014. See attachment for additional planned work..

D. What is the theoretical design life of the plant, and what is the estimated remaining useful life of the wastewater treatment facility?

Calculated remaining useful life of the structures is 50 years - years age of facility.

Calculated remaining useful life of the equipment is 25 years - years age of equipment.

Based on EPA's 2002 Clean Water and Drinking Water Infrastructure Gap Analysis Report.

E. What problems, if any, over the last year have threatened treatment or conveyance within the system?

The primary cause of SSO's was blockage from grease. These occured in residential areas.

F. Is the community presently involved in formal planning for treatment facility upgrading?

No.

G. How many days in the last year were there residential backups at any point in the collection system for any reason other than clogging of the lateral connection? 16

H. Does the plant have a written plan for preventive maintenance on major equipment items? If yes, describe.

Yes. O & M Manuals are used for all equipment maintenance schedules. Preventive maintenance schedules are input into the INFOR maintenance system and PM work orders are automatically generated. All equipment PM schedules and records are maintained in the INFOR system.

Village Creek

Part 10.C

Planned improvements at the Fairmont and Harrimon pump stations include wetwell rehabilitation, increased pumping capacity, piping repairs, updated electrical components and control panels. Pump replacement is planned for the Lewisburg #1 pump station.

I. Does this preventive maintenance program depict frequency of intervals, types of lubrication, and other preventive maintenance tasks necessary for each piece of equipment? (Check the appropriate response.) Yes ☑ No ☐

J. Are these preventive maintenance tasks, as well as equipment problems, being recorded and filed so future maintenance problems can be assessed properly? (Check the appropriate response.) Yes ☑ No ☐

K. Describe any major repairs or mechanical equipment replacement made in the last year and include the approximate cost for those repairs. Do not include major treatment plant construction or upgrading programs.

Rebuild of Dewatering cake pumps - $299,760

Lightning Protection for emergency generators- $31,368

Generator Controls Upgrade - $28,125

L. List any additional comments. (Attach additional sheets if necessary.)

Facility Name: Village Creek WWTP

Part 11: Summary Sheet

1. Enter in the values from Parts 1 through 8 in the left column below. Add the numbers in the left column to determine the MWPP Report point total the wastewater system generated for the previous calendar year.

Actual Values	Maximum Possible
Part 1 0 points	80 points
Part 2 0 points	121 points
Part 3 18 points	40 points
Part 4 10 points	200 points
Part 5 0 points	50 points
Part 6 20 points	50 points
Part 7 0 points	121 points
Part 8 0 points	121 points
Total 48 points	783 points

2. Check the facility type that best describes the plant's treatment and disposal of wastewater.

- [✓] Mechanical plant with surface water discharge
- [ ] Aerated Lagoon or stabilization pond with surface water discharge
- [ ] Mechanical plant using land disposal of liquid wastes
- [ ] Aerated Lagoon or stabilization pond using land disposal of liquid wastes

3. Check the range that describes the action needed to address problems identified in the report.

- [✓] 0 - 70 pts. Actions as Appropriate*
- [ ] 71 - 120 pts. Departmental Recommendation Range*
- [ ] 121 – 783 Municipality Action Range*

***Other actions may be required by NPDES outside the scope of this report.**

4. Complete the *Municipal Water Pollution Prevention Resolution Form*, ADEM Form 418.

5. In Question 1, do any of the actual point values in the left column equal the maximum possible points in the right column? (Check the appropriate response) Yes ☐ No ☑

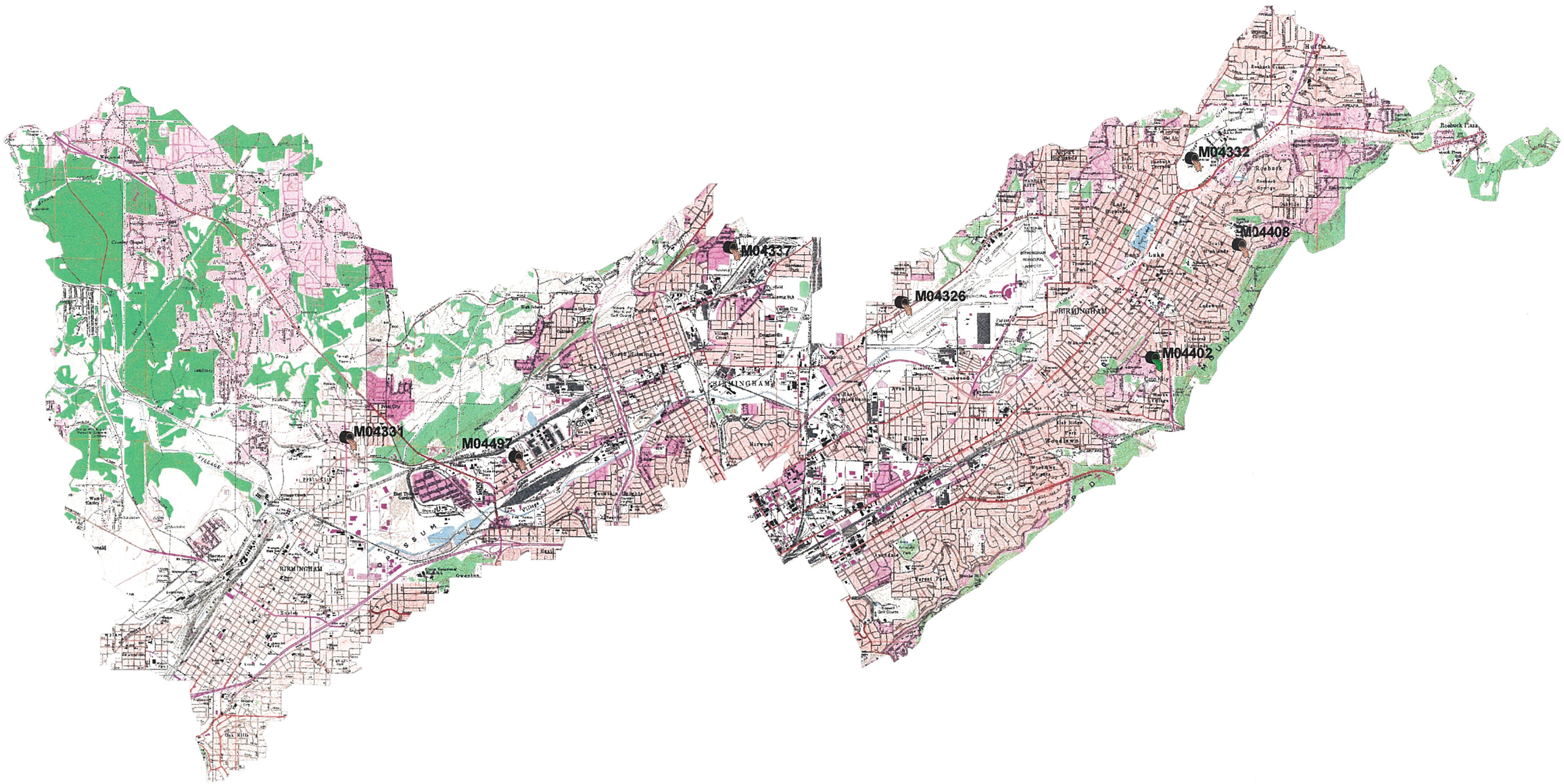
If yes, provide a written explanation for this situation in the space below.

Village Creek Wastewater Treatment Plant

ATTACHMENT 2 – Raw Sewage Bypass and

SUMMARY

VILLAGE CREEK BASIN 2013 DISCHARGES



NOTE: OVERFLOWS SHOWN ARE OVER 10,000 GALLONS.

JEFFERSON COUNTY
ENVIRONMENTAL SERVICES
PLOTTED: 2-11-14

Summary of Unpermitted Discharges - Village Creek

January 01, 2013 through December 31, 2013

NOTE: Quantities shown in the column "Est. Volume" are ESTIMATED ONLY. These estimates are the County's best determination of the discharge volume, based upon site-determinable information and accepted estimating methods. However, such estimates are subject to a high number of variables which are completely beyond the County's control and which can have a significant effect upon the calculated amount. Therefore, these estimates are to be used for relative comparison only, not as actual discharge volumes.

Event No.	Date Reported	Location	Collection System	Ultimate Destination	Est. Vol. (gal)	Source	Cause	Weather	Action Taken	Person Reporting	Title
C01082	6/12/13	3999 14th Ave N	Village - East of WWTP	Storm Drain	9	Hose on back of Combo Truck	Hose came out of manhole while decanting	No Rain	Closed the Valve	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
C01099	10/24/13	2430 Minor Parkway	Village - West of WWTP (Remainder of System)	Ground Absorbed/ Corbet Branch	1,400	Cleanout for Force Main	Cleanout on Force Main	No Rain	Line Repaired	Brian Champion	Sewer Maintenance Supervisor
	Notes: Maintenance crews clearing ROW broke cleanout with cutting equipment.										
M04312	1/4/13	1208 HibernianStreet	Village - West of WWTP (Remainder of System)	Ground Absorbed	367	Cleanout	Grease/ Debris	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04313	1/5/13	316 Half Moon Bend	Village - East of WWTP	Ground Absorbed	5,100	Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04323	1/14/13	4304 43rd Ave N	Village - East of WWTP	Ground Absorbed	708	Cleanout	Grease/ Debris	Light Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04326	1/14/13	43rd St & 38th Ave N	Village - East of WWTP	Storm Drain/ Feeder Creek to Village Creek	125,112	Manhole	Surcharge from Rain	Heavy Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										

NOTE: Quantities shown in the column "Est. Volume" are ESTIMATED ONLY. These estimates are the County's best determination of the discharge volume, based upon site-determinable information and accepted estimating methods. However, such estimates are subject to a high number of variables which are completely beyond the County's control and which can have a significant effect upon the calculated amount. Therefore, these estimates are to be used for relative comparison only, not as actual discharge volumes.

Event No.	Date Reported	Location	Collection System	Ultimate Destination	Est. Vol. (gal)	Source	Cause	Weather	Action Taken	Person Reporting	Title
M04331	1/15/13	#1 Ave W	Village - West of WWTP (Remainder of System)	Ground Absorbed	11,952	Cleanout	Surcharge from Rain	Moderate Rain	Line Monitored	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04332	1/16/13	8920 Roebuck Blvd	Village - East of WWTP	Ground Absorbed/ Village Creek	12,206	Manhole/ Pipe	Grease/ Rags/ Gravity Main Break	Moderate Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04333	1/18/13	540 Gadsden Hwy	Village - East of WWTP	Ground Absorbed	160	Manhole	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04337	1/28/13	3171 44th Ave N	Village - East of WWTP	Storm Drain	13,824	Cleanout	Grease/ Debris	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04354	2/13/13	500 Oakmont St	Village - West of WWTP (Remainder of System)	Storm Drain	2,025	Manhole	Grease/ Rags/ Spray rock	Moderate Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04362	2/26/13	7 41st St N	Village - East of WWTP	Ground Absorbed	395	Drain	Debris	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04365	2/26/13	912 Five Mile Road	Village - East of WWTP	Ground Absorbed	12	Cleanout	Grease/ Roots/ Rags	Light Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04373	3/15/13	564 Antwerp Court S	Village - East of WWTP	Storm Drain	1,168	Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Rohling	Chief Civil Engineer
	Notes:										

NOTE: Quantities shown in the column "Est. Volume" are ESTIMATED ONLY. These estimates are the County's best determination of the discharge volume, based upon site-determinable information and accepted estimating methods. However, such estimates are subject to a high number of variables which are completely beyond the County's control and which can have a significant effect upon the calculated amount. Therefore, these estimates are to be used for relative comparison only, not as actual discharge volumes.

Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*
M04376	3/20/13	925 52nd St N	Village - East of WWTP	Ground Absorbed	2	Cleanout	Roots	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04382	3/25/13	2733 16th Court	Village - East of WWTP	Ground Absorbed	4,075	Manhole	Grease/ Roots/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04383	3/26/13	700 8th St S	Village - East of WWTP	Storm Drain	2,052	Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04385	4/1/13	714 Gene Reed Rd	Village - East of WWTP	Storm Drain	1,184	Manhole	Grease/ Roots/ Debris/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04394	4/12/13	433 Blount St	Village - West of WWTP (Remainder of System)	Ground Absorbed	144	Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04395	4/12/13	4140 Messer Airport Hwy	Village - East of WWTP	Storm Drain	1,428	Manhole	Grease/ Roots/ Debris	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04402	4/19/13	756 71st Pl S	Village - East of WWTP	Ground Absorbed	16,856	Cleanout	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04403	4/23/13	945 Elizabeth Dr	Village - East of WWTP	Ground Absorbed		Cleanout	Grease/ Roots/ Debris/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes: Cleanout not overflowing upon crew arrival, but there was evidence on the ground.										

NOTE: Quantities shown in the column "Est. Volume" are ESTIMATED ONLY. These estimates are the County's best determination of the discharge volume, based upon site-determinable information and accepted estimating methods. However, such estimates are subject to a high number of variables which are completely beyond the County's control and which can have a significant effect upon the calculated amount. Therefore, these estimates are to be used for relative comparison only, not as actual discharge volumes.

Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*
M04404	4/26/13	9248 Brookhurst Dr	Village - East of WWTP	Ground Absorbed	252	Cleanout	Grease/ Roots/ Debris/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04405	4/29/13	600 Biscayne Dr	Village - East of WWTP	Storm Drain	164	Cleanout	Roots	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04408	5/3/13	812 85th St South	Village - East of WWTP	Storm Drain	13,392	Cleanout	Grease/ Roots/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04417	5/18/13	1116 Barnisdale Rd	Village - East of WWTP	Ground Absorbed	4,018	Cleanout	Grease	Heavy Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04418	5/19/13	5712 5th Crt S	Village - East of WWTP	Storm Drain	38	Manhole	Grease/ Roots/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04423	6/3/13	7525 Marks Drive	Village - East of WWTP	Storm Drain	513	Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04431	7/9/13	7525 Marks Dr	Village - East of WWTP	Storm Drain	2,430	Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04441	9/1/13	3040 44th Ave N	Village - East of WWTP	Ground Absorbed/ Storm Drain	6,949	Manhole	Grease	No Rain	Blockage Repaired	Brian Champion	Sewer Maintenance Supervisor
	Notes:										

NOTE: Quantities shown in the column "Est. Volume" are ESTIMATED ONLY. These estimates are the County's best determination of the discharge volume, based upon site-determinable information and accepted estimating methods. However, such estimates are subject to a high number of variables which are completely beyond the County's control and which can have a significant effect upon the calculated amount. Therefore, these estimates are to be used for relative comparison only, not as actual discharge volumes.

Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*
M04444	9/13/13	540 Gadsden Hwy	Village - East of WWTP	Storm Drain	230	Manhole	Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04460	11/4/13	548 & 552 Gadsden Hwy	Village - East of WWTP	Ground Absorbed/ Storm Drain	232	Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04465	11/16/13	749 71st Pl S	Village - East of WWTP	Storm Drain	70	Manhole	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04466	11/19/13	6421 Joppa Court	Village - East of WWTP	Ground Absorbed	184	Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04468	11/22/13	1163 6th St W	Village - East of WWTP	Ground Absorbed	133	Manhole	Grease/ Rags	Light Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04469	11/22/13	13 Avenue W	Village - West of WWTP (Remainder of System)	Ground Absorbed	129	Cleanout	Grease/ Debris	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04482	12/3/13	4020 Messer Airport Hwy	Village - East of WWTP	Storm Drain	115	Manhole	Grease/ Debris	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04483	12/4/13	444 23rd Ave	Village - East of WWTP	Ground Absorbed	270	Cleanout	Grease/ Rags/ Rocks	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										

NOTE: Quantities shown in the column "Est. Volume" are ESTIMATED ONLY. These estimates are the County's best determination of the discharge volume, based upon site-determinable information and accepted estimating methods. However, such estimates are subject to a high number of variables which are completely beyond the County's control and which can have a significant effect upon the calculated amount. Therefore, these estimates are to be used for relative comparison only, not as actual discharge volumes.

Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*
M04486	12/7/13	1009 & 1021 Erie St	Village - West of WWTP (Remainder of System)	Drainage Ditch	1,152	Manhole	Grease/ Rags	Light Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04487	12/9/13	661 Ave W	Village - East of WWTP	Storm Drain	103	Manhole	Grease	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04496	12/18/13	1153 2nd St N	Village - East of WWTP	Drainage Ditch	294	Manhole	Grease/ Rags	No Rain	Blockage Removed	Brian Champion	Sewer Maintenance Supervisor
	Notes:										
M04497	12/18/13	444 23rd Ave W	Village - East of WWTP	Storm Drain	10,200	Cleanout	Gravity Main Break/ Gravel	No Rain	Blockage Removed/Line Repaired	Brian Champion	Sewer Maintenance Supervisor
	Notes:										

Village Creek Wastewater Treatment Plant

ATTACHMENT 3 – MWPP Sewage Sludge

SURVEY

MWPP SEWAGE SLUDGE SURVEY

Facility Background Information:

1. Facility Information — Permit Number: AL0023647

   Name: Village Creek WWTP

   Street Address: 1440 Pleasant Hill Road

   County: Jefferson

2. Facility Contact

   Name: Greg James

   Title: Plant Manager

   Telephone: 205-791-6405

   Permittee Name: Jefferson County Commision

   Mailing Address: Suite A-300 716 Richard Arrington Jr. Blvd N.

   Birmingham, Al 35203

Facility Flow Information

1. Facility Wastewater Treatment Capacity

   Avg. Daily Flow for 2013: 001-23.6 / 002-14.5 MGD

   Facility Design Capacity: 001-60 / 002-60 MGD

2. Estimated Septage Quantity Handled (Residuals Removed from Septic Tank Systems)

   Average Domestic Septage: 245,292 gallons per month

   Average Commercial Septage: 375,409 gallons per month (GREASE)

3. Method of Septage Processing

   X Mixed with Influent Wastewater for Treatment

   ☐ Mixed with Sewage Sludge

   ☐ _____

4. Estimated Percentage Contributing Wastewater Flow

   Residential: 87 %

   Industrial: 8 %

   Other: 5 % Describe: Commercial

5. List type of wastewater treatment process(es) utilized at this facility:

   Screening, Grit Removal, Acctivated Sludge, Clarification

   Chlorination, Dechlorination, Sand filtration, Uv Disinfeciton

6. Estimated sewage sludge wasting rate at this facility: _____ lb/day dry weight

   or 144000 gallons per day

7. Estimated untreated sludge received from off site: N/A lb/day dry weight

   or _____ gallons per day

8. Estimated percent solids of combined sewage sludge prior to treatment: 3 %

9. List the sewage sludge treatment processes used in preparing sludge for final use or disposal:

	Sludge Quantity (untreated pounds per day)
Gravity Thickening	
Mesophyllic Anaerobic Digestion	
Mechanical Dewatering (Centrifuge) and Lime Stablization	

10. Estimate the total volume of sludge generated: 3,231 (dry U.S. tons per year)

Sludge Disposal Methods

1. Which of the following describes the current method of sewage sludge disposal for this facility:

	Current Practices			Proposed Practices	
	Approved by ADEM		Quantity	Approved by ADEM	
	Yes	No	(dry U.S. tons/year)	Yes	No
a. X Land Application, Bulk Shipped			3,231		
☐ Agriculture	☐	☐		☐	☐
☐ Forest	☐	☐		☐	☐
☐ Public Contact	☐	☐		☐	☐
☐ Lawn/Home Garden	☐	☐		☐	☐
b. ☐ Land Application, Bagged/Other Container					
☐ Agriculture	☐	☐		☐	☐
☐ Forest	☐	☐		☐	☐
☐ Public Contact	☐	☐		☐	☐
☐ Lawn/Home Garden	☐	☐		☐	☐
c. ☐ Incineration	☐	☐		☐	☐
d. ☐ Subtitle D Landfill (Disposal Only)	☐	☐		☐	☐
e. ☐ Lined Treatment Lagoon or Stabilization Pond	☐	☐		☐	☐
f. ☐ Unlined Lagoon or Stabilization Pond	☐	☐		☐	☐
g. ☐ Other (Please Describe)	☐	☐		☐	☐

2. If "f" was selected above and sludge is stored for 2 or more years, enter the distance between the surface disposal site and the property line: N/A feet

Pollutant Concentrations

1. Enter the total concentrations of the following analytes using existing data. Do not enter TCLP results.

Analyte	Concentration (mg/kg or ppm)	Sample Type	Sample Date	Detection Level of Analysis
Arsenic	<PQL	Grab	Yearly Average	11
Cadmium	<PQL	Grab	Yearly Average	8
Chromium	39.00	Grab	Yearly Average	8
Copper	400.00	Grab	Yearly Average	8
Lead	55.00	Grab	Yearly Average	15
Mercury	1.90	Grab	Yearly Average	0.6
Molybdenum	8.30	Grab	Yearly Average	5
Nickel	38.00	Grab	Yearly Average	6
Selenium	<PQL	Grab	Yearly Average	15
Zinc	1,013.00	Grab	Yearly Average	18
Ammonium-Nitrogen	N/A	N/A	N/A	N/A
Nitrate-Nitrogen	N/A	N/A	N/A	N/A
Total Kjeldahl Nitrogen	14,642.00	N/A	N/A	N/A

2. Enter the estimated or determined percent solids of the sewage sludge when sampled for the above analysis: 30 %

Treatment Provided for Sewage Sludge at the Facility

1. Which class of pathogen reduction does the sewage sludge meet at the facility? (As defined in 40 CFR Part 503)

☐ Class A
- ☐ Alternative A1 - Time and Temperature
- ☐ Alternative A2 - Alkaline Treatment
- ☐ Alternative A3 - Analysis and Operation
- ☐ Alternative A4 - Analysis Only
- ☐ Alternative A5 - Processes to Further Reduce Pathogens (PFRP)
  - ☐ Heat Drying ☐ Thermophilic Aerobic Digestion ☐ Heat Treatment
  - ☐ Pasteurization ☐ Gamma Ray Irradiation ☐ Beta Ray Irradiation
  - ☐ Composting ☐ ☐
- ☐ Alternative A6 - PFRP Equivalent _____

☒ Class B
- ☐ Alternative B1 - Fecal Coliform Count
- ☐ Alternative B2 - Process to Significantly Reduce Pathogens (PSRP)
  - ☐ Aerobic Digestion ☐ Air Drying ☐ Anaerobic Digestion
  - ☐ Composting ☐ Lime Stabilization
- ☐ Alternative B3 - PSRP Equivalent _____

☐ Neither or Unknown

Vector Attraction Control
- ☐ Option 1 - Minimum 38% Reduction in Volatile Solids
- ☐ Option 2 - Anaerobic Processes, with Bench-Scale Demonstration of Volatile Solids Reduction

☐ Option 3 - Aerobic Processes, with Bench-Scale Demonstration of Volatile Solids Reduction
☐ Option 4 - Specific Oxygen Uptake Rate (SOUR) for Aerobically Digested Sludge
☐ Option 5 - Aerobic Processes plus Elevated Temperature
X Option 6 - Raised pH to 12 and Retained at 11.5
☐ Option 7 - 75% Solids with no Unstabilized Solids
☐ Option 8 - 90% Solids with Unstabilized Solids
☐ Option 9 - Injection Below Land Surface
☐ Option 10 - Incorporation into Soil within 6 or 8 Hours
☐ Option 11 Covering Active Sewage Sludge Unit Daily
☐ None of the Above

Groundwater Monitoring

1. If disposal practice is surface disposal or land application, is groundwater monitoring required or performed at the site?

☐ Yes (If yes, please submit a copy of the groundwater monitoring reports along with this survey. Also please provide the approximate depth to groundwater and the groundwater monitoring procedures used to obtain the data.)
X No

Land Application of Sewage Sludge

Answer the following questions if sewage sludge is applied to land.

1. If sewage sludge is land applied in bulk form, what type of crop or other vegetation is grown on this site?
Tifton Bermuda Grass, Ryegrass

2. If sewage sludge is land applied in bulk form, what is the nitrogen requirement for this crop or vegetation?
600 lbs/acre/year (Reclamation Site)

3. If sewage sludge is land applied in bulk form, briefly describe the nature of any complaints filed from neighbors?
No complaints have been received.

Note: Permittees that submitted the "Annual Report Review Form" for sludge to the EPA may submitt a copy with the MWPP in lieu of this Attachment.

Village Creek Wastewater Treatment Plant

ATTACHMENT 4 – Plant and Collection System

Personnel Inventory

PLANT PERSONNEL INVENTORY

ACILITY NAME	Village Creek WWTP	PLANT GRADE	IV
PERMIT NUMBER	AL0023647		
PLANT MANAGER	Greg James	TEL #	205-791-6405
DEPARTMENT DIRECTOR	David Denard	TEL #	205-327-8232
PLANT OPERATORS:			

	NAME	GRADE	OPERATOR NO.	EXP. DATE
1	Gregory James	IV	C000989	3/31/2015
2	Terrence Lane	IV	C003437	3/31/2015
3	Frederick Deamues	IV	C001885	3/31/2015
4	Paul Hardisty	IV	C001001	2/28/2015
5	Linda Jackson	IV	C000952	12/31/2014
6	Ryan Tyler	IV	C002923	6/30/2015
7	Tim Gilliland	IV	C004866	9/30/2014
8	Corey Bates	IV	C001583	2/28/2013
9	Rickie Hogeland	IV	C000855	11/30/2015
10	Orlando Walker	IV	C000536	11/30/2015
11	Brenda Scott	IV	C002569	6/30/2015
12	Fred Cooper	IV	C001744	11/30/2015
13	Kim Passmore	IV	C005368	8/31/2013

	COLLECTION SYSTEM OPERATORS:			
1	Brian Champion	1 (C)	C002094	6/30/2015
2	Don Goodwin	1 (C)	C005423	6/30/2015
3	Lavon Evans	1 (C)	C004631	12/31/2014
4	Brian Rohling	1 (C)	C005418	6/30/2015

	MAN HRS/WK	NUMBER
MANAGEMENT/SUPERVISOR	320	8
OPERATORS:		
GRADE IV	200	5
MAINTENANCE	200	7
OTHER PLANT WORKERS	960	22

AVERAGE NUMBER OF EMPLOYEES PER SHIFT:

1ST	29	START TIME	8:00 AM
2ND	4		4:00 PM
3RD	4		12:00 AM
4th	4		12:00 AM
5gh	4		12:00 PM

OPERATOR SHIFTS NORMALLY WORKED EACH DAY:

Shift	Hours	Mon	Tues	Wed	Thu	Fri	Sat	Sun
1st	12 am to 8 am	X	X	X	X	X		
2nd	8 am to 4 pm	X	X	X	X	X		
3rd	4 pm to 12 am	X	X	X	X	X		
4th	12 am to 12 pm						X	X
5th	12 pm to 12 am						X	X

	YES	NO
. DOES PLANT OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		
2. DOES COLLECTION SYSTEM OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		

PLANT AND COLLECTION SYSTEM PERSONNEL INVENTORY

FACILITY NAME: Sewer Line Maintenance PLANT GRADE: IV

PERMIT NUMBER:

PLANT SUPERINTENDENT: TEL. # (205) 540-7585

SYSTEM MANAGER: David Denard TEL. # (205) 325-5979

PLANT OPERATORS:

	NAME	GRADE OR TRAINEE STATUS	OPERATOR NO.	EXP. DATE
1.	Brian Champion	I (c)	C002094	6/30/2015
2.	Don Goodwin	I (c)	C005423	6/30/2015
3.	Lavon Evans	I (c)	C004631	12/31/2014
4.	Brian Rohling	I (c)	C005418	6/30/2015
5.				
6.				
7.				
8.				
9.				
10.				

COLLECTION SYSTEM OPERATORS:

1.				
2.				
3.				
4.				

	MAN HRS./WK	NUMBER
MANAGEMENT/SUPERVISOR		
OPERATOR(S):		
GRADE I-C		
GRADE I		
GRADE II		
GRADE III		
GRADE IV		
DESIGNATED TRAINEE(S)		
LABORATORY		
MAINTENANCE		
OTHER PLANT WORKERS		

AVERAGE NUMBER OF EMPLOYEES PER SHIFT:

		START TIME
1ST		
2ND		
3RD		

OPERATOR SHIFTS NORMALLY WORKED EACH DAY:

	SUN	MON	TUES	WED	THURS	FRI	SAT
1ST							
2ND							
3RD							

ADEM USE ONLY

	YES	NO
1. DOES PLANT OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		
2. DOES COLLECTION SYSTEM OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		

Municipal Water Pollution Prevention (MWPP) Annual Report Calendar Year 2013

For the

Warrior WWTP

as required by the
Alabama Department of Environmental Management NPDES Program

Prepared by
Jefferson County Commission
Environmental Services Department

May 31, 2014

JEFFERSON COUNTY COMMISSION

DAVID CARRINGTON - PRESIDENT
GEORGE F. BOWMAN
SANDRA LITTLE BROWN - PRESIDENT PRO TEMPORE
T. JOE KNIGHT
JAMES A."JIMMIE" STEPHENS

DAVID CARRINGTON – COMMISSIONER
ENVIRONMENTAL SERVICES

TONY PETELOS, COUNTY MANAGER

Office of

DAVID DENARD
Director of Environmental Services
Suite A-300
716 Richard Arrington, Jr. Blvd. N.
Birmingham, Alabama 35203
Telephone (205) 325-5496
Fax (205) 325-5981

May 31, 2014

Mr. Nic Caraway
Alabama Department of Environmental Management
Water Division – Municipal Branch
P.O. Box 301463
Montgomery, AL 36130-1463

RE: Municipal Water Pollution Prevention (MWPP)
Annual Report Calendar Year 2013

Mr. Caraway:

The Jefferson County Environmental Services Department submits the above referenced report for the Warrior Wastewater Treatment Facility, NPDES Permit No. AL0050881. Included is information as required in ADEM Form 41701/06ml, bypass/overflow event reports, MWPP Sewage Sludge Survey, and the Plant & Collection System Personnel Inventory.

If you have any questions regarding this information, please contact me at 205.325.5979 or Celeste Brown at Jefferson County Barton Laboratory at 205.238.3859.

Sincerely,

David Denard, Director
Environmental Services Department

pc: Celeste Brown, JCESD Barton Laboratory
Daniel White, JCESD Deputy Director
Chad Quick, Warrior WWTP

MUNICIPAL WATER POLLUTION PREVENTION (MWPP)

ANNUAL REPORT

SUBMITTED BY:

TREATMENT FACILITY: Warrior WWTP NPDES #: AL0050881

MUNICIPALITY: Jefferson County COUNTY: Jefferson

CONTACT PERSON: David Denard
Municipal Official

Director of Environmental Services
Title

Telephone #: (205)325-5806 Fax #: (205)325-5688

Email Address: denardd@jccal.org

CHIEF OPERATOR: Chad Quick
Name

Telephone #: (205)681-7971 Fax #: (205)680-8139

Email Address: quickc@jccal.org

Date: May 14, 2014

REVIEWED BY: Daniel White P.E. ESD Engineer
Consulting Engineer

Telephone #: (205) 214-8610 Fax #: (205)325-5688

Date: May 14, 2014

MWPP Annual Report
Information Source List

The following information will be needed to complete the compliance maintenance report that covers the calendar year of 2013 (due **May 31,** 2014).

Part 1 A. The average plant influent flow for each month (million gallons per day/MGD) during the year.
B. The average plant influent BOD (CBOD) for each month (mg/l and lb/day) in the year.
C. The plant's average design flow (MGD) and design BOD loading (lbs/day).

Part 2 A. The monthly average permit and DMR effluent concentration for BOD (CBOD), TSS, NH3-N, and/or TKN in mg/l for the year
B. The monthly average effluent limits and DMR loading for BOD, TSS, NH3-N, and/or TKN in lbs/day for the year

Part 3 The age of the treatment plant defined as the number of years since the last major reconstruction to increase the organic or hydraulic capacity of the plant. The last calendar year minus the year the new construction was brought on-line.

Part 4 Bypass and overflow information. This is the number of bypass or overflow events of untreated wastewater due to heavy rain or equipment failure whether intentional or inadvertent from all collection systems tributary to the treatment facility.

Part 5 A. Describe the characteristics and quantity of sludge generated.
B. If sludge is landspread, how many months of sludge storage does the plant have? This should include on-site and off-site storage from the treatment plant. The digestor capacity may be used in the calculation.

Part 6 A. Sludge Disposal Method
B. The number of approved land disposal sites for sludge available, and how many months or years these disposal sites will these be available for use.

Part 7 The number of sewer extensions installed in the community last year--the design population, design flow, and design BOD for each sewer extension.

Part 8 Operator Certification

Part 9 Financial Status

Part 10 Subjective Evaluation

Part 11 Summary Sheet

State of Alabama
MWPP Annual Report
Department of Environmental Management

Instructions to the Operator-in-Charge

1. Complete all sections of the MWPP Report to the best of your ability.

2. Parts 1 through 8 contain questions for which points will be generated. These points are intended to communicate to the Department and the governing body or owner the actions necessary to prevent effluent violations. Enter the point totals from Parts 1 through 8 on Part 11: Summary Sheet.

3. Add the point totals on Part 11: Summary Sheet.

4. Submit the MWPP Report to the governing body and the consulting engineer and owner for review and approval.

5. The governing body should pass a resolution which contains the following points:

   a. The resolution should acknowledge the governing body or owner has reviewed the MWPP Report.

   b. The resolution should indicate what actions will be taken to prevent effluent violations.

   c. The resolution should provide any other information the governing body or owner deems appropriate.

6. **The MWPP Report and the resolution must be submitted by May 31st to Municipal Section, Water Division, ADEM, P.O. Box 301463, Montgomery, AL 36130-1463.**

Facility Name: Warrior WWTP

Part 1: Influent Loading/Flows

A. List the average monthly volumetric flows and BOD_5 ($CBOD_5$) loadings received at your facility during the last calendar year.

Month	Column 1 Average Monthly Flowrate (MGD)	Column 2 Average Monthly BOD_5 ($CBOD_5$) Concentration (mg/l)	Column 3 Average Loading BOD_5 ($CBOD_5$) (lbs/day**)
January	0.13	178	166
February	0.12	254	264
March	0.11	177	163
April	0.15	261	303
May	0.14	257	282
June	0.11	251	226
July	0.11	324	296
August	0.12	248	253
September	0.07	345	222
October	0.04	476	169
November	0.05	294	95
December	0.10	247	192
Annual Avg.	0.10	276	219

**As reported on NPDES Discharge Monitoring Reports (DMRs) and as required by EPA's NPDES Self-Monitoring System, User Guide, March 1985.

B. List the average design flow and average design BOD_5 loading for the facility below. If you are not aware of these design quantities, contact your consulting engineer or the Alabama Department of Environmental Management.

	Average Design Flow	Average Design BOD_5 Loading (lbs/day)
Design Criteria	0.20 mgd	475.0
90% of the Design Criteria	0.18 mgd	427.5

C. How many times did the monthly flow (Column 1) to the WWTP exceed 90% of design flow? _____ (Check the appropriate point total)

☑ 0 - 4 = 0 points ☐ 5 or more = 5 points

D. How many times did the monthly flow (Column 1) to the WWTP exceed the design flow? ____ (Check the appropriate point total)

☑ 0 = 0 points ☐ 1 - 2 = 5 points ☐ 3 - 4 = 10 points ☐ 5 or more = 15 points

E. How many times did the monthly BOD_5 (or $CBOD_5$)* loading (lbs/day) (Column 3) to the WWTP exceed 90% of the design loading? ____ (Check the appropriate point total)

☑ 0 - 1 = 0 points ☐ 2 - 4 = 5 points ☐ 5 or more = 10 points

F. How many times did the monthly BOD_5 (or $CBOD_5$)* loading (lbs/day) (Column 3) to the WWTP exceed the design loading? _____ (Check the appropriate point total)

☑ 0 = 0 points ☐ 1 = 10 points ☐ 2 = 20 points ☐ 3 = 30 points ☐ 4 = 40 points ☐ 5 or more = 50 points

G. Enter each point value marked for Cthrough F and enter the sum in the appropriate blank below.

C points = 0_____

D points = 0_____

E points = 0_____

F points = 0_____

TOTAL POINTS VALUE OR PART 1 0_____
Enter this value on Part 11: Summary Sheet.

*To obtain equivalent BOD_5 loading for comparison with design loading for those permittees using influent $CBOD_5$, divide annual average $CBOD_5$, loading in lbs/day from Part 1, A by 0.7.

Facility Name: Warrior WWTP

Part 2: Effluent Quality/Plant Performance

A. List the monthly average permit limits for the facility in the blanks below and the average monthly effluent DMR BOD_5, ($CBOD_5$) TSS, NH_3-N and/or TKN concentration produced by the facility during the last calendar year.

(1) NPDES Permit Concentration

	Months	BOD_5 ($CBOD_5$) (mg/l)	TSS (mg/l)	NH_3-N (mg/l)	TKN (mg/l)
Permit Limit	April- Oct	18.0	24.0	1.2	Report
	Nov- March	25.0	24.0	2.1	Report

(2) DMR Concentration

Qtr	Month	BOD_5 ($CBOD_5$) (mg/l)	TSS (mg/l)	NH_3-N (mg/l)	TKN (mg/l)
1	January	0.93	1.7	0.01	n/a
	February	0.81	4.2	0.02	n/a
	March	0.96	0.59	0.00	n/a
2	April	1.5	0.83	0.03	0.33
	May	1.6	2.0	0.01	0.59
	June	1.2	2.3	0.02	0.80
3	July	1.2	3.4	0.02	0.31
	August	1.8	3.3	0.00	0.67
	September	2.0	2.4	0.00	0.66
4	October	0.75	1.3	0.00	1.4
	November	1.1	2.4	0.03	n/a
	December	1.6	2.4	0.03	n/a
	Annual Avg.	1.3	2.2	0.01	0.68

B. List the monthly average permit limit and DMR loadings below.

(1) NPDES Permit Loading

	Months	BOD_5 ($CBOD_5$) (lbs/day)	TSS (lbs/day)	NH_3-N (lbs/day)	TKN (lbs/day)
Permit Limit	April-Oct	15.0	20.0	1.0	Report
	Nov-March	20.8	20.0	1.7	Report

(2) DMR Loading

Qtr	Month	BOD_5 ($CBOD_5$) (lbs/day)	TSS (lbs/day)	NH_3-N (lbs/day)	TKN (lbs/day)
1	January	1.2	2.9	0.003	n/a
	February	0.90	4.2	0.01	n/a
	March	0.91	0.50	0.0	n/a
2	April	1.7	0.96	0.03	0.19
	May	1.9	2.5	0.0	0.59
	June	0.94	2.2	0.02	1.0
3	July	1.2	3.4	0.02	0.25
	August	1.9	3.4	0.0	1.2
	September	1.3	1.9	0.0	0.28
4	October	0.27	0.56	0.0	0.46
	November	0.47	1.1	0.03	n/a
	December	1.6	1.9	0.04	n/a
	Annual Avg.	1.2	2.1	0.01	0.57

C. During the past year did the BOD_5 concentration (mg/l) and/or loading (lbs/day) exceed the product of 1.4 times the monthly average permit limit during two months of any consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

D. During the past year did the BOD_5 concentration (mg/l) and/or loading (lbs/day), exceed the monthly average permit limit during four months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

E. During the past year did the effluent TSS concentration (mg/l) or loading (lbs/day) exceed the product of 1.4 times the monthly average permit limit during two months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

F. During the past year did the TSS concentration (mg/l) and/or loading (lbs/day) exceed the monthly average permit limit during four months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

G. During the past year did the NH_3-N or TKN concentration (mg/l) and/or loading (lbs/day) exceed the product of 1.4 times the monthly average permit limit during two months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

H. During the past year did either the NH_3-N or TKN concentration (mg/l) and/or loading (lbs/day), exceed the monthly average permit limit during four months of any two consecutive quarters? (Check the appropriate point total.)

☑ No = 0 points ☐ Yes = 121 points

I. Enter each point value checkedfor C through H in the blanks below.

C Points = 0
D Points = 0
E Points = 0
F Points = 0
G Points = 0
H Points = 0

HIGHEST INDIVIDUAL POINT VALUE FOR PART 2 (C-H) 0 (HIGHEST POINT = 121)
Enter this value on Part 11: Summary Sheet.

Facility Name: Warrior WWTP

Part 3: Age of the Wastewater Treatment Facility

A. What year was the wastewater treatment plant constructed or last reconstructed? _____

Subtract the above answer from the report year to determine age:

Age = (Last Calendar year) - (Answer to A)

Age 7 = (2013) - (2006)

Enter Age in Part C below.

B. Check the type of treatment facility employed.

	Factor
2.0 Mechanical Treatment Plant	2.0
_____ Aerated Lagoon	1.5
_____ Stabilization Pond	1.0
_____ Other (Specify: _____)	1.0

C. Multiply the factor listed next to the type of the facility your community employs by the age of your facility to determine the total point value for Part 3:

2.0 (Factor) x 7.0 (Age) = 14 TOTAL POINT VALUE FOR PART 3

Enter the above value on Part 11: Summary Sheet. If the total point value exceeds 40, enter 40 on Part 11: Summary Sheet.

Facility Name: Warrior WWTP

Part 4: Bypassing and Overflows

A. How many bypass or overflow events of untreated wastewater occurred in the last year at the WWTP due to heavy rain? 0

B. How many bypass or overflow events of untreated wastewater occurred in the last year prior to the headworks of the WWTP due to heavy rain? 0

C. How many of the bypass or overflow events listed in Parts A and B have been corrected such that future bypass or overflow events at the same location due to heavy rain are not anticipated? 0

D. Add together Answers A and B and subtract Answer C from that total.
A + B – C = _____(Check the appropriate point total.)

☑ 0 = 0 points ☐ 1 = 5 points ☐ 2 = 10 points ☐ 3 = 15 points ☐ 4 = 20 points ☐ 5 = 25 points ☐ 6 = 30 points
☐ 7 = 35 points ☐ 8 = 40 points ☐ 9 = 45 points ☐ 10 = 50 points ☐ 11 or more = 100 points

E. How many bypass or overflow events of untreated wastewater occurred in the last year at the WWTP due to equipment failure? (This includes clogged/broken lines or manholes.) 0

F. How many bypass or overflow events of untreated wastewater occurred in the last year due to equipment failure prior to the headworks of the WWTP? (This includes clogged/broken lines or manholes.) 0

G. How many of the bypass or overflow events listed in Parts E and F have been corrected such that future bypass or overflow events at the same location due to the same equipment failure are not anticipated? 0

H. Add together Answers E and F and subtract Answer G from that total.
E + F - G = _____ (Check the appropriate point total.)

☑ 0 = 0 points ☐ 1 = 5 points ☐ 2 = 10 points ☐ 3 = 15 points ☐ 4 = 20 points ☐ 5 = 25 points ☐ 6 = 30 points
☐ 7 = 35 points ☐ 8 = 40 points ☐ 9 = 45 points ☐ 10 = 50 points ☐ 11 or more = 100 points

I. Add point values circled in D and H and enter the total in the blank below.

TOTAL POINT VALUE FOR PART 4 0
Enter this value on Part 11: Summary Sheet.

All bypass or overflow events that have occurred in the last year (for any reason) must be individually reported with this MWPP report.

Facility Name: Warrior WWTP

Part 5: Sludge Quantity and Storage

A. Please provide information concerning sludge quantity, characteristics, and storage practices based on available data as requested on the *MWPP Sewage Sludge Survey,* ADEM Form 419.

B. How many months of sludge storage capacity does the wastewater treatment facility have available, either on-site or off-site? (i.e., How many months can the facility operate without land spreading or disposing of sludge?) 4

(Check the appropriate point total.)

Greater than or equal to 4 months	= 0 points ☑
Less than 4 months, but greater than or equal to 3 months	= 10 points ☐
Less than 3 months, but greater than or equal to 2 months	= 20 points ☐
Less than 2 months, but greater than or equal to 1 month	= 30 points ☐
Less than one month	= 50 points ☐

TOTAL POINT VALUE FOR PART 5 0
Enter this value on Part 11: Summary Sheet.

Part 6: Sludge Disposal Practices and Sites

A. Please provide the sludge disposal practices and site information based on available data as requested on the *MWPP Sewage Sludge Survey,* ADEM Form 419.

B. How many months or years does the facility have access to and approval for sufficient land disposal sites to provide proper land disposal? (Check the appropriate point total.)

36 or more months	= 0 points ☐
24 - 35 months	= 10 points ☐
12 - 23 months	= 20 points ☑
6 - 11 months	= 30 points ☐
Less than 6 months	= 50 points ☐

TOTAL POINT VALUE FOR PART 6 20
Enter this value on Part 11: Summary Sheet.

Facility Name: Warrior WWTP

Part 7: New Development

Are there any major new developments (industrial, commercial, or residential) in the last calendar year or anticipated in the next 2-3 years such that either flow or BOD_5 loadings to the sewage system could significantly increase? Estimate additional loadings below.

Design Population: Equivalent (PE)	Design Flow: MGD	Design BOD_5: lbs/day

List industrial and/or residential developments.

No major new developments are planned.

Will the additional loading overload the plant? (Check the appropriate point total.)

No = 0 points ☑ Yes = 121 points ☐

Enter the point total in the blank below.

TOTAL POINT VALUE FOR PART 7 0 (highest point total = 121)
Enter this value on Part 11: Summary Sheet.

Part 8: Operator Certification

Complete the *Plant and Collection System Personnel Inventory,* ADEM Form 441.

Do both the plant operator and collection system staffing comply with ADEM Administrative Code; Division 10, Operator Certification Program? (Check the appropriate point total.)

Yes = 0 points ☑ No = 121 points ☐

TOTAL POINT VALUE FOR PART 8 0 (highest point total = 121)
Enter this value on Part 11: Summary Sheet.

Facility Name: Warrior WWTP

Part 9: Financial Status

A. Are User-Charge Revenues sufficient to cover operation and maintenance expenses? If no, how are O&M costs being financed? ***Include user charge rates***.

Revenues are sufficient. The below values are based on a 5/8" meter and 6000 gallons of water use.

Jefferson County has a three tier block rate structure for residential users for 0-3, 4-6, and 7+ccf water use.

Residential Minimum 15.00 Plus rate 6.02, 9.36, 10.69 /1,000 gal.

Industrial Minimum 15.00 Plus rate 10.51 /1,000 gal.

Monthly residential rate based on 6,000 gallons usage $ 56.04 (includes 15% credit for residential)

Please complete the above information based on your user charge rates for the report year. You may attach a sample water and sewer bill for clarity.

B. What financial resources are available to pay for the wastewater improvements and/or reconstruction needs?

In 2013, Jefferson County issued Series 2013 Sewer Warrants that fund capital improvements through 2023 at an annual average rate of $71.9 million over the 10-year period.

Part 10: Subjective Evaluation

A. Describe briefly the physical and structural conditions of the wastewater treatment facility.

The WWTP was newly constructed in 2006 and is in excellent condition.

B. Describe the general condition of the sewer system (sewer lines, manholes, lift stations).

The Warrior system includes roughly 50,000' of pipe and 2 pump stations. The system's historical rate of SSO's/100 miles of sewer is exceptional. There are no known capacity deficiencies.

The general condition of the system is good.

C. What sewage system improvements does the community have planned for construction in the next 5 years?

None

D. What is the theoretical design life of the plant, and what is the estimated remaining useful life of the wastewater treatment facility?

Calculated remaining useful life of the structures is 42 years (50 years - 8 years age of facility).

Calculated remaining useful life of the equipment is 17 years (25 years - 8 years of equipment).

Based on EPA's 2002 Clean Water and Drinking Water Infrastructure Gap Analysis Report.

E. What problems, if any, over the last year have threatened treatment or conveyance within the system?

None

F. Is the community presently involved in formal planning for treatment facility upgrading?

No

G. How many days in the last year were there residential backups at any point in the collection system for any reason other than clogging of the lateral connection? 1

H. Does the plant have a written plan for preventive maintenance on major equipment items? If yes, describe.

Yes, O&M manuals for all equipment are on site. We record lubrication and repairs on all equipment in a computer program (Infor) for future reference and to keep a log on all repairs.

I. Does this preventive maintenance program depict frequency of intervals, types of lubrication, and other preventive maintenance tasks necessary for each piece of equipment? (Check the appropriate response.) Yes ☑ No ☐

J. Are these preventive maintenance tasks, as well as equipment problems, being recorded and filed so future maintenance problems can be assessed properly? (Check the appropriate response.) Yes ☑ No ☐

K. Describe any major repairs or mechanical equipment replacement made in the last year and include the approximate cost for those repairs. Do not include major treatment plant construction or upgrading programs.

None

L. List any additional comments. (Attach additional sheets if necessary.)

Facility Name: Warrior WWTP

Part 11: Summary Sheet

1. Enter in the values from Parts 1 through 8 in the left column below. Add the numbers in the left column to determine the MWPP Report point total the wastewater system generated for the previous calendar year.

Actual Values	Maximum Possible
Part 1 0 points	80 points
Part 2 0 points	121 points
Part 3 14 points	40 points
Part 4 ____ points	200 points
Part 5 0 points	50 points
Part 6 20 points	50 points
Part 7 0 points	121 points
Part 8 0 points	121 points
Total 34 points	783 points

2. Check the facility type that best describes the plant's treatment and disposal of wastewater.

- [✓] Mechanical plant with surface water discharge
- [ ] Aerated Lagoon or stabilization pond with surface water discharge
- [ ] Mechanical plant using land disposal of liquid wastes
- [ ] Aerated Lagoon or stabilization pond using land disposal of liquid wastes

3. Check the range that describes the action needed to address problems identified in the report.

- [✓] 0 - 70 pts. Actions as Appropriate*
- [ ] 71 - 120 pts. Departmental Recommendation Range*
- [ ] 121 – 783 Municipality Action Range*

***Other actions may be required by NPDES outside the scope of this report.**

4. Complete the *Municipal Water Pollution Prevention Resolution Form*, ADEM Form 418.

5. In Question 1, do any of the actual point values in the left column equal the maximum possible points in the right column? (Check the appropriate response) Yes ☐ No ☐

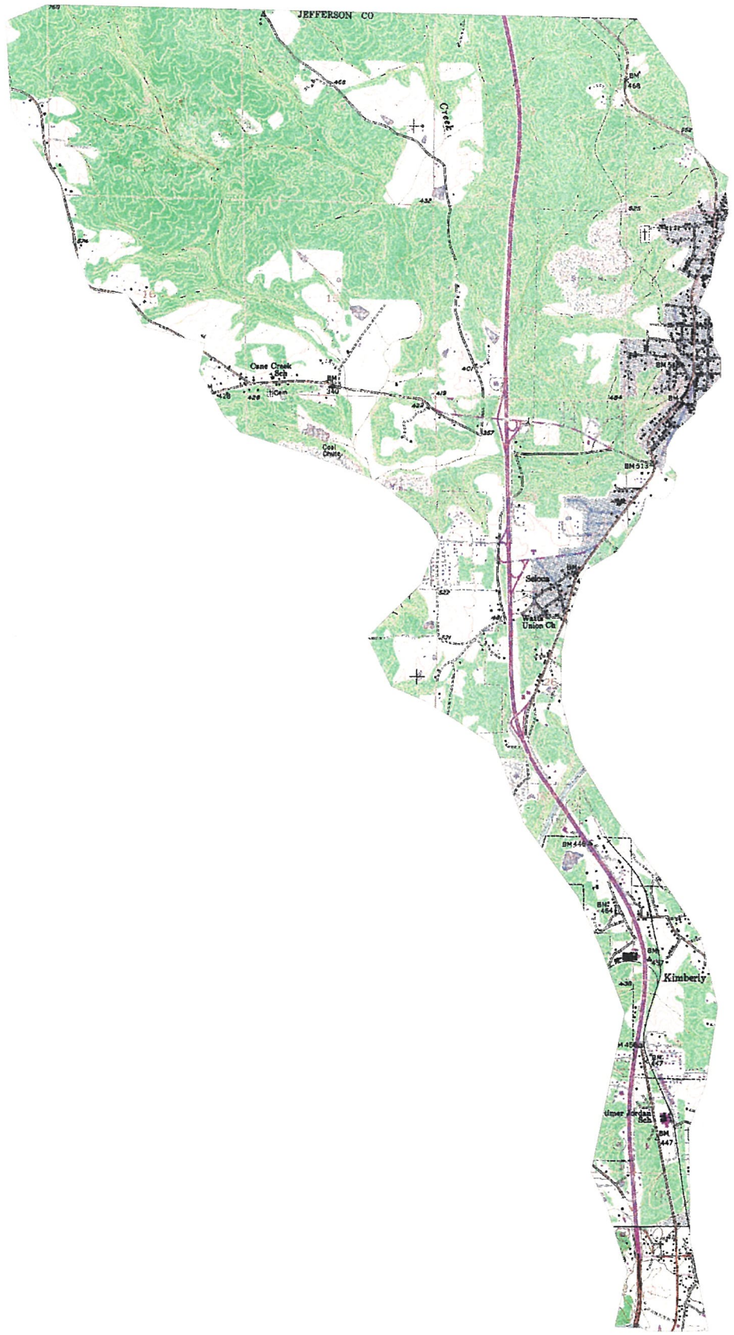
If yes, provide a written explanation for this situation in the space below.

Warrior Wastewater Treatment Plant

ATTACHMENT 2 – Raw Sewage Bypass and

SUMMARY

WARRIOR BASIN 2013 DISCHARGES



NOTE: OVERFLOWS SHOWN ARE OVER 10,000 GALLONS
NONE REPORTED FOR WARRIOR BASIN.

JEFFERSON COUNTY
ENVIRONMENTAL SERVICES
PLOTTED: 2-11-14

Summary of Unpermitted Discharges - Warrior

January 01, 2013 through December 31, 2013

NOTE: Quantities shown in the column "Est. Volume" are ESTIMATED ONLY. These estimates are the County's best determination of the discharge volume, based upon site-determinable information and accepted estimating methods. However, such estimates are subject to a high number of variables which are completely beyond the County's control and which can have a significant effect upon the calculated amount. Therefore, these estimates are to be used for relative comparison only, not as actual discharge volumes.

Event No.	*Date Reported*	*Location*	*Collection System*	*Ultimate Destination*	*Est. Vol. (gal)*	*Source*	*Cause*	*Weather*	*Action Taken*	*Person Reporting*	*Title*

Notes:

No Unpermitted Discharges for 2013

Warrior Wastewater Treatment Plant

ATTACHMENT 3 – MWPP Sewage Sludge

SURVEY

MWPP SEWAGE SLUDGE SURVEY

Facility Background Information:

1. Facility Information — Permit Number: **AL005081**
   - Name: **Warrior WWTP**
   - Street Address: **700 Blackburn Drive**
   - County: **Jefferson**

2. Facility Contact
   - Name: **Chad Quick**
   - Title: **Plant Supervisor**
   - Telephone: **(205) 681-7971**
   - Permittee Name: **Jefferson County Commission- Warrior WWTP**
   - Mailing Address: **Suite A-300, 716 Richard Arrington JR. Blvd. N.**
     Birmingham AL 35203

Facility Flow Information

1. Facility Wastewater Treatment Capacity
   - Avg. Daily Flow for 2013: **0.105** MGD
   - Facility Design Capacity: **0.2** MGD

2. Estimated Septage Quantity Handled (Residuals Removed from Septic Tank Systems)
   - Average Domestic Septage: **N/A** gallons per month
   - Average Commercial Septage: **N/A** gallons per month

3. Method of Septage Processing
   - ☐ Mixed with Influent Wastewater for Treatment
   - ☐ Mixed with Sewage Sludge
   - ☒ **N/A**

4. Estimated Percentage Contributing Wastewater Flow
   - Residential: **95** %
   - Industrial: **0** %
   - Other: **5** % Describe: **Commercial**

5. List type of wastewater treatment process(es) utilized at this facility:
   Bar Screening, Grit Removal, Extended Aeration with Activated Sludge, Clarification, Traveling Bridge Sand Filtration, UV Disinfection, Step Aeration

6. Estimated sewage sludge wasting rate at this facility: _____ lb/day dry weight
   or **1858** gallons per day

7. Estimated untreated sludge received from off site: **N/A** lb/day dry weight
   or _____ gallons per day

8. Estimated percent solids of combined sewage sludge prior to treatment: **2** %

9. List the sewage sludge treatment processes used in preparing sludge for final use or disposal:

	Sludge Quantity (untreated pounds per day)
Aerobic Digestion, Drying Beds (Air Drying)	

10. Estimate the total volume of sludge generated: **25** (dry U.S. tons per year)

Sludge Disposal Methods

1. Which of the following describes the current method of sewage sludge disposal for this facility:

	Current Practices			Proposed Practices	
	Approved by ADEM		Quantity	Approved by ADEM	
	Yes	No	(dry U.S. tons/year)	Yes	No
a. [X] Land Application, Bulk Shipped			**25**		
[X] Agriculture	X	☐		☐	☐
☐ Forest	☐	☐		☐	☐
☐ Public Contact	☐	☐		☐	☐
☐ Lawn/Home Garden	☐	☐		☐	☐
b. ☐ Land Application, Bagged/Other Container					
☐ Agriculture	☐	☐		☐	☐
☐ Forest	☐	☐		☐	☐
☐ Public Contact	☐	☐		☐	☐
☐ Lawn/Home Garden	☐	☐		☐	☐
c. ☐ Incineration	☐	☐		☐	☐
d. ☐ Subtitle D Landfill (Disposal Only)	☐	☐		☐	☐
e. ☐ Lined Treatment Lagoon or Stabilization Pond	☐	☐		☐	☐
f. ☐ Unlined Lagoon or Stabilization Pond	☐	☐		☐	☐
g. ☐ Other (Please Describe)	☐	☐		☐	☐

2. If "f" was selected above and sludge is stored for 2 or more years, enter the distance between the surface disposal site and the property line: **N/A** feet

Pollutant Concentrations

1. Enter the total concentrations of the following analytes using existing data. Do not enter TCLP results.

Analyte	Concentration (mg/kg or ppm)	Sample Type	Sample Date	Detection Level of Analysis
Arsenic	**<PQL**	**Grab**	*	**11.0**
Cadmium	**<PQL**	**Grab**	*	**5.0**
Chromium	**36**	**Grab**	*	**6.0**
Copper	**170**	**Grab**	*	**5.0**
Lead	**19**	**Grab**	*	**12.0**
Mercury	**8**	**Grab**	*	**0.0**
Molybdenum	**<PQL**	**Grab**	*	**6.0**
Nickel	**23**	**Grab**	*	**6.0**
Selenium	**<PQL**	**Grab**	*	**12.0**
Zinc	**653**	**Grab**	*	**8.0**
Ammonium-Nitrogen	**"""""""""""""**	**N/A**	**N/A**	**N/A**
Nitrate-Nitrogen	**"""""""""""""**	**N/A**	**N/A**	**N/A**
Total Kjeldahl Nitrogen	**37,000**	**Grab**	*	**0.09**

PQL=Practical Quantitative Limit *= Yearly Average

2. Enter the estimated or determined percent solids of the sewage sludge when sampled for the above analysis: **86** %

Treatment Provided for Sewage Sludge at the Facility

1. Which class of pathogen reduction does the sewage sludge meet at the facility? (As defined in 40 CFR Part 503)

☐ Class A
- ☐ Alternative A1 - Time and Temperature
- ☐ Alternative A2 - Alkaline Treatment
- ☐ Alternative A3 - Analysis and Operation
- ☐ Alternative A4 - Analysis Only
- ☐ Alternative A5 - Processes to Further Reduce Pathogens (PFRP)
  - ☐ Heat Drying ☐ Thermophilic Aerobic Digestion ☐ Heat Treatment
  - ☐ Pasteurization ☐ Gamma Ray Irradiation ☐ Beta Ray Irradiation
  - ☐ Composting ☐ ☐
- ☐ Alternative A6 - PFRP Equivalent _____

☒ Class B
- ☒ Alternative B1 - Fecal Coliform Count
- ☐ Alternative B2 - Process to Significantly Reduce Pathogens (PSRP)
  - ☐ Aerobic Digestion ☐ Air Drying ☐ Anaerobic Digestion
  - ☐ Composting ☐ Lime Stabilization
- ☐ Alternative B3 - PSRP Equivalent _____

☐ Neither or Unknown

Vector Attraction Control

- ☐ Option 1 - Minimum 38% Reduction in Volatile Solids
- ☐ Option 2 - Anaerobic Processes, with Bench-Scale Demonstration of Volatile Solids Reduction
- ☐ Option 3 - Aerobic Processes, with Bench-Scale Demonstration of Volatile Solids Reduction
- ☐ Option 4 - Specific Oxygen Uptake Rate (SOUR) for Aerobically Digested Sludge
- ☐ Option 5 - Aerobic Processes plus Elevated Temperature
- ☐ Option 6 - Raised pH to 12 and Retained at 11.5
- ☐ Option 7 - 75% Solids with no Unstabilized Solids
- ☐ Option 8 - 90% Solids with Unstabilized Solids
- ☐ Option 9 - Injection Below Land Surface
- ☒ Option 10 - Incorporation into Soil within 6 or 8 Hours
- ☐ Option 11 Covering Active Sewage Sludge Unit Daily
- ☐ None of the Above

Groundwater Monitoring

1. If disposal practice is surface disposal or land application, is groundwater monitoring required or performed at the site?

- ☐ Yes
- ☒ No

(If yes, please submit a copy of the groundwater monitoring reports along with this survey. Also please provide the approximate depth to groundwater and the groundwater monitoring procedures used to obtain the data.)

Land Application of Sewage Sludge

Answer the following questions if sewage sludge is applied to land.

1. If sewage sludge is land applied in bulk form, what type of crop or other vegetation is grown on this site?

Tifton Bermuda Grass, Ryegrass

2. If sewage sludge is land applied in bulk form, what is the nitrogen requirement for this crop or vegetation?

600lb/acre/year (Reclamation Site)

3. If sewage sludge is land applied in bulk form, briefly describe the nature of any complaints filed from neighbors?

No complaints have been received.

Note: Permittees that submitted the "Annual Report Review Form" for sludge to the EPA may submit a copy with the MWPP in lieu of this Attachment.

Warrior Wastewater Treatment Plant

ATTACHMENT 4 – Plant and Collection System

Personnel Inventory

PLANT AND COLLECTION SYSTEM PERSONNEL INVENTORY

FACILITY NAME: **Warrior WWTP** PLANT GRADE: **II**

PERMIT NUMBER: **AL 0050881**

PLANT SUPERINTENDENT: **Chad Quick** TEL. # **(205)681-7971**

SYSTEM MANAGER: **David Denard** TEL. # **(205)326-8232**

PLANT OPERATORS:

	NAME	GRADE OR TRAINEE STATUS	OPERATOR NO.	EXP. DATE
1.	**Eric Pond**	**IV**	**C003706**	**2/28/2016**
2.	**Mark Lee**	**IV**	**C000389**	**8/31/2016**
3.	**Chad Quick**	**IV**	**C003616**	**2/28/2015**
4.	**Pat McCarty**	**IV**	**C003224**	**8/31/2014**
5.	**Adam Moore**	**IV**	**C006513**	**11/1/2014**
6.				
7.				
8.				
9.				
10.				

COLLECTION SYSTEM OPERATORS:

1.				
2.				
3.				
4.				

	MAN HRS./WK	NUMBER
MANAGEMENT/SUPERVISOR	**120**	**3**
OPERATOR(S):		
GRADE I-C		
GRADE I		
GRADE II		
GRADE III		
GRADE IV	**80**	**2**
DESIGNATED TRAINEE(S)		
LABORATORY		
MAINTENANCE		
OTHER PLANT WORKERS		

AVERAGE NUMBER OF EMPLOYEES PER SHIFT:

1ST	**1**	START TIME	**7:00 AM**
2ND			
3RD			

OPERATOR SHIFTS NORMALLY WORKED EACH DAY:

	SUN	MON	TUES	WED	THURS	FRI	SAT
1ST	**X**	**X**	**X**	**X**	**X**	**X**	**X**
2ND							
3RD							

ADEM USE ONLY

	YES	NO
1. DOES PLANT OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?	**X**	
2. DOES COLLECTION SYSTEM OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		

PLANT AND COLLECTION SYSTEM PERSONNEL INVENTORY

FACILITY NAME: Sewer Line Maintenance PLANT GRADE: IV

PERMIT NUMBER:

PLANT SUPERINTENDENT: TEL. # (205) 540-7585

SYSTEM MANAGER: David Denard TEL. # (205) 325-5979

PLANT OPERATORS:

	NAME	GRADE OR TRAINEE STATUS	OPERATOR NO.	EXP. DATE
1.	Brian Champion	I (c)	C002094	6/30/2015
2.	Don Goodwin	I (c)	C005423	6/30/2015
3.	Lavon Evans	I (c)	C004631	12/31/2014
4.	Brian Rohling	I (c)	C005418	6/30/2015
5.				
6.				
7.				
8.				
9.				
10.				

COLLECTION SYSTEM OPERATORS:

1.				
2.				
3.				
4.				

	MAN HRS./WK	NUMBER
MANAGEMENT/SUPERVISOR		
OPERATOR(S):		
GRADE I-C		
GRADE I		
GRADE II		
GRADE III		
GRADE IV		
DESIGNATED TRAINEE(S)		
LABORATORY		
MAINTENANCE		
OTHER PLANT WORKERS		

AVERAGE NUMBER OF EMPLOYEES PER SHIFT:

		START TIME
1ST		
2ND		
3RD		

OPERATOR SHIFTS NORMALLY WORKED EACH DAY:

	SUN	MON	TUES	WED	THURS	FRI	SAT
1ST							
2ND							
3RD							

ADEM USE ONLY

	YES	NO
1. DOES PLANT OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		
2. DOES COLLECTION SYSTEM OPERATOR STAFFING COMPLY WITH DIVISION 10 OF ADEM ADMINISTRATIVE CODE?		

JEFFERSON COUNTY COMMISSION

DAVID CARRINGTON – PRESIDENT
GEORGE BOWMAN
SANDRA LITTLE BROWN
JOE KNIGHT
JIMMIE STEPHENS

Daniel White, P.E. – Deputy Directo
ENVIRONMENTAL SERVICES

Environmental Services Department
Suite A300
716 Richard Arrington, Jr. Blvd. N.
Birmingham, Alabama 35203
Telephone (205) 325-5496
Fax (205) 325-5981

February 18, 2014

Certified Mail 7010 1870 0003 1330 9443
Return Receipt Requested

EPA Region 7
ATTN: BIOSOLIDS CENTER
WWPD/WENF
11201 Renner Boulevard
Lenexa, Kansas 66219

RE: Jefferson County Commission - 2013 Annual Biosolids Report

Please find enclosed the 2013 Annual Biosolids Monitoring Report for the Jefferson County Environmental Services Department Biosolids Land Reclamation Program. This report is respectfully submitted in accordance with the requirements of 40 CFR Part 503.

Sincerely,

Daniel A. White, P.E.
Deputy Director
Environmental Services Dept.

cc: File

2013 ANNUAL BIOSOLIDS REPORT

JEFFERSON COUNTY COMMISSION
ENVIRONMENTAL SERVICES DEPARTMENT

JEFFERSON COUNTY, ALABAMA

BIOSOLIDS MANAGEMENT PROGRAM

Jefferson County Land Reclamation Program

REPORT PREPARED BY:

JEFFERSON COUNTY ENVIRONMENTAL SERVICES DEPARTMENT

2013 Annual Biosolids Report

2013 EPA ANNUAL BIOSOLIDS REPORT

JEFFERSON COUNTY ENVIRONMENTAL SERVICES DEPARTMENT
BIRMINGHAM, ALABAMA

Enclosed is the 2013 Annual Biosolids Monitoring Report for the Jefferson County Environmental Services' **Biosolids Land Reclamation Program**. This report is respectfully submitted to the Environmental Protection Agency (EPA) Region IV in accordance with the requirements of 40 CFR Part 503.

Information provided in this report includes:

1. Certification Statement for management practices, site restrictions, pathogen requirement, and vector attraction reduction requirements.

2. Executive Summary.

3. Project information for the Biosolids Management Program, including Jefferson County Wastewater Treatment Facility information and land application site data.

4. Biosolids testing methodology and analysis results, including sample collection forms.

5. Agronomic calculations, rate justification letter and sample worksheet for calculating agronomic rates.

6. Vector Attraction Reduction Statistics.

7. Land application site maps.

SECTION 1

CERTIFICATION STATEMENT

CERTIFICATION STATEMENT FOR THE *PREPARER* and *APPLIER* OF BULK SEWAGE BIOSOLIDS

I certify, under penalty of law, that the information that will be used to determine compliance with the management practices in §503.14, the site restrictions in §503.32 (b)(5), the Class B pathogen requirements in §503.32(b), and the vector attraction reduction requirements in §503.33(b)(6) or (10)(i) was prepared for each site on which bulk sewage sludge is applied under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.

Signature

2/18/14
Date

David Denard – Director, Jefferson County Environmental Services Department
Printed Name and Position

SECTION 2

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

The Jefferson County Environmental Services Department utilizes land application as the method of disposal for the biosolids currently produced by its wastewater treatment facilities. There are currently nine (9) wastewater treatment facilities operated by the Environmental Services Department. During 2013, these facilities treated an average daily flow of 124 MGD of wastewater and produced 10,956 dry tons of biosolids that were sent for land application. Seven (7) of the County's wastewater treatment facilities are Class I Publicly-Owned Treatment Works (POTWs), and therefore subject to the 40 CFR Part 503 reporting regulations.

Throughout 2013, the biosolids produced by Jefferson County's wastewater treatment facilities were land applied at two (2) former strip mine sites. Jefferson County is assisting the property owner, the United Land Corporation, in the reclamation of both sites through the land application of biosolids.

The Flat Top/Bessie Mines Land Reclamation Site (Flat Top) is located in northwestern Jefferson County and is approximately 4,670 acres total in size, with approximately 2,700 acres being disturbed through previous mining activities. Biosolids from nine (9) wastewater treatment facilities were applied at this site during 2013.

The Beltona Land Reclamation Site, located in northern Jefferson County, is approximately 1,000 acres in size, with about one-third of the site being previously disturbed through mining activities. Biosolids from two (2) wastewater treatment facilities were applied at Beltona during 2013.

Applicable site restrictions, general requirements, and management practices have been met at both Land Reclamation Sites. Biosolids were applied to both sites using the "Pollutant Concentration" (PC) option. Pathogen and vector attraction reduction requirements and all required site restrictions for Class "B" biosolids were also met.

SECTION 3

PROJECT INFORMATION

JEFFERSON COUNTY

WASTEWATER TREATMENT FACILITIES

System: Jefferson County Commission/Environmental Services Department
716 Richard Arrington, Jr. Boulevard North
Birmingham, AL 35203

Summary:

The Jefferson County Environmental Services Department currently operates nine wastewater treatment facilities. During 2013, these facilities treated an average daily flow of 124 MGD of wastewater and produced 10,956 dry (English) tons of biosolids that were land applied. Seven of the County's wastewater treatment facilities are Class I POTWs, and therefore subject to the 40 CFR Part 503 reporting regulations.

Class I POTWs:		**Dry Tons of Biosolids Land Applied**
1.	Cahaba River Wastewater Treatment Plant NPDES Permit No. AL0023027	1,207
2.	Five Mile Creek Wastewater Treatment Plant NPDES Permit No. AL0026913	1,021
3.	Leeds Wastewater Treatment Plant NPDES Permit No. AL0022297	373
4.	Trussville Wastewater Treatment Plant NPDES Permit No. AL0022934	614
5.	Turkey Creek Wastewater Treatment Plant NPDES Permit No. AL0022936	251
6.	Valley Creek Wastewater Treatment Plant NPDES Permit No. AL0023655	4,111
7.	Village Creek Wastewater Treatment Plant NPDES Permit No. AL0023647	3,231
Non-Class I POTWs (<1.0 MGD):		
1.	Prudes Creek Wastewater Treatment Plant NPDES Permit No. AL0056120	123
2.	Warrior Wastewater Treatment Plant NPDES Permit No. AL0050881	25
		TOTAL: 10,956 Dry Tons

Reporting Requirements:

Based on the quantity of biosolids land applied during 2013, the required frequency of monitoring was six times per year. However, Jefferson County typically performs biosolids monitoring on a monthly basis (twelve times per year).

Pathogen Requirements:

Class "B" pathogen requirements were met through Alternative 1: The Monitoring of Fecal Coliform [503.32(b)(2)]. The geometric mean fecal coliform density per gram of dry biosolids was less than 2 million colony-forming units for each sampling event (see Biosolids Analysis Results).

Vector Attraction Reduction Summary:

The Valley Creek and Village Creek wastewater treatment facilities primarily utilized Option 6: Addition of Alkaline Material [503.33(b)(6)] for vector attraction reduction of their biosolids. The lime stabilized biosolids from the Valley Creek and Village Creek WWTPs account for approximately 49% of the County's total land applied biosolids. Only the alkaline stabilized biosolids from the Valley Creek and Village Creek WWTPs were land applied at the Beltona Land Reclamation Site in 2013 (21% of the total from these facilities). The remaining biosolids from these two sites and the seven other WWTPs were land applied at the Flat Top/Bessie Mines application site and were incorporated into the soil within six hours of application as described in Option 10: Incorporation of Biosolids into the Soil [503.33(b)(10)(i)]. This Option 10 method of vector attraction reduction applied to approximately 86% of the County's total biosolids land applied during 2013. The Valley Creek WWTP also met vector attraction reduction requirements through Option 1: Volatile Solids Reduction by a minimum of 38 percent [503.33(b)(1)] after July 25, 2013 as a secondary method.

FLAT TOP/BESSIE MINES
LAND RECLAMATION SITE

System: Jefferson County Commission/Environmental Services Department
716 Richard Arrington, Jr. Boulevard North
Birmingham, AL 35203

Reporting Period:
January 1, 2013 to December 31, 2013

Site Address:
5201 Flat Top Road, Graysville, AL 35073

Site Description:
The Flat Top Land Reclamation Site is a former strip mine site, 4,670 acres total in size, with approximately 2,700 acres being previously disturbed through mining activities. Jefferson County is assisting the property owner in the reclamation of this site through the land application of biosolids. Biosolids were land applied on roughly 423 acres at the site in 2013.

There is currently marginal soil mass present at this site for growing vegetation and, in order to build adequate soil mass, biosolids are recommended to be applied at a rate of 600 lb Nitrogen/Ac/year. When soil mass becomes adequate to sustain crop growth, Tifton Bermuda and Rye grass will be planted for nitrogen uptake.

Source of Biosolids:
During 2013, biosolids from nine wastewater treatment facilities were land applied at this site.

Quantity:
A total of 9,391 dry (English) tons of biosolids were applied at the Flat Top Land Reclamation Site during 2013. Biosolids were applied to Plot 3 of the site (see Figure 2). Of the total dry tons applied, 3,834 tons were lime stabilized and 5,557 tons were not lime stabilized.

Pollutant Limits:
Biosolids were applied to this site using the "Pollutant Concentration" (PC) option (see 2013 Biosolids Analysis Results). In order to be representative of in-situ conditions, monthly biosolids samples were taken from each treatment facility and then blended according to each facility's disposal ratio. Biosolids testing was then performed on this "blended" sample.

Pathogen Requirements:

Class "B" pathogen requirements were met through Alternative 1: The Monitoring of Fecal Coliform [503.32(b)(2)]. The geometric mean fecal coliform density per gram of dry biosolids was less than 2 million colony-forming units for each sampling event (see 2012 Biosolids Analysis Results).

Vector Attraction Reduction Requirements:

The Valley Creek and Village Creek wastewater treatment facilities primarily utilized lime stabilization for vector attraction reduction in the majority of their biosolids in accordance with Option 6: Addition of Alkaline Material [503.33(b)(6)]. To satisfy the requirements of Option 6, sufficient lime was added to the biosolids to raise the pH to at least 12 for 2 hours and at least 11.5 for an additional 22 hours, without the addition of more lime. Beginning in June and continuing into July, the Valley Creek WWTP intermittently tested whether the vector attraction reduction and pathogen requirements could be met through Option 1: Volatile Solids Reduction by a minimum of 38 percent [503.33(b)(1)]. The tests were successful, and the facility ceased using lime on July 25th. When biosolids from these treatment facilities are land applied at the Flat Top/Bessie Mines Reclamation Site, they are incorporated into the soil within six hours of application as well.

For biosolids received at the Flat Top Land Reclamation Site from the remaining treatment plants and the portion of biosolids from Valley and Village wastewater treatment facilities that did not receive lime stabilization, the method of vector attraction reduction used was Option 10: Incorporation of Biosolids into the Soil [503.33(b)(10)(i)]. These biosolids were land applied and incorporated into the soil within six hours of application on the land.

Management Practices and Site Restrictions:

All applicable management practices stated in 503.14 were met at the site, including a minimum 100 ft. buffer zone around waters of the United States.

All applicable site restrictions stated in 503.32(b)(5) for Class "B" biosolids were also met. The Flat Top/Bessie Mines Land Reclamation site is in a remote area of Jefferson County and is located on private property; therefore there is no public access to the site.

BELTONA LAND RECLAMATION SITE

System: Jefferson County Commission/Environmental Services Department
716 Richard Arrington, Jr. Boulevard North
Birmingham, AL 35203

Reporting Period:

January 1, 2013 to December 31, 2013

Site Address:

401-B Beltona Road, Warrior, AL 35180

Site Description:

The Beltona Land Reclamation Site, which is approximately 1,000 acres in size, is a former strip mine site located in northern Jefferson County. About one-third of the site has been utilized for biosolids land application, with plot sizes ranging from 3.0 acres to 20 acres. Jefferson County is assisting the property owner in the reclamation of this site through the land application of biosolids. Biosolids were land applied on roughly 143 acres at the site in 2013. Presently, Tifton Bermuda and Winter Rye grasses are grown at Beltona and are harvested several times a year as hay.

Source of Biosolids:

During January, February, and March 2013, biosolids from the Valley Creek and Village Creek wastewater treatment facilities were land applied at this site.

Quantity:

1,565 dry (English) tons of biosolids were land applied at the Beltona Land Reclamation Site during 2013.

Pollutant Limits:

Biosolids from two of the County's wastewater treatment facilities were applied to this site using the "Pollutant Concentration" (PC) option. Biosolids testing was performed on samples from these facilities at a frequency that meets or exceeds the minimum monitoring frequency requirement for each facility (see 2013 Biosolids Analysis Results).

Pathogen Requirements:

Class "B" pathogen requirements were met through Alternative 1: The Monitoring of Fecal Coliform [503.32(b)(2)]. The geometric mean fecal coliform density per gram of dry biosolids was less than 2 million colony-forming units for each sampling event (see 2012 Biosolids Analysis Results).

Vector Attraction Reduction Requirements:

For the biosolids land applied at the Beltona site, the Valley Creek and Village Creek wastewater treatment facilities utilized lime stabilization for vector attraction reduction of their biosolids, as described in Option 6: Addition of Alkaline Material [503.33(b)(6)]. To satisfy the requirements of Option 6, sufficient lime was added to the biosolids to raise the pH to at least 12 for 2 hours and at least 11.5 for an additional 22 hours, without the addition of more lime. Lime stabilized biosolids were then surface-applied at the Beltona Land Reclamation Site.

Management Practices and Site Restrictions:

All applicable management practices stated in 503.14 were met at the site, including a minimum 100 ft. buffer zone around waters of the United States.

All applicable site restrictions stated in 503.32(b)(5) for Class "B" biosolids were also met. The Beltona Land Reclamation Site is in a remote area of Jefferson County and is located on private property; therefore there is no public access to the site.

SECTION 4

BIOSOLIDS ANALYSIS

TEST METHODS FOR BIOSOLIDS ANALYSIS

Based on the quantity of biosolids land applied at the Flat Top/Bessie Mine Land Reclamation Site during 2013, the required frequency of monitoring was six (6) times per year; however, Jefferson County typically performs biosolids monitoring on a monthly basis (see 2013 Biosolids Analysis Results). Each month, samples were collected from each treatment facility and blended according to each facility's disposal ratio in order to be representative of in-situ conditions. Biosolids testing was then performed on this "blended" sample.

For the Beltona Land Reclamation Site, biosolids samples from the two (2) contributing treatment facilities were collected at a frequency that meets or exceeds the minimum monitoring frequency requirement for each facility (see 2013 Biosolids Analysis Results).

METALS ANALYSIS:

Following is a list of the biosolids sample preparation and test methods used when performing metals testing:

METHODS FOR EVALUATING SOLID WASTE, SW846 METHODS:	
Arsenic	3050B, 7060A
Cadmium	3050B, 7130
Chromium	3050B, 7190
Copper	3050B, 7210
Lead	3050B, 7420
Mercury	7471B
Molybdenum	3050B, 7481
Nickel	3050B, 7520
Selenium	3050B, 7740
Zinc	3050B, 7950

FECAL COLIFORM TESTING:

For each sampling event, seven (7) samples were collected and tested according to the procedure outlined in Part 9222D, *Standard Methods for the Examination of Water and Wastewater,* and Appendix F of EPA's *Environmental Regulations and Technology, Control of Pathogens and Vector Attraction in Sewage Sludge*. The geometric mean fecal coliform density per gram of dry biosolids was less than 2 million colony-forming units for each sampling event (see 2012 Biosolids Analysis Results). Serial dilutions were prepared in the range of 10^1 through 10^6, and on some occasions 10^7, thus enabling coliform colony counts of greater than 20 million.

2013 BIOSOLIDS ANALYSIS RESULTS
FLAT TOP/BESSIE MINES LAND RECLAMATION SITE
(Blended sample from all facilities)

Date	As mg/kg	Cd mg/kg	Cr mg/kg	Cu mg/kg	Pb mg/kg	Hg mg/kg	Mo mg/kg	Ni mg/kg	Se mg/kg	Zn mg/kg	% Moisture mg/kg	Fecal Coliform CFU/g*
1/15/2013	<PQL	<PQL	98	1,400	76	2.3	18	73	13	3,700	73%	3
2/5/2013	<PQL	<PQL	74	960	54	2.0	12	57	<PQL	3,100	64%	7,400
3/5/2013	<PQL	<PQL	110	1,500	73	<PQL	18	72	<PQL	3,700	58%	1,400
4/9/2013	<PQL	<PQL	110	1,300	70	1.8	16	76	14	3,500	54%	1,900
5/7/2013	<PQL	<PQL	110	1,600	68	2.1	19	65	12	2,900	65%	3,700
6/4/2013	<PQL	<PQL	67	660	51	2.0	11	55	<PQL	2,300	58%	1,300
7/16/2013	<PQL	<PQL	86	1,400	63	2.0	19	58	20	1,800	64%	0
8/6/2013	<PQL	<PQL	130	1,400	82	<PQL	21	100	23	3,700	63%	0
9/10/2013	<PQL	<PQL	120	1,500	77	2.2	17	83	<PQL	4,500	55%	5,900
10/1/2013	<PQL	<PQL	130	1,200	83	1.9	21	79	13	3,800	61%	8,100
11/12/2013	<PQL	<PQL	110	1,700	67	<PQL	19	73	13	4,500	59%	23,000
12/3/2013	<PQL	5.1	140	2,000	100	2.2	34	100	29	3,500	71%	2,900
Average	<PQL	<PQL	**107**	**1385**	**72**	**1.5**	**19**	**74**	<PQL	**3,400**		
Maximum	<PQL	5.1	**140**	**2,000**	**100**	**2.3**	**34**	**100**	**29**	**4,500**		
PQL	11	5.0	6.0	5.0	12	0.03	6.0	6.0	12	8		
EQ/PC Limit[1]	41	39	-	1,500	300	17	-	420	100	2,800	-	-
Ceiling Limit[2]	75	85	-	4,300	840	57	75	420	100	7,500	-	-

All pollutant concentrations given on a dry-weight basis

PQL = Practical Quantitation Limit

[1] Pollutant Concentration Limits taken from Table 3, Part 503.13

[2] Ceiling Concentration Limits taken from Table 1, Part 503

* Geometric mean fecal coliform density

2013 BIOSOLIDS ANALYSIS RESULTS
BELTONA LAND RECLAMATION SITE
(Valley Creek WWTP)

Date	As mg/kg	Cd mg/kg	Cr mg/kg	Cu mg/kg	Pb mg/kg	Hg mg/kg	Mo mg/kg	Ni mg/kg	Se mg/kg	Zn mg/kg	% Moisture mg/kg	Fecal Coliform CFU/g*
1/15/2013	<PQL	<PQL	36	470	36	1.5	10	31	<PQL	1,200	80%	0
2/5/2013	<PQL	<PQL	46	520	48	1.3	11	38	<PQL	1,300	80%	0
3/5/2013	<PQL	<PQL	36	320	32	<PQL	<PQL	25	<PQL	830	77%	0
4/9/2013	<PQL	<PQL	49	440	47	1.7	7.8	43	<PQL	1,200	83%	14,000
5/7/2013	<PQL	<PQL	39	380	43	1.4	9.1	38	<PQL	970	84%	21
6/4/2013	<PQL	<PQL	33	270	29	1.4	<PQL	32	<PQL	710	71%	0
7/16/2013	<PQL	<PQL	37	280	24	1.0	8.6	30	<PQL	860	75%	0
8/6/2013	<PQL	<PQL	52	490	41	<PQL	13	44	<PQL	1,400	83%	23,000
9/10/2013	<PQL	<PQL	45	510	43	2.4	12	36	<PQL	1,500	86%	170,000
10/1/2013	<PQL	<PQL	72	530	55	1.8	20	37	<PQL	1,600	82%	130,000
11/2/2013	<PQL	<PQL	68	590	40	1.9	19	45	<PQL	1,900	83%	140,000
12/3/2013	<PQL	<PQL	65	610	39	1.7	22	50	19	1,900	84%	130,000
Average	<PQL	<PQL	**48**	**450**	**40**	**1.3**	**11**	**37**	<PQL	**1280**		
Maximum	<PQL	<PQL	**72**	**610**	**55**	**2.4**	**19**	**50**	19	**1,900**		
PQL	11	5.0	6.0	5.0	12	0.03	6.0	6.0	12	8		
EQ/PC Limit[1]	41	39	-	1,500	300	17	-	420	100	2,800	-	-
Ceiling Limit[2]	75	85	-	4,300	840	57	75	420	100	7,500	-	-

All pollutant concentrations given on a dry-weight basis

PQL = Practical Quantitation Limit

[1] Pollutant Concentration Limits taken from Table 3, Part 503.13

[2] Ceiling Concentration Limits taken from Table 1, Part 503

* Geometric mean fecal coliform density

2013 BIOSOLIDS ANALYSIS RESULTS
BELTONA LAND RECLAMATION SITE
(Village Creek WWTP)

Date	As mg/kg	Cd mg/kg	Cr mg/kg	Cu mg/kg	Pb mg/kg	Hg mg/kg	Mo mg/kg	Ni mg/kg	Se mg/kg	Zn mg/kg	% Moisture mg/kg	Fecal Coliform CFU/g*
1/15/2013	<PQL	<PQL	41	430	61	2.9	10	44	<PQL	1,100	71%	0
2/5/2013	<PQL	<PQL	41	460	67	2.5	9.8	46	<PQL	1,100	70%	0
3/5/2013	<PQL	<PQL	41	430	61	<PQL	11	41	<PQL	1,000	70%	0
4/9/2013	<PQL	<PQL	45	480	66	2.1	7.9	42	<PQL	1,100	72%	0
5/7/2013	<PQL	<PQL	44	470	70	3.5	11	41	<PQL	1,100	73%	81
6/4/2013	<PQL	<PQL	38	380	56	2.0	7.1	35	<PQL	970	71%	4
7/16/2013	<PQL	<PQL	36	350	43	1.6	6.2	35	<PQL	890	65%	0
8/6/2013	<PQL	<PQL	44	360	51	<PQL	6.5	35	12	970	68%	0
9/10/2013	<PQL	<PQL	38	370	49	4.2	7.2	36	<PQL	1,000	68%	0
10/1/2013	<PQL	<PQL	31	330	42	1.5	6.6	30	<PQL	830	68%	0
11/2/2013	<PQL	<PQL	38	390	51	0.46	8.2	37	<PQL	1,100	71%	0
12/3/2013	<PQL	<PQL	34	360	44	1.7	8.6	37	18	1,000	67%	0
Average	<PQL	<PQL	**39**	**400**	**55**	**1.9**	**8.3**	**38**	<PQL	**1,013**		
Maximum	<PQL	<PQL	**45**	**480**	**70**	**4.2**	**11**	**46**	**18**	**1,100**		
PQL	11	5.0	6.0	5.0	12	0.03	6.0	6.0	12	8		
EQ/PC Limit[1]	41	39	-	1,500	300	17	-	420	100	2,800	-	-
Ceiling Limit[2]	75	85	-	4,300	840	57	75	420	100	7,500	-	-

All pollutant concentrations given on a dry-weight basis

PQL = Practical Quantitation Limit

[1] Pollutant Concentration Limits taken from Table 3, Part 503.13

[2] Ceiling Concentration Limits taken from Table 1, Part 503

* Geometric mean fecal coliform density

Jefferson County Commission Environmental Service Department

Chain Of Custody / Sample Collection / Request For Analysis

Sample ID: CAHABA RIVER WWTP-BIO-SOLIDS

Sample Set-up Date: Time:

First Sample Date: Time:

Last Sample Date: Time:

Collection Date: 12-17-13 Time 0730

Sample Split? Yes ☐ | No ☐

Primary Measuring Device:

Sampler Type:

Flow Meter Type:

Sample Interval:

Sample Type: Grab X | Composite

[TVVC / TCVC / TCVV]

PRESERVATION METHODS:
A--Iced, 4° C.
B--Sulfuric Acid to pH < 2
C--Nitric Acid to pH < 2
D--NaOH to pH > 11

MUST BE COMPLETED!! → Preservation Method A by: WWTP ☑ by Barton Lab ☐ | Time: 0730

Sample Collected by: [signature] Date 12-17-13 Time 0730

Received by: [signature] Date 12-17-13 Time 0845

Relinquished by: [signature] Date 12-17-13 Time 0845

Received by: [signature] Date 12/17/13 Time 0908

Relinquished by: [signature] Date 12-17-13 Time 0901

Received by: [signature] Date 12/18/13 Time 1032

Relinquished by: [signature] Date 12/18/13 Time 1010

Check ☒ Requested Analyses

☒	Analyte	RESULTS	Units	METHOD Number	Ref
	BOD_5			5210 B	SM
	$CBOD_5$			5210 B	SM
	TSS			2540 D	SM
	pH			4500-H^+ B	SM
	COD			5220 D	SM
	TKN			351.2	R2
	NH_3-N			4500-NH_3 G	SM
X	Fecal Coliform	2.32×10^5	col/g	9222 D	SM
	Total Phosphorus			4500-P F	SM
	Residual Chlorine			4500-Cl^- G	SM
	Ortho-Phosphorus			4500-P F	SM
	TOC			5310 B	SM
	DO			4500-O C	SM
	NO_3^--N			4500-NO_3^- H	SM
	NO_2^--N			4500-NO_3^- H	SM
	Turbidity			2130 B	SM
	Hardness			2340 C	SM
	Oil & Grease			1664	R3
	Arsenic			3030 E, 3111B, 3113 B	SM
	Cadmium			3030 E, 3111B, 3113 B	SM
	Chromium			3030 E, 3111B, 3113 B	SM
	Copper			3030 E, 3111B, 3113 B	SM
	Lead			3030 E, 3111B, 3113 B	SM
X	Mercury			3112 B	SM
	Molybdenum			3030 E, 3111B, 3113 B	SM
	Nickel			3030 E, 3111B, 3113 B	SM
	Selenium			3030 E, 3111B, 3113 B	SM
	Silver			3030 F, 3111B, 3113 B	SM
	Zinc			3030 E, 3111B, 3113 B	SM
	Cyanide			4500-CN^- E	SM
	Volatile Organics			6210 D	SM
	Semi-Volatile Organics			6410 B	SM
	Sulfate			4500-SO_4^{2-} E	SM
X	503 METALS				

SM = Standard Methods, 19th Ed.

R2 = EPA-600/4-79-020

R3 = EPA Method 1664

R4 = EPA SW846

Biosolids Method	Ref
3050 B, 7060 A	R4
3050 B, 7130	R4
3050 B, 7190	R4
3050 B, 7210	R4
3050 B, 7420	R4
7471 B	R4
3050 B, 7481	R4
3050 B, 7520	R4
3050 B, 7740	R4
3050 B, 7950	R4

Mobile County Commission Environmental Service Department

Chain Of Custody / Sample Collection / Request For Analysis

2

Sample ID: CAHABA RIVER WWTP-BIO-SOLIDS

Primary Measuring Device:

Sample Set-up Date: Time:

Sampler Type:

First Sample Date: Time:

Flow Meter Type:

Last Sample Date: Time:

Sample Interval:

Collection Date: 12-17-13 Time 0730

Sample Type: Grab X | Composite

Sample Split? Yes ☐ | No ☐

[TVVC / TCVC / TCVV]

PRESERVATION METHODS:
A--Iced, 4° C.
B--Sulfuric Acid to pH < 2
C--Nitric Acid to pH < 2
D--NaOH to pH > 11

MUST BE COMPLETED!! → Preservation Method A by: WWTP ☑ by Barton Lab ☐ | Time: 0730

Sample Collected by [signature] 12-17-13 0730
Date Time

Relinquished by [signature] 12-17-13 0845
Date Time

Received by [signature] 12-17-13 0845
Date Time

Relinquished by [signature] 12-17-13 0908
Date Time

Received by [signature] 12/17/13 0908
Date Time

Relinquished by [signature] 12/18/13 1012
Date Time

Received by [signature] 12/18/13 1012
Date Time

2013121705-01

Check ☒ Requested Analyses	☒	Analyte	RESULTS	Units	METHOD Number	Ref
		BOD_5			5210 B	SM
		$CBOD_5$			5210 B	SM
		TSS			2540 D	SM
		pH			4500-H⁺ B	SM
		COD			5220 D	SM
		TKN			351.2	R2
		NH_3-N			4500-NH_3 G	SM
	X	Fecal Coliform	5.38×10^5	col/g	9222 D	SM
		Total Phosphorus			4500-P F	SM
		Residual Chlorine			4500-Cl G	SM
		Ortho-Phosphorus			4500-P F	SM
		TOC			5310 B	SM
		DO			4500-O C	SM
		NO_3-N			4500-NO_3 H	SM
		NO_2-N			4500-NO_3 H	SM
		Turbidity			2130 B	SM
		Hardness			2340 C	SM
		Oil & Grease			1664	R3
		Arsenic			3030 E, 3111B, 3113 B	SM
		Cadmium			3030 E, 3111B, 3113 B	SM
		Chromium			3030 E, 3111B, 3113 B	SM
		Copper			3030 E, 3111B, 3113 B	SM
		Lead			3030 E, 3111B, 3113 B	SM
	X	Mercury			3112 B	SM
		Molybdenum			3030 E, 3111B, 3113 B	SM
		Nickel			3030 E, 3111B, 3113 B	SM
		Selenium			3030 E, 3111B, 3113 B	SM
		Silver			3030 F, 3111B, 3113 B	SM
		Zinc			3030 E, 3111B, 3113 B	SM
		Cyanide			4500-CN⁻ E	SM
		Volatile Organics			6210 D	SM
		Semi-Volatile Organics			6410 B	SM
		Sulfate			4500-SO_4^{2-} E	SM
	X	503 METALS				

SM = Standard Methods, 19th Ed.

R2 = EPA-600/4-79-020

R3 = EPA Method 1664

R4 = EPA SW846

Biosolids Method	Ref
3050 B, 7060 A	R4
3050 B, 7130	R4
3050 B, 7190	R4
3050 B, 7210	R4
3050 B, 7420	R4
7471 B	R4
3050 B, 7481	R4
3050 B, 7520	R4
3050 B, 7740	R4
3050 B, 7950	R4

Jefferson County Commission Environmental Service Department

Chain Of Custody / Sample Collection / Request For Analysis

3

Sample ID: CAHABA RIVER WWTP-BIO-SOLIDS

Sample Set-up Date: Time:

First Sample Date: Time:

Last Sample Date: Time:

Collection Date: 12-17-13 Time: 0730

Sample Split? Yes ☐ | No ☐

Primary Measuring Device:

Sampler Type:

Flow Meter Type:

Sample Interval:

Sample Type: Grab X | Composite

[TVVC / TCVC / TCVV]

PRESERVATION METHODS:
A--Iced, 4° C.
B--Sulfuric Acid to pH < 2
C--Nitric Acid to pH < 2
D--NaOH to pH > 11

MUST BE COMPLETED!! ⇒ Preservation Method A by: WWTP ☑ by Barton Lab ☐ | Time: 0730

[signature] 12-17-13 0730 — Sample Collected by, Date, Time

[signature] 12-17-13 0845 — Relinquished by, Date, Time

[signature] 12-17-13 0845 — Received by, Date, Time

[signature] 12-17-13 0908 — Relinquished by, Date, Time

[signature] 12/17/13 0908 — Received by, Date, Time

[signature] 12/18/13 1030 — Relinquished by, Date, Time

[signature] 12/18/13 1030 — Received by, Date, Time

2013121703-01

Check ☒ Requested Analyses

☒	Analyte	RESULTS	Units	METHOD Number	Ref	Biosolids Method	Ref
	BOD_5						
	$CBOD_5$			5210 B	SM		
	TSS			5210 B	SM		
	pH			2540 D	SM		
	COD			$4500\text{-}H^+$ B	SM		
	TKN			5220 D	SM		
	NH_3-N			351.2	R2		
X	Fecal Coliform	3.25×10^5	col/g	$4500\text{-}NH_3$ G	SM		
	Total Phosphorus			9222 D	SM		
	Residual Chlorine			4500-P F	SM		
	Ortho-Phosphorus			$4500\text{-}Cl^-$ G	SM		
	TOC			4500-P F	SM		
	DO			5310 B	SM		
	NO_3^--N			4500-O C	SM		
	NO_2^--N			$4500\text{-}NO_3^-$ H	SM		
	Turbidity			$4500\text{-}NO_3^-$ H	SM		
	Hardness			2130 B	SM		
	Oil & Grease			2340 C	SM		
	Arsenic			1664	R3		
	Cadmium			3030 E, 3111B, 3113 B	SM	3050 B, 7060 A	R4
	Chromium			3030 E, 3111B, 3113 B	SM	3050 B, 7130	R4
	Copper			3030 E, 3111B, 3113 B	SM	3050 B, 7190	R4
	Lead			3030 E, 3111B, 3113 B	SM	3050 B, 7210	R4
X	Mercury			3030 E, 3111B, 3113 B	SM	3050 B, 7420	R4
	Molybdenum			3112 B	SM	7471 B	R4
	Nickel			3030 E, 3111B, 3113 B	SM	3050 B, 7481	R4
	Selenium			3030 E, 3111B, 3113 B	SM	3050 B, 7520	R4
	Silver			3030 E, 3111B, 3113 B	SM	3050 B, 7740	R4
	Zinc			3030 F, 3111B, 3113 B	SM		
	Cyanide			3030 E, 3111B, 3113 B	SM	3050 B, 7950	R4
	Volatile Organics			$4500\text{-}CN^-$ E	SM		
	Semi-Volatile Organics			6210 D	SM		
	Sulfate			6410 B	SM		
X	503 METALS			$4500\text{-}SO_4^{2-}$ E	SM		

SM = Standard Methods, 19th Ed.

R2 = EPA-600/4-79-020

R3 = EPA Method 1664

R4 = EPA SW846

2013121703-01

000920 AH f:server/Barton Forms/Sample Collection Forms

...County Commission Environmental Service Department

Chain Of Custody / Sample Collection / Request For Analysis

Sample ID: CAHABA RIVER WWTP-BIO-SOLIDS

Sample Set-up Date: Time:

First Sample Date: Time:

Last Sample Date: Time:

Collection Date: 12-17-13 Time: 0730

Sample Split? Yes ☐ | No ☐

Primary Measuring Device:

Sampler Type:

Flow Meter Type:

Sample Interval:

Sample Type: Grab X | Composite

[TVVC / TCVC / TCVV]

PRESERVATION METHODS:
A--Iced, 4° C.
B--Sulfuric Acid to pH < 2
C--Nitric Acid to pH < 2
D--NaOH to pH > 11

MUST BE COMPLETED!! → Preservation Method A by: WWTP ☑ by Barton Lab ☐ | Time: 0730

Sample Collected by [signature] 12-17-13 0730 Date Time — Relinquished by [signature] 12-17-13 0845 Date Time

Received by [signature] 12-17-13 0845 Date Time — Relinquished by [signature] 12-17-13 0908 Date Time

Received by [signature] 12/17/13 0908 Date Time — Relinquished by [signature] 12/18/13 1030 Date Time

Received by [signature] 12/18/13 1030 Date Time

2013121703-01

Check ☒ Requested Analyses

☒	Analyte	RESULTS	Units	METHOD Number	Ref	Biosolids Method	Ref
	BOD5			5210 B	SM		
	CBOD5			5210 B	SM		
	TSS			2540 D	SM		
	pH			4500-H+ B	SM		
	COD			5220 D	SM		
	TKN			351.2	R2		
	NH_3-N			4500-NH_3 G	SM		
X	Fecal Coliform	3.00 x 10^5	col/g	9222 D	SM		
	Total Phosphorus			4500-P F	SM		
	Residual Chlorine			4500-Cl- G	SM		
	Ortho-Phosphorus			4500-P F	SM		
	TOC			5310 B	SM		
	DO			4500-O C	SM		
	NO_3^--N			4500-NO_3^- H	SM		
	NO_2^--N			4500-NO_3^- H	SM		
	Turbidity			2130 B	SM		
	Hardness			2340 C	SM		
	Oil & Grease			1664	R3		
	Arsenic			3030 E, 3111B, 3113 B	SM	3050 B, 7060 A	R4
	Cadmium			3030 E, 3111B, 3113 B	SM	3050 B, 7130	R4
	Chromium			3030 E, 3111B, 3113 B	SM	3050 B, 7190	R4
	Copper			3030 E, 3111B, 3113 B	SM	3050 B, 7210	R4
	Lead			3030 E, 3111B, 3113 B	SM	3050 B, 7420	R4
X	Mercury			3112 B	SM	7471 B	R4
	Molybdenum			3030 E, 3111B, 3113 B	SM	3050 B, 7481	R4
	Nickel			3030 E, 3111B, 3113 B	SM	3050 B, 7520	R4
	Selenium			3030 E, 3111B, 3113 B	SM	3050 B, 7740	R4
	Silver			3030 F, 3111B, 3113 B	SM		
	Zinc			3030 E, 3111B, 3113 B	SM	3050 B, 7950	R4
	Cyanide			4500-CN- E	SM		
	Volatile Organics			6210 D	SM		
	Semi-Volatile Organics			6410 B	SM		
	Sulfate			4500-SO_4^{2-} E	SM		
X	503 METALS						

SM = Standard Methods, 19th Ed.

R2 = EPA-600/4-79-020

R3 = EPA Method 1664

R4 = EPA SW846

2013121703-01

Jefferson County Commission Environmental Service Department

Chain Of Custody / Sample Collection / Request For Analysis

Sample ID: CAHABA RIVER WWTP-BIO-SOLIDS

Primary Measuring Device:

Sample Set-up Date: Time:

Sampler Type:

First Sample Date: Time:

Flow Meter Type:

Last Sample Date: Time:

Sample Interval:

Collection Date: 12-17-13 Time 0730

Sample Type: Grab X | Composite [TVVC / TCVC / TCVV]

Sample Split? Yes ☐ | No ☐

PRESERVATION METHODS:
A--Iced, 4° C.
B--Sulfuric Acid to pH < 2
C--Nitric Acid to pH < 2
D--NaOH to pH > 11

MUST BE COMPLETED!! → Preservation Method A by: WWTP ☑ by Barton Lab ☐ | Time: 0730

Sample Collected by: [signature] Date 12-17-13 Time 0730

Relinquished by: [signature] Date 12-17-13 Time 0845

Received by: [signature] Date 12-17-13 Time 0845

Relinquished by: [signature] Date 12-17-13 Time 0908

Received by: [signature] Date 12/17/13 Time 0908

Relinquished by: [signature] Date 12/18/13 Time 1010

Received by: [signature] Date 12/18/13 Time 1010

2013121703-01

Check ☒ Requested Analyses	☒	Analyte	RESULTS	Units	METHOD Number	Ref
		BOD_5			5210 B	SM
		$CBOD_5$			5210 B	SM
		TSS			2540 D	SM
		pH			4500-H⁺ B	SM
		COD			5220 D	SM
		TKN			351.2	R2
		NH_3-N			4500-NH_3 G	SM
	X	Fecal Coliform	4.00 X10⁵	col/g	9222 D	SM
		Total Phosphorus			4500-P F	SM
		Residual Chlorine			4500-Cl⁻ G	SM
		Ortho-Phosphorus			4500-P F	SM
		TOC			5310 B	SM
		DO			4500-O C	SM
		NO_3^--N			4500-NO_3^- H	SM
		NO_2^--N			4500-NO_3^- H	SM
		Turbidity			2130 B	SM
		Hardness			2340 C	SM
		Oil & Grease			1664	R3
		Arsenic			3030 E, 3111B, 3113 B	SM
		Cadmium			3030 E, 3111B, 3113 B	SM
		Chromium			3030 E, 3111B, 3113 B	SM
		Copper			3030 E, 3111B, 3113 B	SM
		Lead			3030 E, 3111B, 3113 B	SM
	X	Mercury			3112 B	SM
		Molybdenum			3030 E, 3111B, 3113 B	SM
		Nickel			3030 E, 3111B, 3113 B	SM
		Selenium			3030 E, 3111B, 3113 B	SM
		Silver			3030 F, 3111B, 3113 B	SM
		Zinc			3030 E, 3111B, 3113 B	SM
		Cyanide			4500-CN⁻ E	SM
		Volatile Organics			6210 D	SM
		Semi-Volatile Organics			6410 B	SM
		Sulfate			4500-SO_4^{2-} E	SM
	X	503 METALS				

SM = Standard Methods, 19th Ed.

R2 = EPA-600/4-79-020

R3 = EPA Method 1664

R4 = EPA SW846

Biosolids Method	Ref
3050 B, 7060 A	R4
3050 B, 7130	R4
3050 B, 7190	R4
3050 B, 7210	R4
3050 B, 7420	R4
7471 B	R4
3050 B, 7481	R4
3050 B, 7520	R4
3050 B, 7740	R4
3050 B, 7950	R4

Jefferson County Commission Environmental Service Department

Chain Of Custody / Sample Collection / Request For Analysis

4

Sample ID: CAHABA RIVER WWTP-BIO-SOLIDS

Sample Set-up Date: Time:

First Sample Date: Time:

Last Sample Date: Time:

Collection Date: 12-17-13 Time 0730

Sample Split? Yes ☐ | No ☐

Primary Measuring Device:

Sampler Type:

Flow Meter Type:

Sample Interval:

Sample Type: Grab ☒ | Composite

[TVVC / TCVC / TCVV]

PRESERVATION METHODS:
A--Iced, 4° C.
B--Sulfuric Acid to pH < 2
C--Nitric Acid to pH < 2
D--NaOH to pH > 11

MUST BE COMPLETED!! → Preservation Method A by: WWTP ☑ by Barton Lab ☐ | Time: 0730

Sample Collected by: [signature] Date 12-17-13 Time 0730

Relinquished by: [signature] Date 12-17-13 Time 0845

Received by: [signature] Date 12-17-13 Time 0845

Relinquished by: [signature] Date 12-17-13 Time 0901

Received by: [signature] Date 12/17/13 Time 0908

Relinquished by: [signature] Date 12/18/13 Time 1012

Received by: [signature] Date 12/18/13 Time 1012

2013121705301

Check ☒ Requested Analysis	☒	Analyte	RESULTS	Units	METHOD Number	Ref
		BOD_5			5210 B	SM
		$CBOD_5$			5210 B	SM
		TSS			2540 D	SM
		pH			4500-H⁺ B	SM
		COD			5220 D	SM
		TKN			351.2	R2
		NH_3-N			4500-NH_3 G	SM
	X	Fecal Coliform	6.14×10^5	col/g	9222 D	SM
		Total Phosphorus			4500-P F	SM
		Residual Chlorine			4500-Cl⁻ G	SM
		Ortho-Phosphorus			4500-P F	SM
		TOC			5310 B	SM
		DO			4500-O C	SM
		NO_3-N			4500-NO_3⁻ H	SM
		NO_2-N			4500-NO_3⁻ H	SM
		Turbidity			2130 B	SM
		Hardness			2340 C	SM
		Oil & Grease			1664	R3
		Arsenic			3030 E, 3111B, 3113 B	SM
		Cadmium			3030 E, 3111B, 3113 B	SM
		Chromium			3030 E, 3111B, 3113 B	SM
		Copper			3030 E, 3111B, 3113 B	SM
		Lead			3030 E, 3111B, 3113 B	SM
	X	Mercury			3112 B	SM
		Molybdenum			3030 E, 3111B, 3113 B	SM
		Nickel			3030 E, 3111B, 3113 B	SM
		Selenium			3030 E, 3111B, 3113 B	SM
		Silver			3030 F, 3111B, 3113 B	SM
		Zinc			3030 E, 3111B, 3113 B	SM
		Cyanide			4500-CN⁻ E	SM
		Volatile Organics			6210 D	SM
		Semi-Volatile Organics			6410 B	SM
		Sulfate			4500-SO_4^{2-} E	SM
	X	503 METALS				

SM = Standard Methods, 19th Ed.

R2 = EPA-600/4-79-020

R3 = EPA Method 1664

R4 = EPA SW846

Biosolids Method	Ref
3050 B, 7060 A	R4
3050 B, 7130	R4
3050 B, 7190	R4
3050 B, 7210	R4
3050 B, 7420	R4
7471 B	R4
3050 B, 7481	R4
3050 B, 7520	R4
3050 B, 7740	R4
3050 B, 7950	R4

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Jefferson County Commission Environmental Service Department

Chain Of Custody / Sample Collection / Request For Analysis

Sample ID: CAHABA RIVER WWTP-BIO-SOLIDS	Primary Measuring Device:
Sample Set-up Date: Time:	Sampler Type:
First Sample Date: Time:	Flow Meter Type:
Last Sample Date: Time:	Sample Interval:
Collection Date: 12-17-13 Time 0730	Sample Type: Grab X | Composite
Sample Split? Yes ☐ | No ☐	[TVVC / TCVC / TCVV]

PRESERVATION METHODS:
A--Iced, 4° C.
B--Sulfuric Acid to pH < 2
C--Nitric Acid to pH < 2
D--NaOH to pH > 11

MUST BE COMPLETED!! → Preservation Method A by: WWTP ☑ by Barton Lab ☐ | Time: 0730

[signature] 12-17-13 0730	[signature] 12-17-13 0845
Sample Collected by Date Time	Relinquished by Date Time
[signature] 12-17-13 0845	[signature] 12-17-13 0908
Received by Date Time	Relinquished by Date Time
[signature] 12/17/13 0908	[signature] 12/18/13 1032
Received by Date Time	Relinquished by Date Time
[signature] 12/18/13 1032	
Received by Date Time	

Check ☒ Requested Analyses

☒	Analyte	RESULTS	Units	METHOD Number	Ref	Biosolids Method	Ref
	BOD_5						
	$CBOD_5$			5210 B	SM		
	TSS			5210 B	SM		
	pH			2540 D	SM		
	COD			$4500\text{-}H^+$ B	SM		
	TKN			5220 D	SM		
	NH_3-N			351.2	R2		
X	Fecal Coliform	4.83×10^5	col/g	$4500\text{-}NH_3$ G	SM		
	Total Phosphorus			9222 D	SM		
	Residual Chlorine			4500-P F	SM		
	Ortho-Phosphorus			$4500\text{-}Cl^-$ G	SM		
	TOC			4500-P F	SM		
	DO			5310 B	SM		
	NO_3^--N			4500-O C	SM		
	NO_2^--N			$4500\text{-}NO_3^-$ H	SM		
	Turbidity			$4500\text{-}NO_3^-$ H	SM		
	Hardness			2130 B	SM		
	Oil & Grease			2340 C	SM		
	Arsenic			1664	R3		
	Cadmium			3030 E, 3111B, 3113 B	SM	3050 B, 7060 A	R4
	Chromium			3030 E, 3111B, 3113 B	SM	3050 B, 7130	R4
	Copper			3030 E, 3111B, 3113 B	SM	3050 B, 7190	R4
	Lead			3030 E, 3111B, 3113 B	SM	3050 B, 7210	R4
X	Mercury			3030 E, 3111B, 3113 B	SM	3050 B, 7420	R4
	Molybdenum			3112 B	SM	7471 B	R4
	Nickel			3030 E, 3111B, 3113 B	SM	3050 B, 7481	R4
	Selenium			3030 E, 3111B, 3113 B	SM	3050 B, 7520	R4
	Silver			3030 E, 3111B, 3113 B	SM	3050 B, 7740	R4
	Zinc			3030 F, 3111B, 3113 B	SM	:	
	Cyanide			3030 E, 3111B, 3113 B	SM	3050 B, 7950	R4
	Volatile Organics			$4500\text{-}CN^-$ E	SM		
	Semi-Volatile Organics			6210 D	SM		
	Sulfate			6410 B	SM		
X	503 METALS			$4500\text{-}SO_4^{2-}$ E	SM		

SM = Standard Methods, 19th Ed.

R2 = EPA-600/4-79-020

R3 = EPA Method 1664

R4 = EPA SW846

2013121703-01

2013121703-01

Jefferson County Commission Environmental Service Department

Chain Of Custody / Sample Collection / Request For Analysis

Sample ID: CAHABA RIVER WWTP-BIO-SOLIDS

Primary Measuring Device:

Sample Set-up Date: Time:

Sampler Type:

First Sample Date: Time:

Flow Meter Type:

Last Sample Date: Time:

Sample Interval:

Collection Date: 12-17-13 Time 0730

Sample Type: Grab X | Composite

Sample Split? Yes ☐ | No ☐

[TVVC / TCVC / TCVV]

PRESERVATION METHODS:
A--Iced, 4° C.
B--Sulfuric Acid to pH < 2
C--Nitric Acid to pH < 2
D--NaOH to pH > 11

MUST BE COMPLETED!! → Preservation Method A by: WWTP ☑ by Barton Lab ☐ | Time: 0730

Sample Collected by [signature] 12-17-13 0730 (Date / Time)

Received by [signature] 12-17-13 0845 (Date / Time)

Received by [signature] 12/17/13 0908 (Date / Time)

Received by [signature] 12/18/13 1032 (Date / Time)

Relinquished by [signature] 12-17-13 0845 (Date / Time)

Relinquished by [signature] 12-17-13 0908 (Date / Time)

Relinquished by [signature] 12/18/13 1012 (Date / Time)

2013121703-01

2013121703-01

Check ☒ Requested Analyses	☒	Analyte	RESULTS	Units	METHOD Number	Ref
	X	~~BOD~~ Moisture	88	%	5210 B	SM
		$CBOD_5$			5210 B	SM
		TSS			2540 D	SM
		pH			4500-H^+ B	SM
		COD			5220 D	SM
		TKN			351.2	R2
		NH_3-N			4500-NH_3 G	SM
G.M.	X	Fecal Coliform	390,000	col/g	9222 D	SM
		Total Phosphorus			4500-P F	SM
		Residual Chlorine			4500-Cl^- G	SM
		Ortho-Phosphorus			4500-P F	SM
		TOC			5310 B	SM
		DO			4500-O C	SM
		NO_3^--N			4500-NO_3^- H	SM
		NO_2^--N			4500-NO_3^- H	SM
		Turbidity			2130 B	SM
		Hardness			2340 C	SM
		Oil & Grease			1664	R3
		Arsenic			3030 E, 3111B, 3113 B	SM
		Cadmium			3030 E, 3111B, 3113 B	SM
		Chromium			3030 E, 3111B, 3113 B	SM
		Copper			3030 E, 3111B, 3113 B	SM
		Lead			3030 E, 3111B, 3113 B	SM
	X	Mercury			3112 B	SM
		Molybdenum			3030 E, 3111B, 3113 B	SM
		Nickel			3030 E, 3111B, 3113 B	SM
		Selenium			3030 E, 3111B, 3113 B	SM
		Silver			3030 F, 3111B, 3113 B	SM
		Zinc			3030 E, 3111B, 3113 B	SM
		Cyanide			4500-CN^- E	SM
		Volatile Organics			6210 D	SM
		Semi-Volatile Organics			6410 B	SM
		Sulfate			4500-SO_4^{2-} E	SM
	X	503 METALS				

SM = Standard Methods, 19th Ed.

R2 = EPA-600/4-79-020

R3 = EPA Method 1664

R4 = EPA SW846

Biosolids Method	Ref
3050 B, 7060 A	R4
3050 B, 7130	R4
3050 B, 7190	R4
3050 B, 7210	R4
3050 B, 7420	R4
7471 B	R4
3050 B, 7481	R4
3050 B, 7520	R4
3050 B, 7740	R4
3050 B, 7950	R4

Barton Laboratory

BIOSOLIDS BACTERIAL ANALYSIS

Analysis Date: 12/17/13

Sample ID: Cahaba

Date / Time In: 12/17 / 1230

Sample Date / Time: 12/17/13 / 0730

Date / Time Read: 12/18 / 1230

Lab Analyst: TR

TEST(S) PERFORMED:

Fecal Coliform [X]

Total Coliform [ ]

Fecal Strep [ ]

Other [ ]

Summary of Geometric Mean Calculations:

G.M. = 390,000 colonies per gram of dry solids.

	Dilution Used or mL of Sample	Colonies Counted	% Dry Solids	pH	Colonies Counted X 100 / mL Sample X % Dry Solid	of Log Geometric Mean $\sqrt[N]{(X_1)(X_2)\ldots(X_N)}$
①	.001	28	12		$\frac{2800}{.001 \times 12} = 2.33 \times 10^5$	5.37
②	.0011	71	12		$\frac{7100}{.0011 \times 12} = 5.38 \times 10^5$	5.73
③	.001	39	12		$\frac{3900}{.001 \times 12} = 3.25 \times 10^5$	5.51
④	.001	36	12		$\frac{3600}{.001 \times 12} = 3.00 \times 10^5$	5.48
⑤	.001	48	12		$\frac{4800}{.001 \times 12} = 4.00 \times 10^5$	5.60
⑥	.0011	81	12		$\frac{8100}{.0011 \times 12} = 6.14 \times 10^5$	5.79
⑦	.001	58	12		$\frac{5800}{.001 \times 12} = 4.83 \times 10^5$	5.68
8						$\bar{x} = 5.59$
9	Avg %	Solids:	12%			
10	Avg %	Moisture	88%			
Blank	.01	0			G.M. = 390,000 colonies per gram of dry solids.	

Barton Laboratory

BIOSOLIDS

Coliform Colonies Counted

Sample ID: Cahaba

Sample Date / Time: 12/17/13 / ~~1230~~ 0730

Date / Time Counted: 12/18/13 / 1230

Lab Analyst: TRiley

COLIFORM COLONIES COUNTED

% Solids	Sample Number	0.01 mL Filtration	0.001 mL Filtration	0.0001 mL Filtration	0.00001 mL Filtration	0.000001 mL Filtration
	1	TNTC	~~60~~ 28	2		
	2		64	7		
	3		39	7		
	4		36	4		
	5		48	3		
	6		72	9		
	7		58	7		
	8					
	9					
	10					
	Blank	0	0	0		

SECTION 5

AGRONOMIC RATE INFORMATION AND CALCULATIONS

AGRONOMIC RATE
BELTONA LAND RECLAMATION SITE

Summary:
The Beltona Land Reclamation Site is a former strip mine site located in northwestern Jefferson County. The Environmental Services Department is assisting the property owner in the reclamation of this site through the land application of biosolids. In the areas that have not received any biosolids applications, no vegetation other than "scrub" vegetation is present and growing. In the areas that have received biosolids applications, Tifton Bermuda and Rye grass has been planted for nitrogen uptake.

The local Agricultural Cooperative Extension Service has recommended a fertilizer rate of 600 lb Nitrogen/Ac/year for the mine reclamation site. These calculations are based on six cuttings of hay each year (four harvests of Bermuda grass and two harvests of Rye grass each year), with 100 lb Nitrogen per acre needed for each cutting.

Agronomic Rate Considerations:

1) The Agronomic Calculations presented in this report are based on an extension bulletin worksheet entitled "Calculating Biosolids Application Rates in Agriculture" (1998), developed by Craig Cogger and Dan Sullivan for the Pacific Northwest. This bulletin uses widely accepted procedures for nitrogen budgeting which are applicable across the United States.

2) During analysis, NH_4^+ -N is often converted to NH_3-N and analytical results are then reported as NH_3-N. Both forms are plant available and this combined analysis does not diminish the quality of the result.

3) There is no additional nitrogen applied to the reclamation site by Jefferson County (no fertilizer or irrigation water).

4) Biosolids from the Valley and Village WWTP's are applied to each plot on an annual basis throughout the winter months. These biosolids are anaerobically digested, mechanically dewatered, and lime stabilized, and are not incorporated into the soil following land application.

5) Biosolids were applied at a rate of **11** dry tons/acre.

AGRONOMIC RATE CALCULATIONS – BELTONA LAND RECLAMATION SITE

FORMULA:

Plant Available Nitrogen (PAN) = Available Organic Nitrogen + Inorganic Nitrogen
= [(Organic Nitrogen)(Organic Mineralization Rate)] + [(NH_4)(%NH_4 Retained) + Nitrate]

GIVEN:

- During analysis, NH_4^+ -N is converted to NH_3-N and analytical results are then reported as NH_3-N. This combined analysis does not diminish the quality of the result.

- The TKN, NH_3 and NO_3 results are averages of data available during 2013. All results are reported on a dry-weight basis.

  $TKN_{(average)}$ = 37,000 mg/Kg x 0.002 (converts mg/Kg to lb/dry ton) = 74.0 lb/dry ton
  $NH_{3(average)}$ = 1,183 mg/Kg x 0.002 = 2.4 lb/dry ton
  $NO_{3(average)}$ = 271 mg/Kg x 0.002 = 0.5 lb/dry ton

  Organic Nitrogen = TKN - NH_3 - NO_3 = 74.0 – 2.4 – 0.5 = 71.1 lb N/dry ton

- Calculations for the Beltona site are performed considering anaerobically digested, dewatered, and lime stabilized biosolids.

NITROGEN CREDITS FOR PREVIOUS BIOSOLIDS APPLICATIONS:

- Biosolids that were applied from 2009 through 2012 had an average Organic Nitrogen content of 31,463 mg/kg. These biosolids were applied at an average rate of 21 dry tons per acre. Using Table 1 of the Worksheet:

  Nitrogen Credit for 31,463 mg/kg:
  = 8.1 lb PAN per dry ton (years 2-5) x 21 dry tons per acre
  = 170 lb PAN per acre Nitrogen credit

- Tifton Bermuda/Rye grass nitrogen requirements = 600 lb N/Ac/Yr (based on Agricultural Cooperative Extension Service recommendation of six cuttings of hay each year with 100 lb N/Ac needed for each cutting). **With a Nitrogen Credit of 170 lb/acre, approximately 430 lb N/Ac/year is needed from the current applications of biosolids.**

AGRONOMIC RATE CALCULATIONS – BELTONA LAND RECLAMATION SITE

CALCULATIONS:

Anaerobically Digested, Dewatered, Lime Stabilized, Not Incorporated

$TKN_{(average)}$ = 37,000 mg/Kg x 0.002 (converts mg/Kg to lb/dry ton) = 74.0 lb/dry ton
$NH_{3(average)}$ = 1,183 mg/Kg x 0.002 = 2.4 lb/dry ton
$NO_{3(average)}$ = 271 mg/Kg x 0.002 = 0.5 lb/dry ton

Organic Nitrogen = TKN - NH_3 - NO_3 = 74.0 – 2.4 – 0.5 = 71.1 lb N/dry ton

Organic Nitrogen:
Mineralization Rate (Worksheet, Table 3): Anaerobic Digestion, Dewatered = 20% – 40%

Percent of Organic N available in the first year = 30% (average)

Total Organic Nitrogen available in the first year = 71.1 x 30% = 21.3 lb/dry ton

Ammonium Nitrogen:
% NH_4 Retained (Worksheet, Table 2): Not Incorporated, Lime Stabilized = 10%

Percent of Ammonia retained after application = 10%

Ammonium Nitrogen retained after application = 2.4 lb/dry ton x 10% = 0.2 lb /dry ton

Estimated Plant Available Nitrogen (PAN):
PAN = Available Organic Nitrogen + Inorganic Nitrogen = 21.3 + 0.2 + 0.5 = 22 lb N/dt

Agronomic Rate:
430 lb N/Ac/year ÷ 22 lb N/dry ton = **20 dry tons/Acre/year**

Biosolids were applied at the Beltona site throughout 2013 at a rate of 11 dry tons per acre. As can be seen from the above calculations, and as required by the 40 CFR Part 503 regulations, the anaerobically digested biosolids are being applied at a rate equal to or less than the agronomic rate for the crops grown.

AGRONOMIC RATE
FLAT TOP/BESSIE MINES LAND RECLAMATION SITE

Summary:
The Flat Top/Bessie Mines Land Reclamation Site is also a former strip mine site located in northwestern Jefferson County. The Environmental Services Department is assisting the property owner in the reclamation of this site through the land application of biosolids. At this site there is currently no soil mass present for growing vegetation, and in order to build soil mass, biosolids are recommended to be applied at a rate of 600 lb Nitrogen/Ac/year. When soil mass becomes adequate to sustain crop growth, Tifton Bermuda and Rye grass will be planted for nitrogen uptake.

Agronomic Rate Considerations:

1) There is no additional nitrogen applied to the reclamation site by Jefferson County (no fertilizer or irrigation water) and there is very little to no plant available nitrogen currently present at the site.

2) Approximately 62% of the land applied biosolids were anaerobically digested, followed by either mechanical dewatering or drying beds. The remaining biosolids were aerobically digested, followed by either mechanical dewatering or drying beds. Calculations were performed considering the three biosolids treatment and dewatering scenarios.

3) Typically, the anaerobically digested biosolids are lime stabilized.

4) Biosolids from all plants are incorporated into the soil within six (6) hours of application.

5) Biosolids applications currently occur on a year-round basis at a rate of **22** dry tons/acre.

AGRONOMIC RATE CALCULATIONS – FLAT TOP/BESSIE MINES LAND RECLAMATION SITE

FORMULA:

Plant Available Nitrogen (PAN) = Available Organic Nitrogen + Inorganic Nitrogen
= [(Organic Nitrogen)(Organic Mineralization Rate)] + [(NH_4)(%NH_4 Retained) + Nitrate]

GIVEN:

- During analysis, NH_4^+ -N is converted to NH_3-N and analytical results are then reported as NH_3-N. This combined analysis does not diminish the quality of the result.

- The TKN, NH_3 and NO_3 results are averages of data available during 2013. All results are reported on a dry-weight basis.

  $TKN_{(average)}$ = 37,000 mg/Kg x 0.002 (converts mg/Kg to lb/dry ton) = 74.0 lb/dry ton
  $NH_{3(average)}$ = 1,183 mg/Kg x 0.002 = 2.4 lb/dry ton
  $NO_{3(average)}$ = 271 mg/Kg x 0.002 = 0.5 lb/dry ton

  Organic Nitrogen = TKN - NH_3 - NO_3 = 74.0 – 2.4 – 0.5 = 71.1 lb N/dry ton

- Being a reclamation site, biosolids are applied at a rate of 600 lb N/Ac/Yr to build soil mass. When soil mass becomes adequate to sustain crop growth, Tifton Bermuda and Rye grass will be planted for nitrogen uptake.

- Calculations will be performed considering both biosolids scenarios: (1) anaerobically digested, dewatered, and lime stabilized, and (2) aerobically digested, mechanically dewatered or drying beds, and incorporated into the soil within six hours of application.

AGRONOMIC RATE CALCULATIONS – FLAT TOP/BESSIE MINES LAND RECLAMATION SITE

CALCULATIONS:

Anaerobically Digested, Dewatered, Lime Stabilized, Incorporated within Six Hours

-and-

Aerobically Digested, Mechanically Dewatered or Drying Beds, Incorporated within Six Hours

$TKN_{(average)}$ = 37,000 mg/Kg x 0.002 (converts mg/Kg to lb/dry ton) = 74.0 lb/dry ton
$NH_{3(average)}$ = 1,183 mg/Kg x 0.002 = 2.4 lb/dry ton
$NO_{3(average)}$ = 271 mg/Kg x 0.002 = 0.5 lb/dry ton

Organic Nitrogen = TKN - NH_3 - NO_3 = 74.0 – 2.4 – 0.5 = 71.1 lb N/dry ton

Organic Nitrogen:
Mineralization Rate (Worksheet, Table 3): Anaerobic Digestion, Dewatered = 20%-40%
Aerobic Digestion = 30% – 45%
Drying Beds = 15%-30%

Percent of Organic N available in the first year = 29% (weighted average)

Total Organic Nitrogen available in the first year = 71.1 x 29% = 20.6 lb/dry ton

Ammonium Nitrogen:
% NH_4 Retained (Worksheet, Table 2): Incorporated (0-2 Days), Dewatered = 60%,
Incorporated (0-2 Days), Drying Bed = 100%
Incorporated (0-2 Days), Alkaline Stabilized = 10%
Percent of Ammonia retained after application = 52% (weighted average)

Ammonium Nitrogen retained after application = 2.4 lb/dry ton x 52% = 1.25 lb /dry ton

Estimated Plant Available Nitrogen (PAN):
PAN = Available Organic Nitrogen + Inorganic Nitrogen = 20.6 + 1.25 + 0.5 = 22.35 lb N/dt

Agronomic Rate:
600 lb N/Ac/year ÷ 22.35 lb N/dry ton = **27 dry tons/Acre/year**

As can be seen from the above calculations, **the current biosolids application rate of 22 dry tons per acre is equal or below the calculated Agronomic Rate for the anaerobically digested biosolids**. Therefore, as required by the 40 CFR Part 503 regulations, the anaerobically digested biosolids are being applied at a rate equal to or less than the agronomic rate for the crops grown.

APPENDIX A

AGRONOMIC RATE SUPPORTING DOCUMENTATION

ALABAMA COOPERATIVE **Extension** SYSTEM

Your Experts for Life

Jefferson County Extension Office
2121 Building, Suite 1700
2121 8th Avenue North
Birmingham, AL 35203-2387
Telephone: (205) 325-5342
FAX: (205) 325-5690

November 19, 2003

Mr. David Denard
A-300 Courthouse Annex
716 Richard Arrington Jr. Blvd.
Birmingham, Al 35203

David:

Enclosed is a fact sheet that we based our 600lb/N/ACRE recommendation related to the county's hay production/Bio-solid project.

The reasoning behind the high rate of nitrogen is to maximize forage tonnage which in turn will increase sludge uptake and breakdown.

The yearly fertilization schedule is based on six cuttings using 100lb/N/ac/cutting. The extra cuttings comes from over seeding the Bermudagrass with ryegrass in the fall. The ryegrass can be cut twice, while Bermudagrass is normally cut four times each year.

If you have questions or comments related to this schedule, feel free to give me a call.

Sincerely,

David Hubbard
County Extension Agent

DH/fb

PNW511

Worksheet for Calculating Biosolids Application Rates in Agriculture

By Craig Cogger, Extension Soil Scientist, WSU-Puyallup
and Dan Sullivan, Extension Soil Scientist, Oregon State University

Overview

This bulletin will walk you through the calculations that yield the biosolids agronomic rate. This rate is based on biosolids quality (determined by analytical results), site and crop nitrogen requirements, and regulatory limits for trace element application. In almost all cases, nitrogen controls the biosolids application rate. By calculating the agronomic rate, managers can match the plant-available N supplied by biosolids to crop N needs.

The calculations consist of 6 steps:

1. Collect information on the site and crop, including crop N requirement.
2. Estimate the plant-available N needed from the biosolids application.
3. Collect biosolids nutrient data.
4. Estimate plant-available N per dry ton of biosolids.
5. Calculate the agronomic biosolids application rate on a dry ton basis.
6. Convert the application rate to an "as is" basis.

This bulletin consists of:

- A worksheet with instructions for completing the application rate calculations.
- The same calculations in equation form for those who prefer using equations.
- Tables for calculating trace element loading.

To learn more about the use and management of biosolids as a fertilizer, refer to *Fertilizing with Biosolids*, PNW508, which is the companion to this bulletin.

A Pacific Northwest Extension Publication
Washington • Idaho • Oregon

Worksheet

Step 1. Collect Site Information.

Soil and crop information:

Line No.		Your Information	Example
1.1	Soil series and texture (NRCS soil survey)		Puyallup sandy loam
1.2	Yield goal (grower, agronomist) (units/acre*)		5 tons/acre/yr
1.3	Crop rotation (grower; e.g., wheat/fallow/wheat)		perennial grass
1.4	Plant-available N needed to produce yield goal (fertilizer guide; agronomist) (lb N/acre/yr)		200

Plant-available N provided by other sources:

Line No.		Your Calculation	Example	Units
	Pre-application testing			
1.5	Nitrate-N applied in irrigation water		10	lb N/acre
1.6	Preplant nitrate-N in root zone (east of Cascades)**		—	lb N/acre
	Adjustments to typical soil N mineralization			
1.7	Plowdown of cover or green manure crop**		—	lb N/acre
1.8	Previous biosolids applications (Table 1)		30	lb N/acre
1.9	Previous manure applications		—	lb N/acre
	Grower information			
1.10	N applied at seeding (starter fertilizer)		—	lb N/acre
1.11	Total plant-available N from other sources (sum of lines 1.5 through 1.10)		40	lb N/acre

*Yield goals may be expressed as a weight (tons, lb, etc.) or as a volume (bushels).

**Do not list here if these N sources were accounted for in the nitrogen fertilizer recommendation from a university fertilizer guide.

Step 2. Estimate the Amount of Plant-Available N Needed from Biosolids.

Line No.		Your Calculation	Example	Units
2.1	Plant-available N needed to produce yield goal (from line 1.4)		200	lb N/acre
2.2	Plant-available N from other sources (from line 1.11)		40	lb N/acre
2.3	Amount of plant-available N needed from biosolids (line 2.1 – line 2.2)		160	lb N/acre

Step 3. Collect Biosolids Data.

Application Information:

Line No.		Your Information	Example
3.1	Moisture content of biosolids (liquid or solid; see Table 3, pg. 8)		liquid
3.2	Biosolids processing method (see Table 3, pg. 8)		anaerobic
3.3	Method of application (surface or injected)		surface
3.4	Number of days to incorporation of biosolids		no incorporation
3.5	Expected application season		Mar.-Sept.

Laboratory Biosolids Analysis (dry weight basis):

If your biosolids analysis is on an "as is" or wet weight basis, you will need to divide your analysis by the percent solids (line 3.10) and multiply the result by 100 to convert to a dry weight basis.

Line No.		Your Calculation	Example	Units
3.6	Total Kjeldahl N (TKN)*		50,000	mg/kg
3.7	Ammonium N*		10,000	mg/kg
3.8	Nitrate N *, **		not analyzed	mg/kg
3.9	Organic N*** (line 3.6 – line 3.7)		40,000	mg/kg
3.10	Total solids		2.5	percent

*If your analysis is in percent, multiply by 10,000 to convert to mg/kg.

**Nitrate-N analysis required for composted or aerobically-digested biosolids, but not for anaerobically-digested biosolids.

***Organic N = total Kjeldahl N - ammonium N.

Step 4. Estimate Plant-Available N Per Dry Ton of Biosolids.

Convert biosolids N analysis to lb per dry ton:

Line No.		Your Calculation	Example	Units
4.1	Total Kjeldahl N (TKN) (line 3.6 x 0.002)		100	lb N/dry ton
4.2	Ammonium N (line 3.7 x 0.002)		20	lb N/dry ton
4.3	Nitrate N (line 3.8 x 0.002)		not analyzed	lb N/dry ton
4.4	Organic N (line 4.1 – 4.2)		80	lb N/dry ton

Estimate Inorganic N Retained:

4.5	Percent of ammonium-N retained after application (Table 2, pg. 7)		60	percent
4.6	Ammonium-N retained after application (line 4.2 x line 4.5/100)		12	lb N/dry ton
4.7	Calculate biosolids inorganic N retained (line 4.3 + line 4.6)		12	lb N/dry ton

Estimate Organic N Mineralized:

4.8	Percent of organic N that is plant-available in Year 1 (Table 3, pg. 8)		30	percent
4.9	First year plant-available organic N (line 4.4 x line 4.8/100)		24	lb N/dry ton

Plant-available N:

4.10	Estimated plant-available N Add available inorganic N and available organic N (line 4.7 + line 4.9)		36	lb N/dry ton

Step 5. Calculate the Agronomic Biosolids Application Rate.

Line No.		Your Calculation	Example	Units
5.1	Amount of plant-available N needed from biosolids (from line 2.3)		160	lb N/acre
5.2	Estimated plant-available N in biosolids (from line 4.10)		36	lb N/dry ton
5.3	Agronomic biosolids application rate (line 5.1/line 5.2)		4.4	dry ton/acre

Step 6. Convert to "As Is" Biosolids Basis.

Desired Units		Your Calculation	Example
Gallons per acre =	(line 5.3/line 3.10) x 24,000		42,240
Acre inches per acre =	(line 5.3/line 3.10) x 0.88		1.55
Wet tons per acre =	(line 5.3/line 3.10) x 100		176

How to Use the Worksheet

Step 1. Collect Site Information.

Soil Series and Surface Soil Texture (Line 1.1)

Find the location on the county NRCS soil survey. Record the series name and surface texture of the predominant soil.

Crop Yield Goal (Line 1.2)

Field records are the best source for crop yield estimates. You can find proven yields for most grain farms from the local Farm Service Agency office. For most other cropping systems, grower records are the only source available. Be sure to note whether the yield records are on an "as is" or dry matter basis. Where field records are not available, you can make first-year estimates for a project using NRCS soil surveys, county production averages, or other local data sources.

A site used repeatedly for biosolids application should have yield data collected each year. Use this accumulated data for determining crop nitrogen requirement. If crop yield data is not kept, you may need to conduct additional monitoring (e.g., post-harvest soil nitrate testing) to be sure biosolids are applied at an agronomic rate.

Yield data is typically not available for grazed pastures because grazing animals consume the crop directly in the field. In these cases omit the yield goal, and go directly to Line 1.4. Estimate plant nitrogen needs from the appropriate pasture fertilizer guide recommendation, based on the level of pasture management.

Crop Rotation (Line 1.3)

Consult with the grower and discuss the range of possible crop rotations. Rotations that include root crops or other crops with a long post-application waiting period are not suitable for Class B biosolids applications.

Plant-Available N Needed to Produce Yield Goal (Line 1.4)

You can estimate plant-available-N needs by referring to university fertilizer guides or consulting a qualified agronomist.

University Fertilizer Guides

Land grant universities (Washington State University, Oregon State University, University of Idaho) publish fertilizer guides that estimate crop nitrogen requirements. Use the fertilizer guide most appropriate for the site and crop. For major crops, guides may cover irrigated or rainfed (dryland) cropping and different geographic areas. Don't use guides produced for irrigated sites when evalu-

ating dryland sites. When appropriate guides do not exist, consult the local Cooperative Extension or Natural Resources Conservation Service office, or a qualified agronomist for assistance.

Nitrogen fertilizer application rates listed in the fertilizer guides are based on field growth trials under the specified climate and cultural conditions. Growth trial results are averaged over a variety of soil types and years. Note that fertilizer guide recommendations are not the same as crop uptake. This is because the fertilizer guides account for N available from mineralization of soil organic matter and the efficiency of N removal by the crop.

The N rate recommended in fertilizer guides assumes average yields, good management practices, and removal of N from the field through crop harvest or grazing. In terms of satisfying crop N needs, plant-available N from biosolids application is considered equal to fertilizer N.

Agronomist Calculations

Because of the general nature of university fertilizer guides, it may be worthwhile to have a qualified agronomist calculate how much plant-available N is needed for a specific field. Always use the same method to calculate the N requirements. You will need to document your reasons for using agronomist calculations instead of the university fertilizer guide.

Plant-available N provided by other sources (Lines 1.5-1.11)

To make sure there isn't too much nitrogen applied to a crop, you must determine how much nitrogen comes from sources other than biosolids and soil organic matter. These sources of N are grouped into three categories in the worksheet:

- Plant-available N estimated by pre-application testing
- Adjustments to typical soil organic N mineralization (usually obtained from an agronomist)
- Information supplied by the grower

N estimated by pre-application testing (Lines 1.5-1.6)

Irrigation Water
Since the amount of nitrate-N in irrigation water varies, it should be determined by water testing. Irrigation water containing 5 mg nitrate-N per liter will contribute 1.1 pounds of nitrogen per acre inch applied; irrigation water containing 10 mg nitrate-N per liter will contribute 2.3 pounds of N per acre inch.

Preplant Nitrate-N in the Root Zone (east of Cascades)
You can estimate the preplant nitrate-N in the root zone by testing the soil in early spring. Sample in one-foot increments to a depth of at least two feet. University of Idaho Cooperative Extension Service Bulletin No. 704, *Soil Sampling*, is a good reference for soil sampling procedures.

Some fertilizer guides use preplant soil nitrate-N when calculating N fertilizer application rates. If you use these guides, don't count soil test nitrate-N in our worksheet. It has already been accounted for in the recommended fertilizer N rate prescribed in the guide.

Adjustments to typical soil N mineralization (Lines 1.7-1.9)

Nitrogen mineralization is the release of nitrogen from organic forms to plant-available inorganic forms (ammonium and nitrate). Soil organic matter supplies plant-available N through mineralization, but this is accounted for in the fertilizer guides. Sites with a history of cover crops, biosolids applications, or manure applications supply more plant-available N than do sites without a history of these inputs, and biosolids recommendations must be adjusted based on this additional supply of N.

Plowdown of Cover or Green Manure Crops

Green manures and cover crops are not removed from the field, but are recycled back into the soil by tillage. You can get an estimate of the N contributed from this plowdown by referring to the university fertilizer guides, or by estimating the yield and nitrogen concentration of the cover crop. Recovery of green manure N by the next crop ranges from 10-50% of the total N added to the soil by the cover crop. Estimates of plant-available N contributed by green manure crops should be made by a qualified agronomist.

Previous Biosolids Applications

Previous biosolids applications contribute to plant-available nitrogen in the years after the initial application. In the worksheet, they are considered as "N from other sources." We estimate that 8, 3, 1 and 1 percent of the organic N originally applied mineralizes in Years 2, 3, 4 and 5 after application. After Year 5, biosolids N is considered part of stable soil organic matter and is not included in calculations.

Table 1. Estimated nitrogen credits for previous biosolids applications at a site.

	Years After Biosolids Application			
	Year 2	Year 3	Years 4 and 5	Cumulative Years 2, 3, 4 and 5
Biosolids Organic N as applied	Percent of Organic N Applied First Year			
	8	3	1	13
mg/kg (dry wt basis)	Plant-available N released, lb N per dry ton			
10000	1.6	0.6	0.2	2.6
20000	3.2	1.2	0.4	5.2
30000	4.8	1.8	0.6	7.8
40000	6.4	2.4	0.8	10.4
50000	8.0	3.0	1.0	13.0
60000	9.6	3.6	1.2	15.6

In using Table 1, consider the following example. Suppose:

- You applied biosolids with an average organic N content of 30,000 mg/kg
- Applications were made the previous 2 years
- The application rate was 4 dry tons per acre

Table 1 gives estimates of nitrogen credits *in terms of the organic N originally applied.* Look up 30,000 mg/kg under Year 2 and Year 3 columns in the table. The table estimates 4.8 lb plant-available N per dry ton for year 2, and 1.8 lb plant-available N for year 3 (two-year credit of 6.6 lb N per dry ton). To calculate the N credit in units of lb/acre, multiply your application rate (4 dry ton/acre) by the N credit per ton (6.6 lb N/dry ton). The N credit is 26.4 lb plant-available N per acre.

Previous Manure Applications
Previous manure applications contribute to plant-available nitrogen in a similar manner to previous biosolids applications. To estimate this contribution, consult an agronomist.

Information supplied by the grower (Line 1.10)

N Applied at Seeding
For best growth, some crops depend on starter fertilizers (N applied at seeding). These fertilizers usually supply N, P and S. Examples are 16-20-0, 10-34-0. Starters are usually applied at rates that supply 10-30 lb N per acre. Enter all of the N supplied by starter fertilizer on line 1.10 in the worksheet.

Step 2. Estimate Plant-Available N Needed from Biosolids.

Next you will estimate the amount of plant-available N the biosolids must provide. This is the difference between the total plant-available N needed to produce the yield goal (line 1.4) and the plant-available N from other sources (line 1.11).

Step 3. Collect Biosolids Data.

To make the calculation, managers will need the following analyses:

- Total Kjeldahl N (TKN)
- Ammonium-N (NH_4-N)
- Nitrate-N (NO_3-N; composted or aerobically digested biosolids only)
- Percent total solids

If your laboratory results are on an "as is" or wet weight basis, you must convert them to a dry weight basis. To convert from an "as-is" to a dry weight basis, divide your analysis by the percent solids in the biosolids and multiply the result by 100.

Total Kjeldahl N includes over 95% of the total nitrogen in biosolids. In using the worksheet, we will assume that total Kjeldahl N equals total N.

Ammonium-N usually makes up over 95% of the total inorganic N in most biosolids. Ammonium-N includes both ammonia (NH_3) and ammonium (NH_4^+). Depending on your laboratory, results for ammonium-N may be expressed as either ammonia-N or ammonium-N.

Nitrate-N analyses also include small amounts of nitrite. Nitrite concentrations are negligible in biosolids. There may be significant amounts of nitrate in aerobically-digested biosolids or in composts. There is little nitrate in anaerobically-digested biosolids; therefore, nitrate analysis is not needed for these materials.

Determine biosolids organic N by subtracting ammonium-N from total Kjeldahl N (line 3.6 - line 3.7). Percent total solids analyses are used to calculate application rates. Biosolids applications are calculated as the dry weight of solids applied per acre (e.g., dry tons per acre).

Step 4. Estimate Plant-Available N Per Dry Ton of Biosolids.

The estimate of plant-available N per dry ton of biosolids includes:

- Some of the ammonium-N
- All of the nitrate-N
- Some of the organic N

Inorganic N Retained (Lines 4.5-4.7)

Ammonium-N (Lines 4.5-4.6)

Under some conditions, ammonium is readily transformed to ammonia and lost as a gas. This gaseous ammonia loss reduces the amount of plant-available N supplied by biosolids. The following section explains the factors used to estimate ammonia-N retained in plant-available form after application.

Biosolids processing
Some types of biosolids processing cause most of the ammonia-N to be lost as ammonia gas or converted to organic forms before application:

- Drying beds
- Alkaline stabilization at pH 12
- Composting

Application method
Ammonia loss occurs only with surface application. Injecting liquid biosolids eliminates ammonia loss, since the injected liquid is not exposed to the air. Surface applications of liquid biosolids lose less ammonia than do dewatered biosolids. For liquid biosolids, the ammonia is less concentrated and is held as NH_4^+ on negatively-charged soil surfaces after the liquid contacts the soil.

Ammonia loss is fastest just after application to the field. As ammonia is lost, the remaining biosolids are acidified—that is, each molecule of NH_3 loss generates one molecule of H^+ (acidity). Acidification gradually slows ammonia loss. Biosolids that remain on the soil surface will eventu-

ally reach a pH near 7, and further ammonia losses will be small. Losses of ammonia after six days on the soil surface are very close to zero.

Days to soil incorporation
Tillage to cover biosolids can reduce ammonia loss by adsorption of ammonium-N onto soil particles.

Table 2 estimates the amount of ammonium-N retained after field application. To use this table, you will need information on biosolids stabilization processes, method of application (surface or injected), and the number of days to soil incorporation.

Table 2. Estimates of ammonium-N retained after biosolids application.

	Surface-applied				Injected
Days to incorporation by tillage	Liquid Biosolids	Dewatered Biosolids	Alkaline-stabilized Biosolids*	Composted or Drying Bed Biosolids	All Biosolids
	Ammonium-N retained, percent of applied				
0 to 2	80	60	10	100	100
3 to 6	70	50	10	100	100
over 6†	60	40	10	100	100

*For alkaline-stabilized biosolids analyzed for ammonium-N before lime addition.
†If biosolids will not be incorporated by tillage, use over 6 days to incorporation.

Nitrate-N (Line 4.3)

We assume 100% availability of biosolids nitrate-N.

Organic N Mineralized (Lines 4.8–4.9)

Biosolids organic N, which includes proteins, amino acids and other organic N compounds, is not available to plants at the time of application. Plant-available N is released from organic N through microbial activity in soil—called mineralization. Mineralization is more rapid in soils that are warm and moist, and is slower in soils that are cold or dry. Biosolids organic N mineralization rates in soil also depend on the treatment plant processes that produced the biosolids.

Use Table 3 to estimate biosolids mineralization rates based on processing. Use the middle of the range presented, unless you have information specific to the site or biosolids that justifies using higher or lower values within the range.

Table 3. First-year mineralization estimates for organic N in biosolids.

Processing	Moisture Content	First-year organic-N mineralization rate
		percent of organic N
Anaerobic digestion	liquid	20–40
Aerobic digestion	liquid	30–45
Aerobic or anaerobic digestion and storage in lagoon > 6 months	liquid	15–30
Anaerobic digestion and dewatering	semi-solid	20–40
Drying bed	solid	15–30
Heat-drying	solid	20–40
Composting	solid	0–20

Step 5. Calculate the Agronomic Biosolids Application Rate.

Perform this calculation using the results of the previous sections, as shown in lines 5.1 through 5.3.

Step 6. Convert Agronomic Biosolids Application Rate to "As Is" Basis.

Use the appropriate conversion factors (given in Table 6) to convert to gallons, acre-inches, or wet tons per acre.

Other considerations for calculations

- **Small acreage sites without a reliable yield history.** Some communities apply biosolids to small acreages managed by "hobby farmers." In many of these cases, there is no reliable yield history for the site, and the goal of management is not to make the highest economic returns. You can be sure of maintaining agronomic use of biosolids nitrogen on these sites by applying at a rate substantially below that estimated for maximum yield.

- **Equipment limitations at low application rates.** At some low-rainfall dryland cropping locations east of the Cascades, the agronomic rate calculated with the worksheet will be lower than can be spread with manure spreaders (usually about 3 dry tons per acre). At these locations, you may be able to apply the dewatered biosolids at the equipment limit, but check with your permitting agency for local requirements.

- **Unavailable soil nitrate (dryland cropping, east of Cascades).** Not all of the nitrate-N determined by testing dryland soils (line 1.6) is available to the crop because chemical extraction of nitrate is more efficient than plant root extraction. This difference becomes significant when soil nitrate concentrations are low (less than 10 mg nitrate N/kg soil) and sampling is done to greater than two feet.

  Recent research has shown that the amount of "unavailable nitrate-N" increases with soil clay content. Use the following formula if you estimate "unavailable nitrate-N" based on soil clay content.

  Unavailable nitrate-N (mg/kg) = percent clay x 0.1

- **Denitrification and immobilization.** Denitrification (the loss of nitrate as gaseous N_2 or N_2O) and immobilization (the loss of nitrate or ammonium by incorporation into organic compounds) can occur following biosolids application. At agricultural sites these losses usually are not included in biosolids loading rate calculations because university fertilizer guides account for average losses due to these processes. Check with your local permitting agency before including denitrification or immobilization losses in the loading rate calculations.

- **Site Specific Inputs.** Biosolids application rates can also be calculated using a more detailed N budget method found in Washington State Department of Ecology publication, *"Managing Nitrogen from Biosolids."* The N budget method allows for more site-specific inputs into the calculation. It will be most valuable when budget components are based on actual site monitoring data. If you do not have detailed site nitrogen data, use the worksheet presented above.

Cumulative Loading of Trace Elements

Under EPA regulations (40 CFR Part 503.13), managers must maintain records on cumulative loading of trace elements *only* when bulk biosolids do not meet EPA Exceptional Quality Standards for trace elements (Table 4).

When required, the steps in tracking trace metals are:

- Obtain biosolids trace element analyses from the wastewater treatment plant database.
- Compute pounds of element per dry ton of biosolids. Multiply mg/kg (dry weight basis) by 0.002.
- Keep records of the amount of biosolids applied to the site each year (in dry tons per acre).
- Compute pounds of element applied per acre. Multiply pounds of element per dry ton by dry tons applied.
- Compare cumulative pounds of element applied with the cumulative loading rate limit (Table 5).

Table 4. Biosolids concentration limits for land application. Source: EPA 40 CFR Part 503.

Element	Symbol	Concentration Limit	
		Exceptional Quality Standard (EPA Table 3)* mg/kg	Ceiling Limit (EPA Table 1) mg/kg
Arsenic	As	41	75
Cadmium	Cd	39	85
Copper	Cu	1500	4300
Lead	Pb	300	840
Mercury	Hg	17	57
Molybdenum	Mo	**	75
Nickel	Ni	420	420
Selenium	Se	100	100
Zinc	Zn	2800	7500

*EPA Table 3 and Table 1 refer to tables in EPA biosolids rule (40 CFR Part 503).
**Molybdenum Table 3 level is under review by the EPA.

Table 5. Cumulative loading rate limits for bulk biosolids that do not meet EPA-Table 3 criteria and are applied to agricultural land. Source: EPA 40 CFR Part 503.13.

Element	Cumulative Limit (lb/acre)
Arsenic	37
Cadmium	35
Copper	1340
Lead	268
Mercury	15
Molybdenum	*
Nickel	375
Selenium	89
Zinc	2500

*Molybdenum limit is under review by the EPA.

Table 6. Conversion Factors

1%	=	10,000 mg/kg or ppm
	=	20 lb/ton
1 mg/kg	=	1 ppm
		.0001%
		.002 lb/ton
1 wet ton	=	1 dry ton / (percent solids x 0.01)
1 dry ton	=	1 wet ton x (percent solids x 0.01)
1 acre-inch	=	27,000 gallons

The following equations summarize the calculations in the worksheet. You can use them in place of the worksheet. These equations do the same calculation as the worksheet, so you do not have to use both. These equations will give results in dry tons of biosolids per acre. You will still need an additional calculation (Step 6 in the worksheet) to convert to an "as is" basis.

Equations for Calculating Application Rates

$$B_{app} = (N_{need} - N_{other})/B_{pan} \quad [1]$$

$$B_{pan} = [(TN - AN) * M/100 + AN * R/100 + NN] * C \quad [2]$$

$$N_{other} = (0.225N_w * W) + \Sigma(N_{ppi} * 2.8 * D_i) + N_{gm} + N_{bs} + N_{man} + N_{start} \quad [3]$$

Where:

B_{app} is the biosolids application rate in dry tons/acre

N_{need} is the plant-available N needed to produce the crop yield goal in lb/acre

N_{other} is the plant-available N provided by other sources in lb/acre

B_{pan} is plant-available N in the biosolids in lb/dry ton

TN is biosolids total N in mg/kg or percent

AN is biosolids ammonium N in mg/kg or percent

NN is biosolids nitrate N in mg/kg or percent

M is the biosolids organic N mineralization rate in percent (Table 3)

R is the proportion of ammonium N retained in available form in percent (Table 2)

C is the conversion to lb/dry ton for biosolids N. For analyses in mg/kg, C = 0.002; for analyses in percent, C = 20.

N_w is the nitrogen content of irrigation water in mg/kg

W is the irrigation water applied in inches

N_{ppi} is preplant nitrogen in layer i in mg/kg. (Layers must be sampled in 12-inch increments)

D_i is soil bulk density in layer i in g/cm3

N_{gm} is nitrogen from the plowdown of a green manure or cover crop in lb/acre

N_{bs} is nitrogen released from previous biosolids applications in lb/acre (Table 1)

N_{man} is nitrogen released from previous manure applications in lb/acre

N_{start} is nitrogen supplied by starter fertilizer in lb/acre

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APPENDIX B

VECTOR ATTRACTION REDUCTION STATISTICS

VECTOR ATTRACTION REDUCTION STATISTICS

A summary of the total amount of biosolids land applied from each wastewater treatment plant (WWTP) and the vector attraction reduction methods used for those biosolids is provided in Tables 1 and 2 below.

Table 1

Flat Top/Bessie Mines Land Reclamation Site
Summary of 2013 Vector Attraction Reduction (VAR) Methods

Jefferson County WWTP	**Amount of Biosolids Land Applied (dry tons)**	Vector Attraction Reduction Method
Cahaba River	1,207	Option 10: Incorporation of Biosolids into the Soil [503.33(b)(10)(i)]
Five Mile Creek	1,021	Option 10: Incorporation of Biosolids into the Soil [503.33(b)(10)(i)]
Leeds	373	Option 10: Incorporation of Biosolids into the Soil [503.33(b)(10)(i)]
Trussville	614	Option 10: Incorporation of Biosolids into the Soil [503.33(b)(10)(i)]
Turkey Creek	251	Option 10: Incorporation of Biosolids into the Soil [503.33(b)(10)(i)]
Valley Creek	3,138	Option 1: Volatile Solids Reduction by a minimum of 38 percent [503.33(b)(1)] Option 6: Addition of Alkaline Material [503.33(b)(6)] Option 10: Incorporation of Biosolids into the Soil [503.33(b)(10)(i)]
Village Creek	2,639	Option 6: Addition of Alkaline Material [503.33(b)(6)] Option 10: Incorporation of Biosolids into the Soil [503.33(b)(10)(i)]
Prudes Creek	123	Option 10: Incorporation of Biosolids into the Soil [503.33(b)(10)(i)]
Warrior	25	Option 10: Incorporation of Biosolids into the Soil [503.33(b)(10)(i)]
Total Amount of Biosolids Applied at Flat Top:	9,391 dry tons	

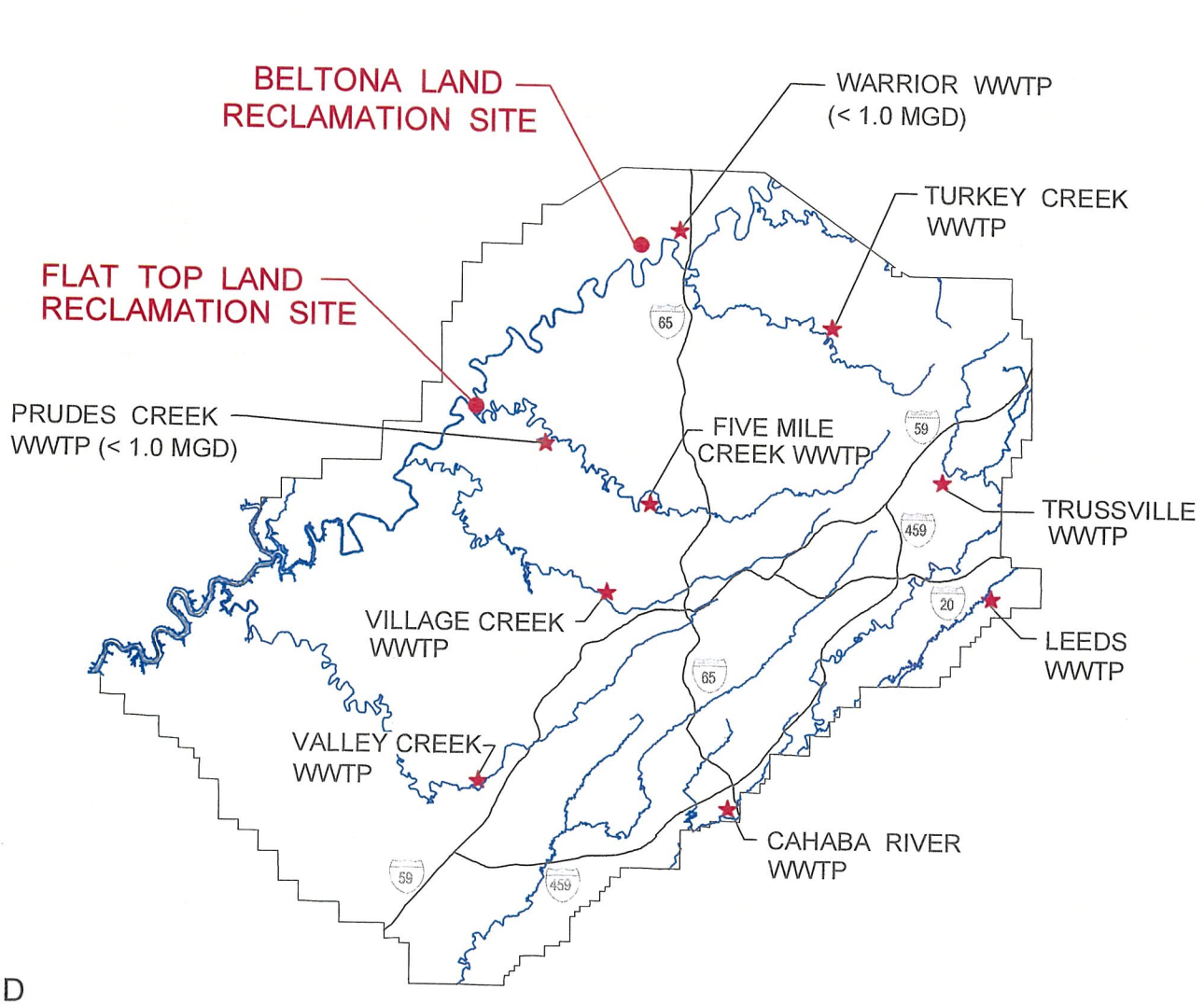
Table 2

Beltona Land Reclamation Site
Summary of 2013 Vector Attraction Reduction (VAR) Methods

Jefferson County WWTP	**Amount of Biosolids Land Applied (dry tons)**	Vector Attraction Reduction Method
Valley Creek	973	Option 6: Addition of Alkaline Material [503.33(b)(6)]
Village Creek	592	Option 6: Addition of Alkaline Material [503.33(b)(6)]
Total Amount of Biosolids Applied at Beltona:	1,565 dry tons	100% = Option 6, Lime Addition

APPENDIX C

SITE MAPS

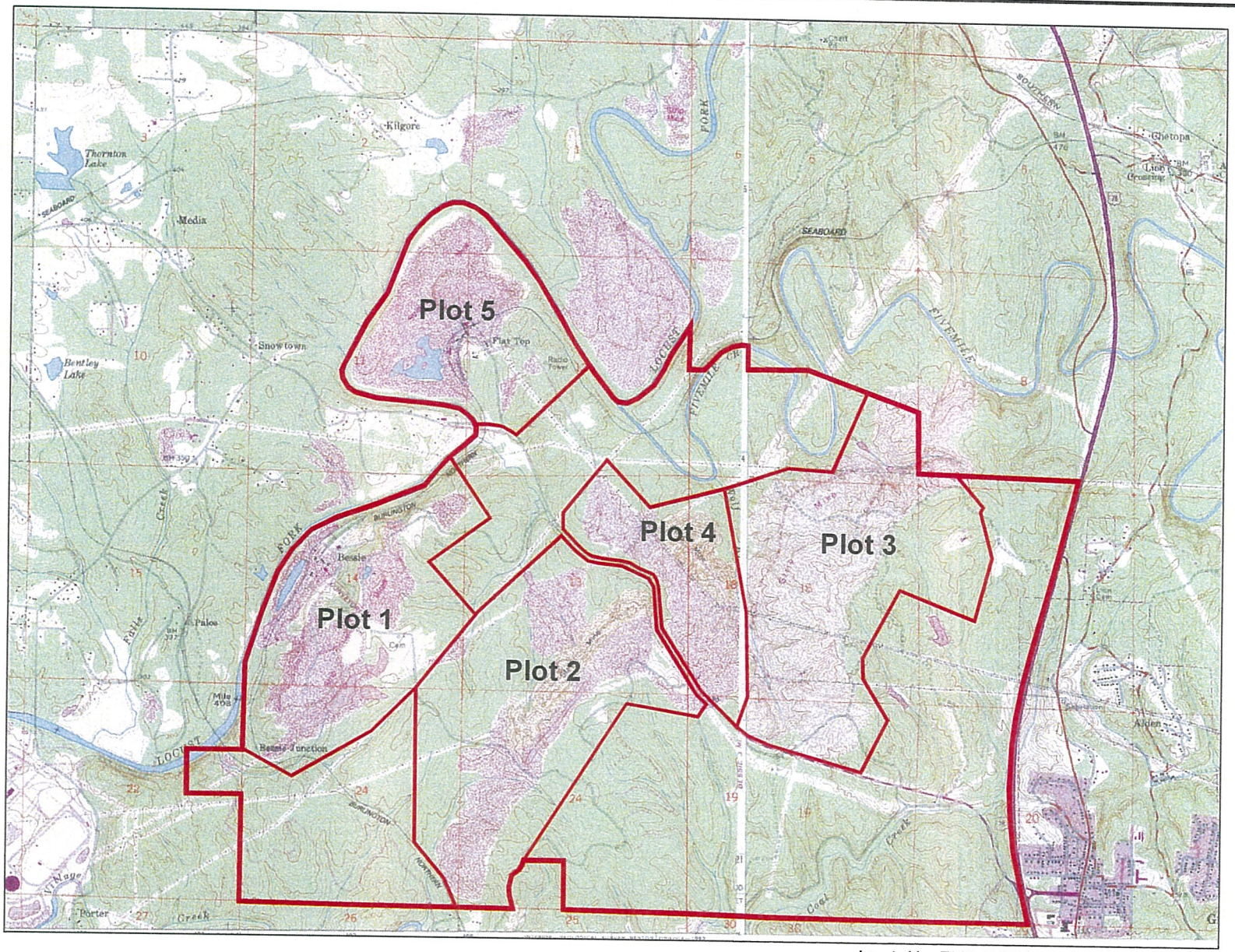


LEGEND

★ JEFFERSON COUNTY WWTP

● LAND APPLICATION SITE

ENGINEERING SERVICE ASSOCIATES, INC. esa INC	ENVIRONMENTAL SERVICES DEPARTMENT JEFFERSON COUNTY, ALABAMA BIOSOLIDS LAND RECLAMATION PROGRAM **FIGURE 1**



Located in: T1 6S, R4W, Sec. 7, 17, 18, 19 and 20
T16S, R5W, Sec. 11, 12, 13, 14, 22 and 23

LEGEND

Project Area

Plot Areas

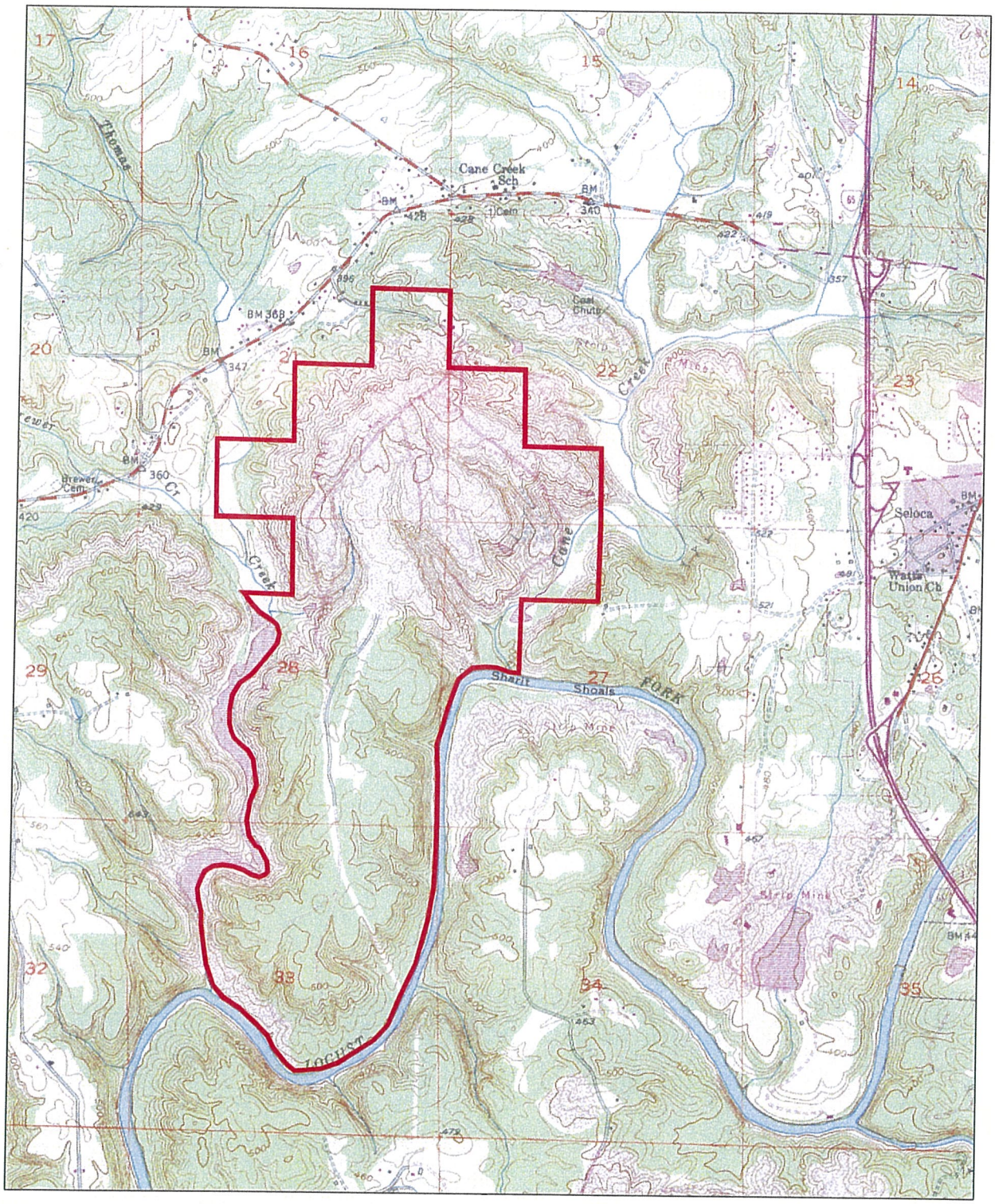
Plot 1 = 568 Acres
Plot 2 = 777 Acres
Plot 3 = 753 Acres
Plot 4 = 289 Acres
Plot 5 = 444 Acres

ENGINEERING SERVICE ASSOCIATES, INC.
esa INC

FLAT TOP BIOSOLIDS LAND RECLAMATION FACILITY

JEFFERSON COUNTY, ALABAMA

FIGURE 2



Located in: T14S, R3W
Sections 21, 22, 27, 28 and 33

LEGEND

Project Area

ENGINEERING SERVICE ASSOCIATES, INC.

esa INC.

BELTONA BIOSOLIDS LAND RECLAMATION FACILITY

JEFFERSON COUNTY, ALABAMA

FIGURE 3