

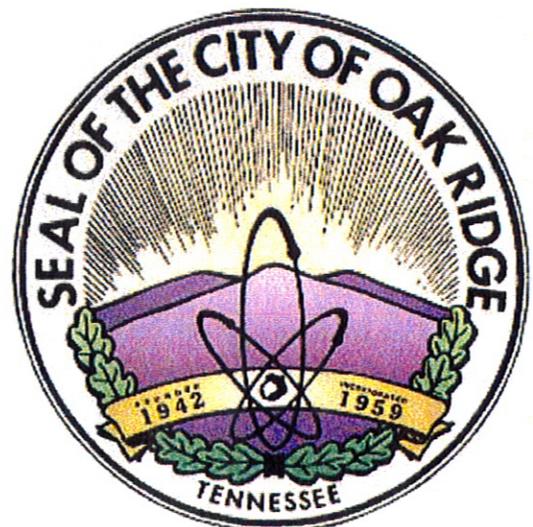
Fourth Quarterly Report

**United States Environmental Protection Agency
Administrative Order No. CWA-04-2010-4772**

**Period
July 1, 2011 –
September, 2011**

October 2011

Submitted by:



Fourth Quarterly Report

**United States Environmental Protection Agency
Administrative Order No. CWA-04-2010-4772**

**Period:
July 1, 2011 – September 30, 2011**

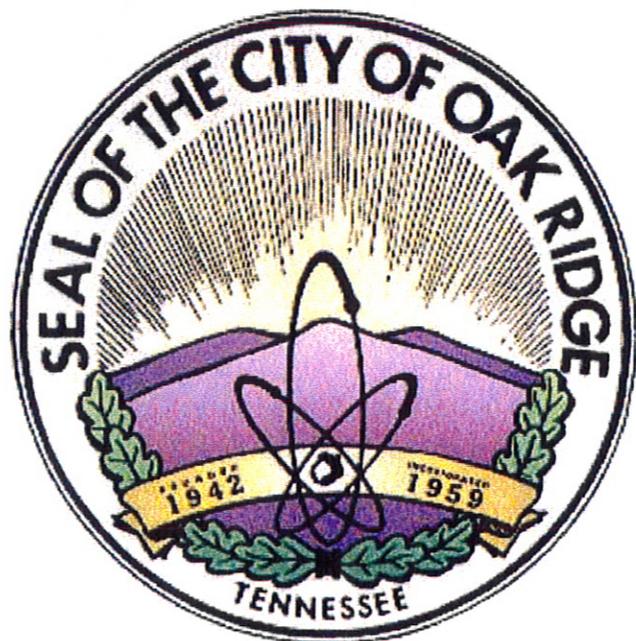
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SECTION I:

OVERVIEW OF ORDER



SECTION I

OVERVIEW OF ORDER

On September 28, 2010, an Administrative Order issued by the United States Environmental Protection Agency (EPA) to the City of Oak Ridge, which was received on September 30, 2010. The Order cited numerous incidents of Sanitary Sewer Overflows (SSO's). The Order had four (4) general sections outlining activities required of the City with a defined schedule for compliance. Those areas are as follows:

Sanitary Sewer Overflows

Within two (2) months (November 30, 2010), a list of SSO's which occurred in the previous two years, were required to be submitted. That list was submitted on time.

System Evaluation and Rehabilitation Plans (SERP)

Within six (6) months (March 30, 2011), the City was to develop work plans for Capacity Assessment of the system and a Sewer System Evaluation Survey (SSES). Following the Capacity Assessment Work Plan, the City must develop a Capacity Assessment Report in accordance with the work plan. That report is due for submittal to the EPA within one year of approval of the work plan. The execution of the SSES work plan must be completed within



one year of approval. The results of the evaluation survey must be submitted within two (2) months after completion of the survey. Two (2) months following the results, a Remediation Plan must be submitted for review and approval. Both the Capacity Work Plan and the Sewer System Evaluation Survey (SSES) work plan were approved by the EPA during the third quarter of the A.O.

Sanitary Sewer Overflow Response Plan (SORP)

Within six (6) months (Second Quarter), the City shall prepare and submit a Response Plan detailing procedures to be taken relative to any overflows occurring in the sewer system. The SORP was approved by EPA during the third quarter of the A.O.

Management, Operation, and Maintenance Programs (MOM)

The MOM portion of the Order has many components. The general topics are as follows:

- Information Management System (IMS) Programs
- Engineering
- Pump Station Operations Programs
- Maintenance Programs

The schedule for submittals varies for the different components of the MOM portion of the Order.



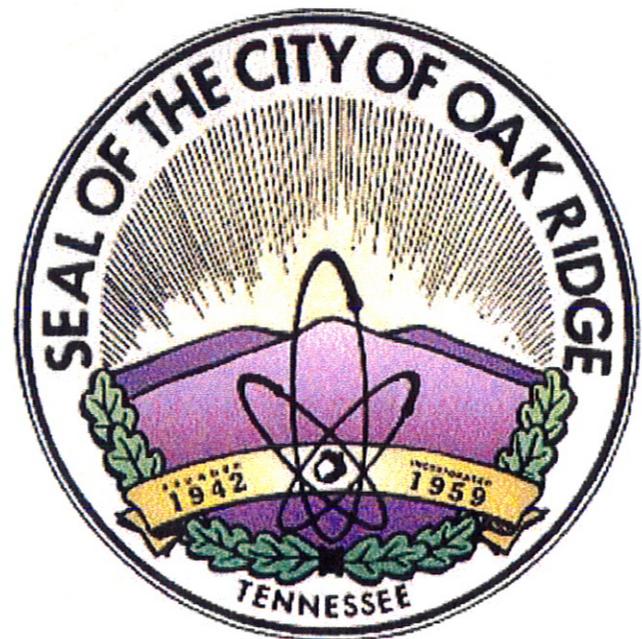
In addition to the above referenced requirements of the Order, the City must submit quarterly reports to the EPA documenting the activities of the quarter. These reports are due on the 28th day of the month following the end of each quarter. The Order outlines the format of these reports. The first three quarterly reports were submitted on time.

Section II of this report addresses the activities of the fourth quarter after receipt of the Order.



SECTION II:

**ACTIONS DURING
THE FOURTH QUARTER**



SECTION II

ACTIONS DURING THE FOURTH QUARTER

A. Activities of the Old Program

In 1991, the City of Oak Ridge began a program to eliminate overflows at the influent pumping station at the wastewater treatment plant. That program was to expand the hydraulic capacity of the wastewater treatment plant and reduce infiltration/inflow (I/I) in the system. Prior to the issuance of the Order, the treatment plant capacity was expanded to 30.0 million gallons per day (MGD). Sewer rehabilitation projects have been designated by letters. Contracts through "N" have been constructed.

During the fourth quarter, work under the "old program" continued. Two rehabilitation projects were bid during the fourth quarter. These projects were in the Emory Valley Sewer Shed. Construction is to begin in the early part of the fifth quarter. The notice of award of the construction contract was issued in the fourth quarter.

As a continuation of investigative work in the system, the City has continued to inspect sewers by closed circuit television (CCTV) using in-house personnel and equipment.



During the fourth quarter, sewers in the following mini-basins were inspected using CCTV.

CCTV
E25
E13B
W5
W6
W8
W9
W18A
W19
W21
W22
W23
W25
W26
W26A
W27
W2A
W28
W30
W34

During the fourth quarter, bid documents were prepared and bids received for contract cleaning and CCTV work to augment the City's in-house resources. This work is scheduled to be complete so that the data can be used in both the Capacity Assessment Report and the SSES.

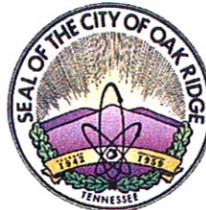


Smoke testing continued during the fourth quarter in the mini-basins shown

below:

Smoke Tested
E27
E29
E29A
W10
W11
W12
W14
W17
W18B
W20
W27
W2A
W29
W30
W31
W32
W33
W35

Smoke data was reviewed in the fourth quarter with a quality control program instituted.





During the fourth quarter, there were 106 manholes inspected in the following mini-basins:

MH INSPECTIONS	MH'S INSPECTED	PENDING	CAN NOT LOCATE
E3	7	1	0
E6	7	0	0
E7	20	0	0
E9	5	0	0
E11	1	0	0
E12	17	0	0
E13A	3	0	0
W4	3	0	0
W5	1	0	0
W6	1	0	0
W12	6	0	0
W17	7	0	0
W18D	6	0	0
W26	17	0	0
W29	6	0	0
W35	2	0	0
TOTAL	106	1	0

B. Fourth Quarter Activities Relative to the Order

Lamar Dunn & Associates, Inc. (LD&A) continues to assist the City with various tasks required by the Order.



The Order requires a GIS program. During the fourth quarter, the GIS program continued to be populated with data from field investigative work.

Item 16D(i) of the Order requires the City to submit an information Management System Programs. The IMS program was submitted to the EPA before the due date. During the fourth quarter, the City staff has worked with INFOR, the vendor for the IMS software, toward implementation. In addition to working with the vendor with training, the senior staff members involved in the implementation of the IMS visited the Hampton Roads sanitary district to witness an operating system and seek advice on implementation.

The pumping station committee continued developing the maintenance and operations documents.

The City is collecting rainfall data from three (3) rain gauges. Flow monitoring equipment is in place with data being collected for both the Capacity Assessment Report and the SSES.

The MOM was submitted prior to the deadline date in the Order.

As the computerized model of the collection system is being built, it has been determined that certain information is inconsistent in the sewer record drawings. During the fourth quarter, a survey crew has been confirming invert elevations of manholes. Flow data is being loaded into the model.



In preparation of rehabilitation design, the city has identified five design firms to assist with future construction activities. These firms have been notified of their selection with contracted discussions to begin in the fifth quarter.

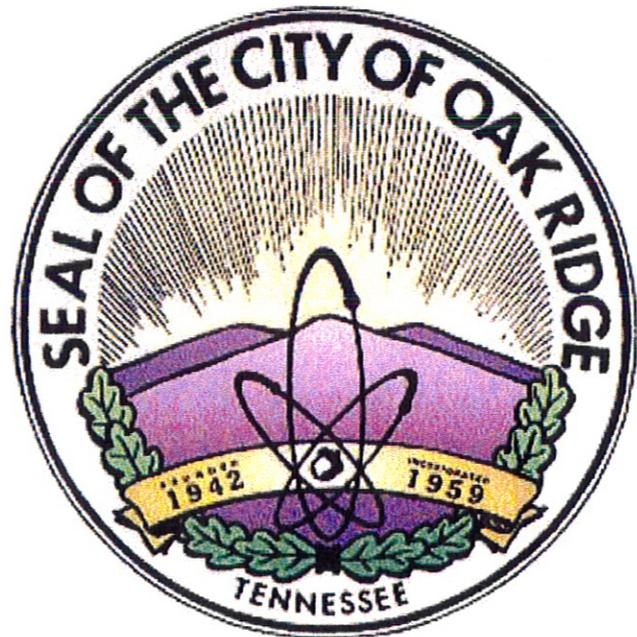
The City began the implementation of a Fats, Oils and Grease (FOG) program in the fourth quarter. Certain information of those activities is included in appendix B.

The City had discussions with the Department of Energy (DE) personnel during the fourth quarter. Section IV and Appendix C provide more insight to the DOE issues.



SECTION III:

**OTHER GENERAL COMMENTS
SSO's DURING
EQUIDITY MONTH**



SECTION III

OTHER GENERAL COMMENTS

The City has been extremely active over the first four quarters of the Administrative Order. To date, all requirements have been met both for content and timeliness.

In the first quarterly report, mention was made of a conference call between the City and EPA concerning the National Nuclear Security Administration's (NNSA) Y-12 facility. In the second and third quarterly report, Y-12 was mentioned again.

There remains a concern by the City that the magnitude and complexity of the Y-12 matter is not fully understood by EPA. As stated in earlier reports, the next phase of the enforcement activities of EPA should consider the ramifications of that flow component.

It is recognized by the City that they own their collection system and hold its permit. However, the Y-12 facility operates at a level higher than state government. That facility, from a practical perspective, is not the same as any other industrial customer. The Y-12 matter should be thoroughly reviewed by the parties prior to finalization of any civil penalties. This situation is one where the City and EPA should cooperate to affect a timely solution to the matter. During the fourth quarter, the City had two meetings with Y-12 personnel concerning their I/I contribution to the City.



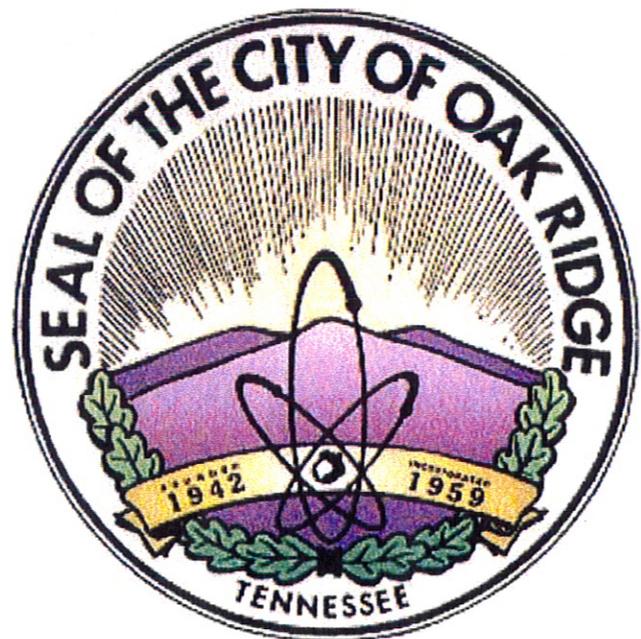
Appendix C provides activities of DOE as they perceive the infiltration/inflow issue.

Also included in their report is other data relative to their discharge permit.



SECTION IV:

SSO's DURING FOURTH QUARTER



SECTION IV

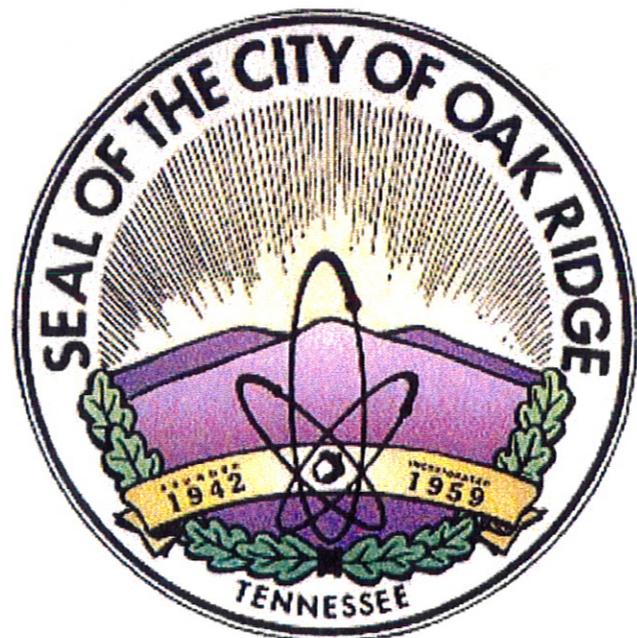
SSO's DURING FOURTH QUARTER

During the fourth quarter, there were two (2) storm events. Appendix A contains the report sheets for each overflow that occurred during the third quarter for whatever the reason. These sheets meet the criteria set forth in Section 18 of the Order, which includes:

- Date of event
- Specific location
- Estimated flow rate
- Time event started and finished
- Estimated total flow volume
- Rainfall event (in/day)
- Discharge destination



APPENDIX A: SSO'S REPORT SHEETS FOR FOURTH QUARTER



CITY OF OAK RIDGE

SANITARY SEWER OVERFLOW FINAL REPORT

NPDES PERMIT # TN0024155

REPORT DATE: 7/13/2011

LOCATION DATA

LOCATION: 131 Manhattan Ave

1st Occurrence at this location? Y N

If No, Date of Last Occurrence:

POINT OF OCCURANCE

Manhole: Clean Out: In-House Backup: Lift Station: Name: None or None or None

If Manhole; Give Mini-system # W5 Map Page # H15 Manhole # Force Main:

FLOW DATA

Start Date: 7/9/2011 Time: 2:00 AM PM End Date: 7/9/2011 Time: 2:01 AM PM

Duration 1 min hours/minutes Est. Flow Rate: 2 gpm Estimated Total Flow: 2 gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount in] Power Outage Equipment Failure

Broken Sewer Blocked line from Roots Grease Collapse Other

Explain causes of overflow: City sewer crew was cleaning sewer main and caused water to splash out of toilet

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Lined Equipment Repair

Line will be: cleaned and TV'd for needed repair: Other: City offered to help with clean up, but homeowner refused assistance

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No Name of surface water:

Ran on/in: Ground & absorbed into soil Ditch Storm Sewer

Basement Back-up No. of basements Use (i.e., commercial, residential)

Other (describe)

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date:

Names of Responders: Anthony C. Morris, Scott Butler, Anthony Hooks

Report completed by [Signature] Title: Sewer Maint Chief Date: 7/14/11

Reviewed by [Signature] Title: Operations & Maint Manager Date: 7/14/11

Initial TDEC Notification By: Tony Morris Date: 7/11/11

After Review & Notification to TDEC [Signature] Title: Operations Manager Date: 7.14.11

Final Review [Signature] Title: Public Works Director Date: 7/15/11

Final Report Transmitted to TDEC By: Kathy Stout Date: 7/15/11

FAXED

CITY OF OAK RIDGE

REPORT DATE: 7/14/2011

SANITARY SEWER OVERFLOW FINAL REPORT

NPDES PERMIT # TN0024155

LOCATION DATA

LOCATION: 1127a West Outer Dr.

1st Occurrence at this location? Y N
KS

If No, Date of Last Occurrence: [redacted]

POINT OF OCCURANCE

Manhole Clean Out In-House Backup Lift Station Name: None or West Outer or None

If Manhole; Give Mini-system # W22 Map Page # AN3W Manhole # [redacted] Force Main:

FLOW DATA

Start Date: 7/14/2011 Time: 10:30 AM PM End Date: 7/14/2011 Time: 11:00 AM PM

Duration 30 min. hours/minutes Est. Flow Rate: 5 gpm Estimated Total Flow: 150 gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount [redacted] in] Power Outage Equipment Failure
Broken Sewer Blocked line from Roots Grease Collapse Other

Explain causes of overflow: Suspected power glitch, reset breakers and pumps run fine.

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Lined Equipment Repair

Line will be: cleaned and TV'd for needed repair. Other: [redacted]

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No Name of surface water: [redacted]

Ran on/in: Ground & absorbed into soil Ditch Storm Sewer

Basement Back-up No. of basements [redacted] Use (i.e., commercial, residential) [redacted]

Other (describe) [redacted]

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date: [redacted]

Names of Responders: David Patterson, Ronnie Hill

Report completed by W. Hill, Patterson Title: Sewer Maintenance Specialist Date: 7/15/11

Reviewed by Kathy Stout Title: Operations & Maint. Manager Date: 7/15/11

Initial TDEC Notification By: David Patterson Date: 7/14/2011

After Review & Scott Johnson Title: Operations Manager Date: 7-18-11
Notification to TDEC

Final Review W. Corder Title: Public Works Director Date: 7/18/11

Final Report Transmitted to TDEC By: Kathy Stout Date: 7/18/11

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CITY OF OAK RIDGE

REPORT DATE: 7/15/2011

SANITARY SEWER OVERFLOW FINAL REPORT

NPDES PERMIT # TN0024155

LOCATION DATA

LOCATION: Athens@E.Arrowwood

1st Occurrence at this location? Y N

If No, Date of Last Occurrence: 6/24/2011

POINT OF OCCURANCE

Manhole Clean Out In-House Backup Lift Station Name: None or None or None

If Manhole; Give Mini-system # E-11 Map Page # E-23 Manhole # New-E23-49 Old -D1010 Force Main:

FLOW DATA

Start Date: 7/15/2011 Time: ? AM PM End Date: 7/15/2011 Time: ? AM PM

Duration ? hours/minutes Est. Flow Rate: ? gpm Estimated Total Flow: 500 gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount 2.15 in] Power Outage Equipment Failure

Broken Sewer Blocked line from Roots Grease Collapse Other

Explain causes of overflow: Evidence of overflow found at 9:00 am

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Lined Equipment Repair

Line will be: cleaned and TV'd for needed repair: Other: City continues work to correct I&I

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No KS 11/11 Name of surface water: Tributary to Melton Hill Lake

Ran on/in: Ground & absorbed into soil Ditch Storm Sewer

Basement Back-up No. of basements Use (i.e., commercial, residential)

Other (describe)

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date:

Names of Responders: David Patterson, David Bray

Report completed by David Patterson Title: Senior Maintenance Specialist Date: 7/18/11

Reviewed by N/A Title: Date:

Initial TDEC Notification By: David Patterson Date: 7/15/2011

After Review & Notification to TDEC Scott Jackson Title: Operations Manager Date: 7-18-11

Final Review Greg Under Title: Public Works Director Date: 7/18/11

Final Report Transmitted to TDEC By: Kathy Stout Date: 7/18/11

FAXED

CITY OF OAK RIDGE

REPORT DATE: 7/15/2011

SANITARY SEWER OVERFLOW FINAL REPORT

NPDES PERMIT # TN0024155

LOCATION DATA

LOCATION: 117 N. Purdue Ave.

1st Occurrence at this location? Y N

If No, Date of Last Occurrence: 6/24/2011 KS

POINT OF OCCURANCE

Manhole Clean Out In-House Backup Lift Station Name: None or None or None

If Manhole; Give Mini-system # W5A Map Page # G-15 Manhole # G15-13 Force Main:

FLOW DATA

Start Date: 7/15/2011 Time: ? AM PM End Date: 7/15/2011 Time: ? AM PM

Duration ? hours/minutes Est. Flow Rate: ? gpm Estimated Total Flow: 1500 gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount 2.15in] Power Outage Equipment Failure

Broken Sewer Blocked line from Roots Grease Collapse Other

Explain causes of overflow: Evidence of overflow found at 9:41 am

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Lined Equipment Repair

Line will be: cleaned and TV'd for needed repair: Other: City continues work to correct I&I

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No Name of surface water: East Fork Poplar Creek

Ran on/in: Ground & absorbed into soil Ditch Storm Sewer

Basement Back-up No. of basements Use (i.e., commercial, residential)

Other (describe)

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date:

Names of Responders: David Patterson, David Bray

Report completed by David Patterson Title: Sewer Maintenance Specialist Date: 7/15/11

Reviewed by N/A Title: Date:

Initial TDEC Notification By: David Patterson Date: 7/15/2011

After Review & Notification to TDEC By: Scott Palmer Title: Operations Manager Date: 7-18-11

Final Review By: [Signature] Title: Public Works Director Date: 7/18/11

Final Report Transmitted to TDEC By: Kathy Stout Date: 7/18/11

FAXED

CITY OF OAK RIDGE

REPORT DATE: 7/19/2011

SANITARY SEWER OVERFLOW FINAL REPORT

NPDES PERMIT # TN0024155

LOCATION DATA

LOCATION: 113 Antioch Dr.

1st Occurrence at this location? Y N

If No, Date of Last Occurrence:

POINT OF OCCURANCE

Manhole Clean Out In-House Backup Lift Station Name: None or None or None

If Manhole; Give Mini-system # E20 Map Page # L-23 Manhole # Force Main:

FLOW DATA

Start Date: 7/17/2011 Time: 2:30 AM PM End Date: 7/18/2011 Time: 12:00 AM PM

Duration 21hrs. 30 min. hours/minutes Est. Flow Rate: 75 gpm Estimated Total Flow: 96,750 gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount in] Power Outage Equipment Failure

Broken Sewer Blocked line from Roots Grease Collapse Other

Explain causes of overflow: The initial 24-hr. overflow notice was sent on Monday 7-18-11 with that date on it when it should have been dated 7-17-11.

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Lined Equipment Repair

Line will be: cleaned and TV'd for needed repair: Other: City dug up main and made repair. Sand bagged catch basin and used Vac-truck to suck up sewage pumped from hole to minimize discharge to storm drain.

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No Name of surface water: Melton Hill Lake

Ran on/in: Ground & absorbed into soil Ditch Storm Sewer

Basement Back-up No. of basements Use (i.e., commercial, residential)

Other (describe)

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date:

Names of Responders: Todd Baker, Mark Daniels

Report completed by David Patterson Title: Sewer Maintenance Specialist Date: 7-21-11

Reviewed by Title: Date:

Initial TDEC Notification By: David Patterson Date: 7/18/2011

After Review & Notification to TDEC By: [Signature] Title: Operations Manager Date: 7-21-11

Final Review By: [Signature] Title: Public Works Director Date: 7/21/11

Final Report Transmitted to TDEC By: Kathy Stout Date: 7/21/11

FAXED

CITY OF OAK RIDGE

REPORT DATE: 8/12/2011

SANITARY SEWER OVERFLOW FINAL REPORT

NPDES PERMIT # TN0024155

LOCATION DATA

LOCATION: 28 Palisades

1st Occurrence at this location? Y N

If No, Date of Last Occurrence: [redacted]

POINT OF OCCURANCE

Manhole Clean Out In-House Backup Lift Station Name: Palisades #3 or None or None

If Manhole; Give Mini-system # [redacted] Map Page # [redacted] Manhole # [redacted] Force Main:

FLOW DATA

Start Date: 8/8/11 ^{K Stout} Time: ? AM PM End Date: 8/8/2011 Time: 9:30 AM PM

Duration 12hr hours/minutes Est. Flow Rate: 3 gpm Estimated Total Flow: 2160 gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount [redacted] in] Power Outage Equipment Failure
Broken Sewer Blocked line from Roots Grease Collapse Other

Explain causes of overflow: Pumps had become plugged with rags and other debris. This debris got caught in the flapper valve causing the pump to lose prime and then failed. The station was checked on the evening of 8/7/11 due to a rain event and no by-pass had happened at that time. Not sure when this started.

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Lined Equipment Repair

Line will be: cleaned and TV'd for needed repair: Other: Wet well is scheduled to be cleaned out of all debris

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No Name of surface water: [redacted]

Ran on/in: Ground & absorbed into soil Ditch Storm Sewer

Basement Back-up No. of basements [redacted] Use (i.e., commercial, residential) [redacted]

Other (describe) [redacted]

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date: [redacted]

Names of Responders: Tim Ward, Ronnie Hill

Report completed by Tom Roberts Title: Maintenance Super Date: 8-12-11

Reviewed by Kathy Stout Title: Operations + Maint. Manager Date: 8/12/11

Initial TDEC Notification By: Tom Roberts Date: 8/9/11 ^{K^s}

After Review & Scott Jackson Title: Operations Manager Date: 8-12-11
Notification to TDEC

Final Review Steve R. Byrd, P.E. Title: FOR Public Works Director Date: 8-12-11

Final Report Transmitted to TDEC By: Kathy Stout Date: 8-12-11

FAXED

LOCATION: 249 Iroquois Rd LOCATION DATA
1st Occurrence at this location? Y N

If No, Date of Last Occurrence: [redacted]

POINT OF OCCURANCE

Manhole Clean Out In-House Backup Lift Station Name: None or None or None
If Manhole; Give Mini-system # [redacted] Map Page # C-10 Manhole # [redacted] Force Main:

FLOW DATA

Start Date: 8/15/2011 Time: 8:00 AM PM End Date: 8/15/2011 Time: 1:00 AM PM
Duration 5 hours/minutes Est. Flow Rate: .25 gpm Estimated Total Flow: 75 gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount [redacted] in] Power Outage Equipment Failure
Broken Sewer Blocked line from Roots Grease Collapse Other

Explain causes of overflow: Received a report of sewer odor coming from a storm drain pipe located behind 109 Ithaca Ln. CCTV'd the storm drain pipe and found sewer coming into the pipe at 249 Iroquois Ave. Lateral was broken down outside the manhole causing the sewer from 249 Iroquois Ave. to drain into the storm drain pipe.

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Lined Equipment Repair
Line will be: cleaned and TV'd for needed repair: Other: Lateral was broken down outside the manhole causing sewer to drain into the storm drain. Lateral was dug up and repaired.

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No Name of surface water: [redacted]
Ran on/in: Ground & absorbed into soil Ditch Storm Sewer
Basement Back-up No. of basements [redacted] Use (i.e., commercial, residential) [redacted]
Other (describe) Ran out of storm tile and absorbed into soil

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date: [redacted]

Names of Responders: Trevor Gallaher, Mark Daniel, Cody Martin

Report completed by [Signature] Title: Utility Line Maint Crew Chief Date: 8/19/11

Reviewed by [Signature] Title: Operations & Maint. Manager Date: 8/19/11

Initial TDEC Notification By: Trevor Gallaher Date: 8/16/2011

After Review & Notification to TDEC [Signature] Title: Operations Manager Date: 8-22-11

Final Review [Signature] Title: Public Works Director Date: 8/22/11

Final Report Transmitted to TDEC By: [Signature] Date: 8/22/11

FAXED

CITY OF OAK RIDGE

REPORT DATE: 8/22/2011

SANITARY SEWER OVERFLOW FINAL REPORT

NPDES PERMIT # TN0024155

LOCATION DATA

LOCATION: 228 Jefferson Ave.

1st Occurrence at this location? Y N

If No, Date of Last Occurrence:

POINT OF OCCURANCE

Manhole: Clean Out: In-House Backup: Lift Station: Name: None or None or None

If Manhole; Give Mini-system # W12 Map Page # D9 Manhole # D9-28 Force Main:

FLOW DATA

Start Date: 8/22/2011 Time: 11:00 AM PM End Date: 8/22/2011 Time: 11:50 AM PM

Duration 50 min. hours/minutes Est. Flow Rate: 100 gpm Estimated Total Flow: 5000 gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount in] Power Outage Equipment Failure

Broken Sewer Blocked line from Roots Grease Collapse Other

Explain causes of overflow: Roots, grease and rags blocked sewer main

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Lined Equipment Repair

Line will be: cleaned and TV'd for needed repair: Other:

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No Name of surface water: Tributary to East Fork Poplar Creek

Ran on/in: Ground & absorbed into soil Ditch Storm Sewer

Basement Back-up No. of basements Use (i.e., commercial, residential)

Other (describe)

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date:

Names of Responders: Anthony C. Morris, Scott Butler, David Patterson, Mark Maples

Report completed by: David Patterson Title: Maintenance Specialist Date: 8/26/11

Reviewed by: Rick Clewley Title: Operations & Maint Manager Date: 8/26/11

Initial TDEC Notification By: David Patterson Date: 8/22/2011

After Review & Notification to TDEC Scott Johnson Title: Operations Manager Date: 8-29-11

Final Review [Signature] Title: Public Works Director Date: 8/29/11

Final Report Transmitted to TDEC By: Kathy Stout Date: 8/29/11

FAXED

CITY OF OAK RIDGE

REPORT DATE: 8/23/2011

SANITARY SEWER OVERFLOW FINAL REPORT

NPDES PERMIT # TN0024155

LOCATION DATA

LOCATION: 133 Utah Ave

1st Occurrence at this location? Y N

If No, Date of Last Occurrence: [redacted]

POINT OF OCCURANCE

Manhole Clean Out In-House Backup Lift Station Name: None or None or None

If Manhole; Give Mini-system # W6 Map Page # D-14 Manhole # [redacted] Force Main:

FLOW DATA

Start Date: 8/22/2011 Time: 11:30 AM PM End Date: 8/22/2011 Time: 11:31 AM PM

Duration 1 min hours/minutes Est. Flow Rate: 1 gpm Estimated Total Flow: 1 gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount [redacted] in] Power Outage Equipment Failure
Broken Sewer Blocked line from Roots Grease Collapse Other

Explain causes of overflow: Cleaning sewer line with high pressure jet-rodder caused water to splash out of toilet and onto the floor.

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Lined Equipment Repair

Line will be: cleaned and TV'd for needed repair: Other: [redacted]

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No Name of surface water: [redacted]

Ran on/in: Ground & absorbed into soil Ditch Storm Sewer

Basement Back-up No. of basements [redacted] Use (i.e., commercial, residential) [redacted]

Other (describe) Splashed out of toilet onto bathroom floor.

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date: [redacted]

Names of Responders: Rodney Anderson

Report completed by [Signature] Title: Utility Maint Crew Chief Date: 8-29-11

Reviewed by [Signature] Title: Operations Maint Manager Date: 8/26/11

Initial TDEC Notification By: Trevor Gallaher Date: 8/23/2011

After Review & Notification to TDEC [Signature] Title: Operations Manager Date: 8-29-11

Final Review [Signature] Title: Public Works Director Date: 8/27/11

Final Report Transmitted to TDEC By: Kathy Stout Date: 8/29/11

FAXED

LOCATION: 126 Johnson Rd. 1st Occurrence at this location? Y N

If No, Date of Last Occurrence: _____

POINT OF OCCURANCE

Manhole Clean Out In-House Backup Lift Station Name: None or None or None
If Manhole; Give Mini-system # W12 Map Page # C9 Manhole # _____ Force Main:

FLOW DATA

Start Date: 8/23/2011 Time: ? AM PM End Date: 8/23/2011 Time: 1:00 AM PM
Duration ? hours/minutes Est. Flow Rate: ? gpm Estimated Total Flow: 1000 gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount _____ in] Power Outage Equipment Failure
Broken Sewer Blocked line from Roots Grease Collapse Other

Explain causes of overflow: Contractor was cleaning the sewer main, sewer main was blocked with roots just below the tap for 126 Johnson causing the sewer to back up into house.

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Lined Equipment Repair
Line will be: cleaned and TV'd for needed repair: Other: House was cleaned by a commercial cleaning contractor Serv-pro.

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No Name of surface water: _____
Ran on/in: Ground & absorbed into soil Ditch Storm Sewer
Basement Back-up No. of basements _____ Use (i.e., commercial, residential) residential
Other (describe) _____

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date: _____

Names of Responders: David Patterson, Tony Morris, Kathy Stout 8/29/11

Report completed by David Patterson Title: Maintenance Specialist Date: 8/26/11

Reviewed by Kathy Stout Title: Operations & Maint. Manager Date: 8/26/11

Initial TDEC Notification By: David Patterson Date: 8/23/2011

After Review & Notification to TDEC Scott Johnson Title: Operations Manager Date: 8-29-11

Final Review [Signature] Title: Public Works Director Date: 8/29/11

Final Report Transmitted to TDEC By: Kathy Stout Date: 8/29/11

FAKES

CITY OF OAK RIDGE

REPORT DATE: 8/25/2011

SANITARY SEWER OVERFLOW FINAL REPORT

NPDES PERMIT # TN0024155

LOCATION DATA

LOCATION: 103 Wendover Cir.

1st Occurrence at this location? Y N

If No, Date of Last Occurrence: [redacted]

POINT OF OCCURANCE

Manhole Clean Out In-House Backup Lift Station Name: None or None or None

If Manhole; Give Mini-system # W-16 Map Page # A-03 Manhole # [redacted] Force Main:

FLOW DATA

Start Date: 8/24/2011 Time: 1:00 AM PM End Date: 8/24/2011 Time: 1:01 AM PM

Duration 1 min hours/minutes Est. Flow Rate: .5 gpm Estimated Total Flow: .5 gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount [redacted] in] Power Outage Equipment Failure

Broken Sewer Blocked line from Roots Grease Collapse Other

Explain causes of overflow: Contractors cleaning the citys sewer main blew water out of the toilet.

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Lined Equipment Repair

Line will be: cleaned and TV'd for needed repair: Other: Contractor cleaned up the spill.

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No Name of surface water: [redacted]

Ran on/in: Ground & absorbed into soil Ditch Storm Sewer

Basement Back-up No. of basements [redacted] Use (i.e., commercial, residential) [redacted]

Other (describe) [redacted]

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date: [redacted]

Names of Responders: Hydro structure employees, Jeremy Forrest and Eric McNeil.

Report completed by Rick Irwin Title: Operations & Maint. Manager Date: 8/26/11

Reviewed by Wright Newman Title: Civil Projects Specialist Date: 8/26/11

Initial TDEC Notification By: Rick Irwin Date: 8/25/2011

After Review & Notification to TDEC Scott Jackson Title: Operations Manager Date: 8.29.11

Final Review [Signature] Title: Public Works Director Date: 8/29/11

Final Report Transmitted to TDEC By: Kathy Stout Date: 8/29/11

70 FAXED

LOCATION DATA
LOCATION: 404 Jefferson Ave. 1st Occurrence at this location? Y N

If No, Date of Last Occurrence: [redacted]

POINT OF OCCURANCE

Manhole Clean Out In-House Backup Lift Station Name: None or None or None

If Manhole; Give Mini-system # W-12 Map Page # B-08 Manhole # [redacted] Force Main:

FLOW DATA

Start Date: 8/29/2011 Time: 11:00 AM PM End Date: 8/29/2011 Time: 11:05 AM PM

Duration 5 min hours/minutes Est. Flow Rate: ? gpm Estimated Total Flow: 202 gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount [redacted] in] Power Outage Equipment Failure
Broken Sewer Blocked line from Roots Grease Collapse Other

Explain causes of overflow: Contractor cleaning the city's sewer main blew water out of the toilet.

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Lined Equipment Repair

Line will be: cleaned and TV'd for needed repair: Other: Contractor cleaned up the spill.

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No Name of surface water: [redacted]

Ran on/in: Ground & absorbed into soil Ditch Storm Sewer

Basement Back-up No. of basements [redacted] Use (i.e., commercial, residential) [redacted]

Other (describe) Water was confined to the bathroom.

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date: [redacted]

Names of Responders: Intuitive Technologies cleaning contractor.

Report completed by [Signature] Title: Operations & Maint. Manager Date: 9/2/11

Reviewed by [Signature] Title: Civil Project Specialist Date: 9/2/11

Initial TDEC Notification By: Tippy Newman Date: 8/30/2011

After Review & Notification to TDEC [Signature] Title: Operations Manager Date: 9.6.11

Final Review [Signature] Title: Public Works Director Date: 9/6/11

Final Report Transmitted to TDEC By: Kathy Stout Date: 9/6/11

FAXED

LOCATION DATA
LOCATION: 117 Mockingbird Ln. 1st Occurrence at this location? Y N

If No, Date of Last Occurrence: [redacted]

POINT OF OCCURANCE

Manhole Clean Out In-House Backup ^{KS} Lift Station Name: None or None or None

If Manhole; Give Mini-system # W-32 Map Page # C-2 Manhole # [redacted] Force Main:

FLOW DATA

Start Date: 8/29/2011 Time: 10:30 AM PM End Date: 8/29/2011 Time: 10:35 AM PM

Duration 5 min hours/minutes Est. Flow Rate: 1 gpm Estimated Total Flow: 5 gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount [redacted] in] Power Outage Equipment Failure

Broken Sewer Blocked line from Roots Grease Collapse Other ^{KS}

Explain causes of overflow: Contractor cleaning the city's sewer main blew water out of the laundry sink in the basement.

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Lined Equipment Repair

Line will be: cleaned and TV'd for needed repair: Other: Home owner cleaned up the spill. Contractor is to take care of any property damage.

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No Name of surface water: [redacted]

Ran on/in: Ground & absorbed into soil Ditch Storm Sewer

Basement Back-up No. of basements 1 Use (i.e., commercial, residential) residential

Other (describe) Water was confined to the basement. Home owner cleaned up the spill.

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date: [redacted]

Names of Responders: Intuitive Technologies cleaning contractor.

Report completed by Scott Johnson Title: Operations & Maint. Manager Date: 9/2/11

Reviewed by Walt J. Newman Title: Civil Project Specialist Date: 9/2/11

Initial TDEC Notification By: Tippy Newman Date: 8/30/2011 ✓ ^{KS}

After Review & Notification to TDEC Scott Johnson Title: Operations Manager Date: 9.6.11

Final Review Scott Johnson Title: Public Works Director Date: 9/6/11

Final Report Transmitted to TDEC By: Kathy Stout Date: 9/6/11

FAXED

LOCATION: 111 Wayside Rd. 1st Occurrence at this location? Y [X] N []

If No, Date of Last Occurrence: []

POINT OF OCCURANCE

Manhole [] Clean Out [] In-House Backup [X] Lift Station Name: None or None or None
If Manhole; Give Mini-system # W-12 Map Page # B-08 Manhole # [] Force Main: []

FLOW DATA

Start Date: 8/29/2011 Time: 4:00 AM [] PM [X] End Date: 8/29/2011 Time: 4:05 AM [] PM [X]
Duration 5 min hours/minutes Est. Flow Rate: 7 gpm Estimated Total Flow: 282 gallons

CAUSES

(Check all that apply)
Rainfall [] [Estimated amount [] in] Power Outage [] Equipment Failure []
Broken Sewer [] Blocked line from Roots [] Grease [] Collapse [] Other [X] KS

Explain causes of overflow: Contractor cleaning the city's sewer main blew water out of the toilet.

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded [] Nozzle [] Root Saw [] Lid Removed [] Lined [] Equipment Repair []
Line will be: cleaned and TV'd for needed repair: [] Other: Contractor cleaned up the spill.

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes [] No [X] Name of surface water: []
Ran on/in: Ground & absorbed into soil [] Ditch [] Storm Sewer []
Basement Back-up [] No. of basements [] Use (i.e., commercial, residential) []
Other (describe) Water was confined to the bathroom.

Notified Public: Yes [] No [X] How: City Web Site [] The Oak Ridger [] Signs Posted [] Date: []

Names of Responders: Intuitive Technologies cleaning contractor.

Report completed by Rick Clayton Title: Operations & Maint. Manager Date: 9/2/11

Reviewed by Tippy Newman Title: Civil Project Specialist Date: 9/2/11

Initial TDEC Notification By: Tippy Newman Date: 8/30/2011 KS

After Review & Notification to TDEC Scott Jackson Title: Operations Manager Date: 9.6.11

Final Review [Signature] Title: Public Works Director Date: 9/6/11

Final Report Transmitted to TDEC By: Kathy Stout Date: 9/6/11

FAXED

LOCATION DATA
LOCATION: 115 Wayside Rd. 1st Occurrence at this location? Y N

If No, Date of Last Occurrence: [redacted]

POINT OF OCCURANCE

Manhole Clean Out In-House Backup Lift Station Name: None or None or None
If Manhole; Give Mini-system # W-12 Map Page # B-08 Manhole # [redacted] Force Main:

FLOW DATA

Start Date: 8/29/2011 Time: 4:00 AM PM End Date: 8/29/2011 Time: 4:05 AM PM
Duration 5 min hours/minutes Est. Flow Rate: 7 gpm Estimated Total Flow: 2-oz gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount [redacted] in] Power Outage Equipment Failure
Broken Sewer Blocked line from Roots Grease Collapse Other

Explain causes of overflow: Contractor cleaning the city's sewer main blew water out of the toilet.

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Lined Equipment Repair

Line will be: cleaned and TV'd for needed repair: Other: Contractor cleaned up the spill.

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No Name of surface water: [redacted]

Ran on/in: Ground & absorbed into soil Ditch Storm Sewer

Basement Back-up No. of basements [redacted] Use (i.e., commercial, residential) [redacted]

Other (describe) Water was confined to the bathroom.

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date: [redacted]

Names of Responders: Intuitive Technologies cleaning contractor.

Report completed by [Signature] Title: Operations & Maint. Manager Date: 9/2/11

Reviewed by [Signature] Title: Civic Project Specialist Date: 9/2/11

Initial TDEC Notification By: Tippy Newman Date: 8/30/2011 KS

After Review & Notification to TDEC [Signature] Title: Operations Manager Date: 9.6.11

Final Review [Signature] Title: Public Works Director Date: 9/6/11

Final Report Transmitted to TDEC By: Kelly Stout Date: 9/6/11

✓ FAXED

CITY OF OAK RIDGE

REPORT DATE: 9/8/2011

SANITARY SEWER OVERFLOW FINAL REPORT

NPDES PERMIT # TN0024155

LOCATION DATA

LOCATION: Athens @ Arrowwood Rd.

1st Occurrence at this location? Y N

If No, Date of Last Occurrence: 7/15/2011

POINT OF OCCURANCE

Manhole Clean Out In-House Backup Lift Station Name: None or None or None

If Manhole; Give Mini-system # E-11 Map Page # E-23 Manhole # New-E23-49 -Old -D1010 Force Main:

FLOW DATA

Start Date: 9/5/2011 Time: 1:11 AM PM End Date: 9/6/2011 Time: 8:43 AM PM

Duration 19hrs.32min. hours/minutes Est. Flow Rate: 150 gpm Estimated Total Flow: 175,800 gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount 7.45 in] Power Outage Equipment Failure

Broken Sewer Blocked line from Roots Grease Collapse Other

Explain causes of overflow: Excessive rainfall 7.45" rain over 3 day period

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Limed Equipment Repair

Line will be: cleaned and TV'd for needed repair: Other: City continues work to correct I&I

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No Name of surface water: Tributary to Melfon Hill Lake

Ran on/in: Ground & absorbed into soil Ditch Storm Sewer

Basement Back-up No. of basements Use (i.e., commercial, residential)

Other (describe)

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date:

Names of Responders: David Patterson, Eddie Wilson

Report completed by David Patterson Title: Sewer Maintenance Specialist Date: 9-9-11

Reviewed by _____ Title: _____ Date: _____

Initial TDEC Notification By: David Patterson Date: 9/5/2011

After Review & Notification to TDEC By: Scott Jackson Title: Operations Manager Date: 9-9-11

Final Review By: Steve R. Byrd P.E. Title: Public Works Director Date: 9-9-11

Final Report Transmitted to TDEC By: Kathy Stout Title: VFOR Date: 9/9/11

FAXED

CITY OF OAK RIDGE
REPORT DATE: 9/8/2011 SANITARY SEWER OVERFLOW FINAL REPORT NPDES PERMIT # TN0024155

LOCATION DATA
LOCATION: 119 Athens Rd. 1st Occurrence at this location? Y N

If No, Date of Last Occurrence: 4/28/2011

POINT OF OCCURANCE

Manhole Clean Out In-House Backup Lift Station Name: None or None or None

If Manhole; Give Mini-system # E11 Map Page # E-22 Manhole # new-E22-32 -Old-D1018 Force Main:

FLOW DATA

Start Date: 9/5/2011 Time: 1:17 AM PM End Date: 9/6/2011 Time: 8:45 AM PM

Duration 19hrs. 28min. hours/minutes Est. Flow Rate: 150 gpm Estimated Total Flow: 175,200 gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount 7.45 in] Power Outage Equipment Failure

Broken Sewer Blocked line from Roots Grease Collapse Other

Explain causes of overflow: Excessive rainfall 7.45" rain over 3 day period

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Limed Equipment Repair

Line will be: cleaned and TV'd for needed repair. Other: City continues work to correct I&I

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No Name of surface water: Tributary to Melton Hill Lake

Ran on/in: Ground & absorbed into soil Ditch Storm Sewer

Basement Back-up No. of basements Use (i.e., commercial, residential)

Other (describe)

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date:

Names of Responders: David Patterson, Eddie Wilson

Report completed by David Patterson Title: Sewer Maintenance Specialist Date: 9-9-11

Reviewed by _____ Title: _____ Date: _____

Initial TDEC Notification By: David Patterson Date: 9/5/2011 KS

After Review & Notification to TDEC Scott Jackson Title: Operations Manager Date: 9-9-11

Final Review Steve R. Beard, P.E. Title: Public Works Director Date: 9-9-11
CITY ENGR.

Final Report Transmitted to TDEC By: Kathy Stout Date: 9/9/11
FOR

FAXED

LOCATION DATA
LOCATION: 108 Baypath Dr. 1st Occurrence at this location? Y N
If No, Date of Last Occurrence: 6/24/2011

POINT OF OCCURANCE
Manhole Clean Out In-House Backup Lift Station Name: None or None or None
If Manhole; Give Mini-system # E5B Map Page # L-22 Manhole # L22-4 Force Main:

FLOW DATA
Start Date: 9/5/2011 Time: 12:30 AM PM End Date: 9/6/2011 Time: 8:19 AM PM
Duration 19hrs.49min. hours/minutes Est. Flow Rate: 400 gpm Estimated Total Flow: 475,600 gallons

CAUSES
(Check all that apply)
Rainfall [Estimated amount 7.45 in] Power Outage Equipment Failure
Broken Sewer Blocked line from Roots Grease Collapse Other
Explain causes of overflow: Excessive rainfall 7.45" rain over 3 day period

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES
Line was: Jet Rodded Nozzle Root Saw Lid Removed Lined Equipment Repair
Line will be: cleaned and TV'd for needed repair: Other: City continues work to correct I&I

WHERE DID DISCHARGE GO (Check all that apply)
Did flow run to surface water: Yes No Name of surface water: Emory Valley Creek
Ran on/in: Ground & absorbed into soil Ditch Storm Sewer
Basement Back-up No. of basements Use (i.e., commercial, residential)
Other (describe)

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date:
Names of Responders: David Patterson, Eddie Wilson

Report completed by David Patterson Title: Sewer Maint Specialist Date: 9-9-11
Reviewed by _____ Title: _____ Date: _____

Initial TDEC Notification By: David Patterson Date: 9/5/2011
After Review & Scott Jackson Title: Operations Manager Date: 9-9-11
Notification to TDEC
Final Review Steve R. Byrd, P.E. Title: Public Works Director Date: 9-9-11
CITY ENGR. FOR
Final Report Transmitted to TDEC By: Kathy Stout Date: 9/9/11

FAXED

CITY OF OAK RIDGE

REPORT DATE: 9/8/2011

SANITARY SEWER OVERFLOW FINAL REPORT

NPDES PERMIT # TN0024155

LOCATION DATA

LOCATION: Belgrade Rd.

1st Occurrence at this location? Y N

If No, Date of Last Occurrence: 11/30/2010

POINT OF OCCURANCE

Manhole Clean Out In-House Backup Lift Station Name: None or None or None

If Manhole; Give Mini-system # E13A Map Page # F21 Manhole # F21-1 Force Main:

old # F901

FLOW DATA

Start Date: 9/5/2011 Time: 12:44 AM PM End Date: 9/6/2011 Time: 8:35 AM PM

Duration 19hrs.51min. hours/minutes Est. Flow Rate: 50 gpm Estimated Total Flow: 59,550 gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount 7.45 in] Power Outage Equipment Failure

Broken Sewer Blocked line from Roots Grease Collapse Other

Explain causes of overflow: Excessive rainfall 7.45" rain over 3 day period

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Lined Equipment Repair

Line will be: cleaned and TV'd for needed repair: Other: City continues work to correct I&I

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No Name of surface water: Ernie's Creek

Ran on/in: Ground & absorbed into soil Ditch Storm Sewer

Basement Back-up No. of basements Use (i.e., commercial, residential)

Other (describe)

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date:

Names of Responders: David Patterson, Eddie Wilson

Report completed by David Patterson Title: Sewer Specialist Date: 9-9-11

Reviewed by Title: Date:

Initial TDEC Notification By: DAvid Patterson Date: 9/5/2011

After Review & Notification to TDEC Scott Jackson Title: Operations Manager Date: 9-9-11

Final Review Steve R. Byrd, P.E. Title: Public Works Director Date: 9-9-11

Final Report Transmitted to TDEC By: Kathy Stout Title: V.F.O.R. Date: 9/9/11

FAXED

CITY OF OAK RIDGE

REPORT DATE: 9/8/2011

SANITARY SEWER OVERFLOW FINAL REPORT

NPDES PERMIT # TN0024155

LOCATION DATA

LOCATION: 151 Cairo Ln.

1st Occurrence at this location? Y N

If No, Date of Last Occurrence: 4/28/2011

POINT OF OCCURANCE

Manhole Clean Out In-House Backup Lift Station Name: None or None or None

If Manhole; Give Mini-system # E5B Map Page # G22 Manhole # G22-14 Force Main:

FLOW DATA

Start Date: 9/5/2011 Time: 12:31 AM PM End Date: 9/6/2011 Time: 8:30 AM PM

Duration 19hrs.59min. hours/minutes Est. Flow Rate: 250 gpm Estimated Total Flow: 299,750 gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount 7.45 in] Power Outage Equipment Failure

Broken Sewer Blocked line from Roots Grease Collapse Other

Explain causes of overflow: Excessive rainfall 7.45" rain over 3 day period

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Limed Equipment Repair

Line will be: cleaned and TV'd for needed repair: Other: City continues work to correct I&I

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No Name of surface water: Emries Creek

Ran on/in: Ground & absorbed into soil Ditch Storm Sewer

Basement Back-up No. of basements Use (i.e., commercial, residential)

Other (describe)

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date:

Names of Responders: David Patterson, Eddie Wilson

Report completed by David Patterson Title: Sewer Maint Specialist Date: 9-9-11

Reviewed by Title: Date:

Initial TDEC Notification By: David Patterson Date: 9/5/2011

After Review & Notification to TDEC Scott Johnson Title: Operations Manager Date: 9-9-11

Final Review Steve R. Byrd, P.E. Title: Public Works Director Date: 9-9-11

Final Report Transmitted to TDEC By: Kathy Stout Date: 9/9/11

FAXED

CITY OF OAK RIDGE
REPORT DATE: 9/8/2011 SANITARY SEWER OVERFLOW FINAL REPORT NPDES PERMIT # TN0024155

LOCATION DATA
LOCATION: 100 Dresden Rd. 1st Occurrence at this location? Y N

If No, Date of Last Occurrence: 4/28/2011 ✓

POINT OF OCCURANCE

Manhole Clean Out In-House Backup Lift Station Name: None or None or None

If Manhole; Give Mini-system # E13A Map Page # F20 Manhole # F-701A ✓ Force Main:

FLOW DATA

Start Date: 9/5/2011 Time: 12:55 AM PM End Date: 9/6/2011 Time: 8:37 AM PM

Duration 19hrs.42min. hours/minutes Est. Flow Rate: 200 gpm Estimated Total Flow: 236,400 gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount 7.45 in] Power Outage Equipment Failure

Broken Sewer Blocked line from Roots Grease Collapse Other

Explain causes of overflow: Excessive rainfall 7.45" rain over 3 day period

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Lined Equipment Repair

Line will be: cleaned and TV'd for needed repair: Other: City continues work to correct I&I

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No Name of surface water: Tributary to Emries Creek

Ran on/in: Ground & absorbed into soil Ditch Storm Sewer

Basement Back-up No. of basements Use (i.e., commercial, residential)

Other (describe)

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date:

Names of Responders: David Patterson, Eddie Wilson

Report completed by David Patterson Title: Sewer Maint. Specialist Date: 9-9-11

Reviewed by Title: Date:

Initial TDEC Notification By: David Patterson Date: 9/5/2011 KS

After Review & Notification to TDEC Scott Jackson Title: Operations Manager Date: 9-9-11

Final Review Steve R. Byrd, P.E. Title: Public Works Director Date: 9-9-11
CITY ENGR. FOR

Final Report Transmitted to TDEC By: Kathy Stout Date: 9/9/11

FAXED

LOCATION DATA
LOCATION: 216 S. Illinois Ave. 1st Occurrence at this location? Y N

If No, Date of Last Occurrence: 4/28/2011

POINT OF OCCURANCE

Manhole Clean Out In-House Backup Lift Station Name: None or None or None
If Manhole; Give Mini-system # W18A Map Page # J-11 Manhole # J11-16 Force Main:

FLOW DATA

Start Date: 9/5/2011 Time: 2:44 AM PM End Date: 9/6/2011 Time: 10:13 AM PM
Duration 19hrs.29min. hours/minutes Est. Flow Rate: 250 gpm Estimated Total Flow: 292,250 gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount 7.45 in] Power Outage Equipment Failure
Broken Sewer Blocked line from Roots Grease Collapse Other

Explain causes of overflow: Excessive rainfall 7.45" rain over 3 day period

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Lined Equipment Repair
Line will be: cleaned and TV'd for needed repair: Other: City continues work to correct I&I

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No Name of surface water: East Fork Poplar Creek
Ran on/in: Ground & absorbed into soil Ditch Storm Sewer
Basement Back-up No. of basements Use (i.e., commercial, residential)
Other (describe)

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date:

Names of Responders: David Patterson, Eddie Wilson

Report completed by David Patterson Title: Sewer Maintenance Specialist Date: 9-9-11

Reviewed by Title: Date:

Initial TDEC Notification By: David Patterson Date: 9/5/2011

After Review & Scott Jackson Title: Operations Manager Date: 9-9-11
Notification to TDEC

Final Review Steve R. Byrd, P.E. Title: Public Works Director Date: 9-9-11
CITY ENGR. FOR

Final Report Transmitted to TDEC By: Kathy Stout Date: 9/9/11

FAXED

CITY OF OAK RIDGE

REPORT DATE: 9/8/2011

SANITARY SEWER OVERFLOW FINAL REPORT

NPDES PERMIT # TN0024155

LOCATION DATA

LOCATION: 324 S. Illinois Ave.

1st Occurrence at this location? Y N

If No, Date of Last Occurrence: 2/28/2011 ✓

POINT OF OCCURANCE

Manhole Clean Out In-House Backup Lift Station Name: None or None or None

If Manhole; Give Mini-system # W18A Map Page # J12 Manhole # J12-11 Force Main:

FLOW DATA

Start Date: 9/5/2011 Time: 2:35 AM PM End Date: 9/6/2011 Time: 7:50 AM PM

Duration 17hrs.15min. hours/minutes Est. Flow Rate: 300 gpm Estimated Total Flow: 310,500 gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount 7.45 in] Power Outage Equipment Failure

Broken Sewer Blocked line from Roots Grease Collapse Other

Explain causes of overflow: Excessive rainfall 7.45" rain over 3 day period

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Lined Equipment Repair

Line will be: cleaned and TV'd for needed repair: Other: City continues work to correct I&I

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No Name of surface water: East Fork Poplar Creek

Ran on/in: Ground & absorbed into soil Ditch Storm Sewer

Basement Back-up No. of basements Use (i.e., commercial, residential) Commercial-Papa Johns Pizza Sewer came in the bathroom around toilet

Other (describe)

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date:

Names of Responders: David Patterson Eddie Wilson, Rick Irwin

Report completed by David Patterson Title: Sewer Maint. Specialist Date: 9-9-11

Reviewed by Title: Date:

Initial TDEC Notification By: David Patterson Date: 9/5/2011

After Review & Notification to TDEC Scott Johnson Title: Operations Manager Date: 9.9.11

Final Review Steven R. Byrd, P.E. Title: Public Works Director Date: 9-9-11

Final Report Transmitted to TDEC By: Kelly Stout Date: 9/9/11

FAXED

CITY OF OAK RIDGE
REPORT DATE: 9/7/2011 SANITARY SEWER OVERFLOW FINAL REPORT NPDES PERMIT # TN0024155

Iroquois
LOCATION: *Iroquois@Robertsville Rd.* LOCATION DATA
1st Occurrence at this location? Y N

If No, Date of Last Occurrence: 4/28/2011 ✓

POINT OF OCCURANCE

Manhole Clean Out In-House Backup Lift Station Name: None or None or None
If Manhole; Give Mini-system # W-11 Map Page # E-10 Manhole # new-AP5 Old-2-82 Force Main:

FLOW DATA

Start Date: 9/5/2011 Time: 2:58 AM PM End Date: 9/6/2011 Time: 8:00 AM PM
Duration 17hrs.2min. hours/minutes Est. Flow Rate: 200 gpm Estimated Total Flow: 204,400 gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount 7.45" in] Power Outage Equipment Failure
Broken Sewer Blocked line from Roots Grease Collapse Other

Explain causes of overflow: Excessive rainfall 7.45" rain over 3 day period

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Lined Equipment Repair
Line will be: cleaned and TV'd for needed repair: Other: City continues work to correct I&I

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No Name of surface water: East Fork Poplar Creek
Ran on/in: Ground & absorbed into soil Ditch Storm Sewer
Basement Back-up No. of basements Use (i.e., commercial, residential)
Other (describe)

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date:

Names of Responders: David Patterson, Eddie Wilson

Report completed by *David Patterson* Title: *Sewer Maint. Specialist* Date: *9-9-11*

Reviewed by _____ Title: _____ Date: _____

Initial TDEC Notification By: *David Patterson* Date: *9/5/2011*

After Review & Notification to TDEC *Scott Jackson* Title: *Operations Manager* Date: *9-8-11*

Final Review *Steven R. Byrd, P.E.* Title: *Public Works Director* Date: *9-9-11*
CITY ENGR.

Final Report Transmitted to TDEC By: *Kathy Stout* Date: *9/9/11*

FAXED

CITY OF OAK RIDGE

REPORT DATE: 9/7/2011

SANITARY SEWER OVERFLOW FINAL REPORT

NPDES PERMIT # TN0024155

LOCATION DATA

LOCATION: 695 Melton Lake Dr.

1st Occurrence at this location? Y N

If No, Date of Last Occurrence: 6/24/2011

POINT OF OCCURANCE

Manhole Clean Out In-House Backup Lift Station Name: None or None or None

If Manhole; Give Mini-system # E20 Map Page # L-24 Manhole # L24-1 Force Main:

FLOW DATA

Start Date: 9/5/2011 Time: 12:23 AM PM End Date: 9/6/2011 Time: 3:33 AM PM

Duration 27hrs.10min. hours/minutes Est. Flow Rate: 250 gpm Estimated Total Flow: 407,500 gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount 7.45 in] Power Outage Equipment Failure

Broken Sewer Blocked line from Roots Grease Collapse Other

Explain causes of overflow: Excessive rainfall 7.45" rain over 3 day period

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Lined Equipment Repair

Line will be: cleaned and TV'd for needed repair: Other: City continues work to correct I&I

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No Name of surface water: Melton Hill Lake

Ran on/in: Ground & absorbed into soil Ditch Storm Sewer

Basement Back-up No. of basements Use (i.e., commercial, residential)

Other (describe)

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date:

Names of Responders: David Patterson, Eddie Wilson

Report completed by David Patterson Title: Sewer Maint. Specialist Date: 9-9-11

Reviewed by _____ Title: _____ Date: _____

Initial TDEC Notification By: David Patterson Date: 9/5/2011

After Review & Scott Jackson Title: Operations Manager Date: 9-9-11

Notification to TDEC

Final Review Steve R. Byrd P.E. Title: FOR Public Works Director Date: 9-9-11

Final Report Transmitted to TDEC By: Kathy Stout Date: 9/9/11

AXEM

CITY OF OAK RIDGE

REPORT DATE: 9/7/2011

SANITARY SEWER OVERFLOW FINAL REPORT

NPDES PERMIT # TN0024155

LOCATION DATA

LOCATION: 1289 Oak Ridge Turnpike

1st Occurrence at this location? Y N

If No, Date of Last Occurrence: 4/28/2011

POINT OF OCCURANCE

Manhole Clean Out In-House Backup Lift Station Name: None or None or None

If Manhole; Give Mini-system # W5 Map Page # G-13 Manhole # New-G13-12 Old- D22 Force Main:

FLOW DATA

Start Date: 9/5/2011 Time: 2:02 AM PM End Date: 9/6/2011 Time: 8:57 AM PM

Duration 18hrs. 55min. hours/minutes Est. Flow Rate: 150 gpm Estimated Total Flow: 170,250 gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount 7.45 in] Power Outage Equipment Failure

Broken Sewer Blocked line from Roots Grease Collapse Other

Explain causes of overflow: Excessive rainfall 7.45" rain over 3 day period

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Limed Equipment Repair

Line will be: cleaned and TV'd for needed repair: Other: City continues work to correct I&I

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No Name of surface water: Tributary to East Fork Poplar Creek

Ran on/in: Ground & absorbed into soil Ditch Storm Sewer

Basement Back-up No. of basements Use (i.e., commercial, residential)

Other (describe)

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date:

Names of Responders: David Patterson, Eddie Wilson

Report completed by David Patterson Title: Sewer Maint. Specialist Date: 9-9-11

Reviewed by _____ Title: _____ Date: _____

Initial TDEC Notification By: David Patterson Date: 9/5/2011

After Review & Scott Jackson Title: Operations Manager Date: 9-9-11 Notification to TDEC

Final Review Steve R. Byrd, P.E. Title: Public Works Director Date: 9-9-11 CITY ENGR. FOR

Final Report Transmitted to TDEC By: Kathy Stout Date: 9/9/11

FAXED

LOCATION: 1403 Oak Ridge Turnpike LOCATION DATA 1st Occurrence at this location? Y N

If No, Date of Last Occurrence: 4/28/2011

POINT OF OCCURANCE

Manhole Clean Out In-House Backup Lift Station Name: None or None or None
If Manhole; Give Mini-system # W5 Map Page # G-11 Manhole # New-G11-8 Old-D3 Force Main:

FLOW DATA

Start Date: 9/5/2011 Time: 2:06 AM PM End Date: 9/6/2011 Time: 12:00 AM PM
Duration 21hrs. 54min. hours/minutes Est. Flow Rate: 300 gpm Estimated Total Flow: 394,200 gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount 7.45 in] Power Outage Equipment Failure
Broken Sewer Blocked line from Roots Grease Collapse Other

Explain causes of overflow: Excessive rainfall 7.45" rain over 3 day period

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Lined Equipment Repair

Line will be: cleaned and TV'd for needed repair: Other: City continues work to correct I&I

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No Name of surface water: Tributary to East Fork Poplar Creek
Ran on/in: Ground & absorbed into soil Ditch Storm Sewer
Basement Back-up No. of basements Use (i.e., commercial, residential)

Other (describe)

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date:

Names of Responders: David Patterson, Eddie Wilson

Report completed by David Patterson Title: Sewer Maint. Specialist Date: 9-9-11

Reviewed by Title: Date:

Initial TDEC Notification By: David Patterson Date: 9/5/2011 KS

After Review & Notification to TDEC By: [Signature] Title: Operations Manager Date: 9-7-11

Final Review By: [Signature] Title: Public Works Director Date: 9-9-11

Final Report Transmitted to TDEC By: [Signature] Date: 9/9/11

FAXED

CITY OF OAK RIDGE

REPORT DATE: 9/7/2011

SANITARY SEWER OVERFLOW FINAL REPORT

NPDES PERMIT # TN0024155

LOCATION DATA

LOCATION: 1403 Oak Ridge Turnpike

1st Occurrence at this location? Y N

If No, Date of Last Occurrence: 4/28/2011

POINT OF OCCURANCE

Manhole Clean Out In-House Backup Lift Station Name: None or None or None

If Manhole; Give Mini-system # W5 Map Page # G-12 Manhole # New-G12-1 Old-D4 Force Main:

FLOW DATA

Start Date: 9/5/2011 Time: 2:08 AM PM End Date: 9/6/2011 Time: 8:59 AM PM

Duration 18hrs.51min. hours/minutes Est. Flow Rate: 100 gpm Estimated Total Flow: 113,100 gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount 7.45 in] Power Outage Equipment Failure

Broken Sewer Blocked line from Roots Grease Collapse Other

Explain causes of overflow: Excessive rainfall 7.45" rain over 3 day period

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Lined Equipment Repair

Line will be: cleaned and TV'd for needed repair: Other: City continues work to correct I&I

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No Name of surface water: Tributary to East Fork Poplar Creek

Ran on/in: Ground & absorbed into soil Ditch Storm Sewer

Basement Back-up No. of basements Use (i.e., commercial, residential)

Other (describe)

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date:

Names of Responders: David Patterson, Eddie Wilson

Report completed by David Patterson Title: Sewer Maint. Specialist Date: 9-9-11

Reviewed by Title: Date:

Initial TDEC Notification By: David Patterson Date: 9/5/2011 FS

After Review & Notification to TDEC Scott Jackson Title: Operations Manager Date: 9-9-11

Final Review Steven R. Byrd, P.E. Title: Public Works Director Date: 9-9-11

Final Report Transmitted to TDEC By: Kathy Stout FOR Date: 9/9/11

FAXED

LOCATION: 1403 Oak Ridge Turnpike
LOCATION DATA
1st Occurrence at this location? Y N
If No, Date of Last Occurrence: 4/28/2011

POINT OF OCCURANCE
Manhole Clean Out In-House Backup Lift Station Name: None or None or None
If Manhole; Give Mini-system # W5 Map Page # G-12 Manhole # New-G12-2 Old-D5 Force Main:

FLOW DATA
Start Date: 9/5/2011 Time: 2:14 AM PM End Date: 9/6/2011 Time: 9:00 AM PM
Duration 18hrs.46min. hours/minutes Est. Flow Rate: 150 gpm Estimated Total Flow: 168,900 gallons

CAUSES
(Check all that apply)
Rainfall [Estimated amount 7.45 in] Power Outage Equipment Failure
Broken Sewer Blocked line from Roots Grease Collapse Other
Explain causes of overflow: Excessive rainfall 7.45" rain over 3 day period

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES
Line was: Jet Rodded Nozzle Root Saw Lid Removed Lined Equipment Repair
Line will be: cleaned and TV'd for needed repair: Other: City continues work to correct I&I

WHERE DID DISCHARGE GO (Check all that apply)
Did flow run to surface water: Yes No Name of surface water: Tributary to East Fork Poplar Creek
Ran on/in: Ground & absorbed into soil Ditch Storm Sewer
Basement Back-up No. of basements Use (i.e., commercial, residential)
Other (describe)

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date:

Names of Responders: David Patterson, Eddie Wilson
Report completed by David Patterson Title: Sewer Maint. Specialist Date: 9-9-11

Reviewed by _____ Title: _____ Date: _____

Initial TDEC Notification By: David Patterson Date: 9/5/2011
After Review & Notification to TDEC By: Scott Jackson Title: Operations Manager Date: 9-9-11

Final Review By: Steven R. Byrd, P.E. Title: Public Works Director Date: 9-9-11
CITY ENGR.

Final Report Transmitted to TDEC By: Kathy Stout Title: FDR Date: 9/9/11

FAXED

CITY OF OAK RIDGE

REPORT DATE: 9/8/2011

SANITARY SEWER OVERFLOW FINAL REPORT

NPDES PERMIT # TN0024155

LOCATION DATA

LOCATION: 470 Oak Ridge Turnpike

1st Occurrence at this location? Y N

If No, Date of Last Occurrence: 6/24/2011

POINT OF OCCURANCE

Manhole Clean Out In-House Backup Lift Station Name: None or None or None

If Manhole; Give Mini-system # E10 Map Page # F-20 Manhole # F20-25 Force Main:

FLOW DATA

Start Date: 9/5/2011 Time: 1:31 AM PM End Date: 9/6/2011 Time: 8:48 AM PM

Duration 19hrs. 17min. hours/minutes Est. Flow Rate: 100 gpm Estimated Total Flow: 115,700 gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount 7.45 in] Power Outage Equipment Failure

Broken Sewer Blocked line from Roots Grease Collapse Other

Explain causes of overflow: Excessive rainfall 7.45" rain over 3 day period

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Lined Equipment Repair

Line will be: cleaned and TV'd for needed repair: Other: City continues work to correct I&I

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No Name of surface water: Tributary to Ernies Creek

Ran on/in: Ground & absorbed into soil Ditch Storm Sewer

Basement Back-up No. of basements Use (i.e., commercial, residential)

Other (describe)

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date:

Names of Responders: David Patterson, Eddie Wilson

Report completed by David Patterson Title: Sewer Maint. Specialist Date: 9-9-11

Reviewed by Title: Date:

Initial TDEC Notification By: David Patterson Date: 9/5/2011

After Review & Notification to TDEC Scott Johnson Title: Operations Manager Date: 9-9-11

Final Review Steven R. Byrd, P.E. Title: Public Works Director Date: 9-9-11

Final Report Transmitted to TDEC By: Kathy Stout FOR Date: 9/9/11

FAXED

LOCATION DATA
LOCATION: 535 Oak Ridge Turnpike
1st Occurrence at this location? Y N
If No, Date of Last Occurrence: 4/28/2011

POINT OF OCCURANCE
Manhole Clean Out In-House Backup Lift Station Name: None or None or None
If Manhole; Give Mini-system # E13A Map Page # G-20 Manhole # F-702 Force Main:

FLOW DATA
Start Date: 9/5/2011 Time: 1:06 AM PM End Date: 9/6/2011 Time: 8:40 AM PM
Duration 19hrs.34min. hours/minutes Est. Flow Rate: 250 gpm Estimated Total Flow: 293,500 gallons

CAUSES
(Check all that apply)
Rainfall [Estimated amount 7.45 in] Power Outage Equipment Failure
Broken Sewer Blocked line from Roots Grease Collapse Other
Explain causes of overflow: Excessive rainfall 7.45" rain over 3 day period

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES
Line was: Jet Rodded Nozzle Root Saw Lid Removed Lined Equipment Repair
Line will be: cleaned and TV'd for needed repair: Other: City continues work to correct I&I

WHERE DID DISCHARGE GO (Check all that apply)
Did flow run to surface water: Yes No Name of surface water: Ernie's Creek
Ran on/in: Ground & absorbed into soil Ditch Storm Sewer
Basement Back-up No. of basements Use (i.e., commercial, residential)
Other (describe)

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date:
Names of Responders: David Patterson, Eddie Wilson
Report completed by David Patterson Title: Sewer Maint. Specialist Date: 9-8-11
Reviewed by _____ Title: _____ Date: _____

Initial TDEC Notification By: David Patterson Date: 9/5/2011 KS
After Review & Scott Jackson Title: Operations Manager Date: 9-9-11
Notification to TDEC
Final Review Steve R. Beard, P.E. Title: Public Works Director Date: 9-9-11
CITY ENGR. FOR
Final Report Transmitted to TDEC By: Kathy Stout Date: 9/8/11

FAXED

CITY OF OAK RIDGE

REPORT DATE: 9/7/2011

SANITARY SEWER OVERFLOW FINAL REPORT

NPDES PERMIT # TN0024155

LOCATION DATA

LOCATION: 117 N. Purdue Ave.

1st Occurrence at this location? Y N

If No, Date of Last Occurrence: 7/15/2011

POINT OF OCCURANCE

Manhole Clean Out In-House Backup

Lift Station Name: None or None or None

If Manhole; Give Mini-system # W5A

Map Page # G-15

Manhole # G15-13

Force Main:

FLOW DATA

Start Date: 9/5/2011 Time: 1:58 AM PM

End Date: 9/6/2011 Time: 12:45 AM PM

Duration 22hrs. 47min. hours/minutes Est. Flow Rate: 400 gpm Estimated Total Flow: 546,800 gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount 7.45 in] Power Outage Equipment Failure

Broken Sewer Blocked line from Roots Grease Collapse Other

Explain causes of overflow: Excessive rainfall 7.45" rain over 3 day period

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Limed Equipment Repair

Line will be: cleaned and TV'd for needed repair: Other: City continues work to correct I&I

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No

Name of surface water: East Fork Poplar Creek

Ran on/in: Ground & absorbed into soil Ditch Storm Sewer

Basement Back-up No. of basements Use (i.e., commercial, residential)

Other (describe)

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date:

Names of Responders: David Patterson, Eddie Wilson

Report completed by David Patterson Title: Senior Maint. Specialist Date: 9-9-11

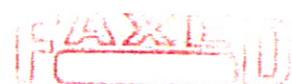
Reviewed by _____ Title: _____ Date: _____

Initial TDEC Notification By: David Patterson Date: 9/5/2011

After Review & Notification to TDEC By: Scott Johnson Title: Operations Manager Date: 9-8-11

Final Review By: Steven R. Byrd P.E. Title: FOR Public Works Director Date: 9-9-11

Final Report Transmitted to TDEC By: Kathy Stout Date: 9/9/11



CITY OF OAK RIDGE

REPORT DATE: 9/7/2011

SANITARY SEWER OVERFLOW FINAL REPORT

NPDES PERMIT # TN0024155

LOCATION DATA

LOCATION: 270 Robertsville Rd.

1st Occurrence at this location? Y N

If No, Date of Last Occurrence: 4/28/2011

POINT OF OCCURANCE

Manhole Clean Out In-House Backup Lift Station Name: None or None or None

If Manhole; Give Mini-system # W10 Map Page # E-10 Manhole # 2-80 Force Main:

FLOW DATA

Start Date: 9/5/2011 Time: 2:55 AM PM End Date: 9/6/2011 Time: 8:03 AM PM

Duration 17 hrs. 8 min. hours/minutes Est. Flow Rate: 50 gpm Estimated Total Flow: 51,400 gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount 7.45 in] Power Outage Equipment Failure

Broken Sewer Blocked line from Roots Grease Collapse Other

Explain causes of overflow: Excessive rainfall 7.45" rain over 3 day period

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Lined Equipment Repair

Line will be: cleaned and TV'd for needed repair: Other: City continues work to correct I&I

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No Name of surface water: East Fork Poplar Creek

Ran on/in: Ground & absorbed into soil Ditch Storm Sewer

Basement Back-up No. of basements Use (i.e., commercial, residential)

Other (describe)

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date:

Names of Responders: David Patterson, Eddie Wilson

Report completed by David Patterson Title: Sewer Maint. Specialist Date: 9-9-11

Reviewed by Title: Date:

Initial TDEC Notification By: David Patterson Date: 9/5/2011

After Review & Notification to TDEC Scott Jackson Title: Operations Manager Date: 9-9-11

Final Review Steve R. Byrd, P.E. Title: Public Works Director Date: 9-9-11

Final Report Transmitted to TDEC By: Kathy Stout Date: 9/9/11

FAXED

LOCATION DATA
LOCATION: 191 Tusculum Dr. 1st Occurrence at this location? Y N
If No, Date of Last Occurrence: 4/28/2011 ✓

POINT OF OCCURANCE
Manhole Clean Out In-House Backup Lift Station Name: None or None or None
If Manhole; Give Mini-system # W19 Map Page # H-11 Manhole # H11-4 ✓ Force Main:

FLOW DATA
Start Date: 9/5/2011 Time: 2:50 AM PM End Date: 9/6/2011 Time: 9:05 AM PM
Duration 18hrs. 15min. hours/minutes Est. Flow Rate: 100 gpm Estimated Total Flow: 109,500 gallons

CAUSES
(Check all that apply)
Rainfall [Estimated amount 7.45 in] Power Outage Equipment Failure
Broken Sewer Blocked line from Roots Grease Collapse Other
Explain causes of overflow: Excessive rainfall 7.45" rain over 3 day period

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES
Line was: Jet Rodded Nozzle Root Saw Lid Removed Lined Equipment Repair
Line will be: cleaned and TV'd for needed repair: Other: City continues work to correct I&I

WHERE DID DISCHARGE GO (Check all that apply)
Did flow run to surface water: Yes No Name of surface water: East Fork Poplar Creek
Ran on/in: Ground & absorbed into soil Ditch Storm Sewer
Basement Back-up No. of basements Use (i.e., commercial, residential)
Other (describe)

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date:
Names of Responders: David Patterson, Eddie Wilson

Report completed by David Patterson Title: Sewer Maint. Specialist Date: 9-9-11

Reviewed by _____ Title: _____ Date: _____

Initial TDEC Notification By: DAvid Patterson Date: 9/5/2011 KS

After Review & Notification to TDEC By: Scott Jackson Title: Operations Manager Date: 9-9-11

Final Review By: Steven R. Byrd, P.E. Title: FOR Public Works Director Date: 9-9-11
CITY ENGR.

Final Report Transmitted to TDEC By: Kathy Stout Date: 9/9/11

FAXED

CITY OF OAK RIDGE

REPORT DATE: 9/7/2011

SANITARY SEWER OVERFLOW FINAL REPORT

NPDES PERMIT # TN0024155

LOCATION DATA

LOCATION: 103 Wedgewood Rd.

1st Occurrence at this location? Y N

If No, Date of Last Occurrence: _____

POINT OF OCCURANCE

Manhole Clean Out In-House Backup Lift Station Name: Peach Orchard or None or None

If Manhole; Give Mini-system # W-8 Map Page # B-13 Manhole # _____ Force Main:

FLOW DATA

Start Date: 9/6/2011 Time: ? AM PM End Date: 9/6/2011 Time: 8:30 AM PM

Duration ? hours/minutes Est. Flow Rate: ? gpm Estimated Total Flow: 2500 gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount _____ in] Power Outage Equipment Failure
Broken Sewer Blocked line from Roots Grease Collapse Other

Explain causes of overflow: Broken sewer forcemain. Leak was discovered @ 8:30 am. 9/6/2011, Station was last checked on 9/5/2011 @ 2:10 pm. Forcemain broke sometime between lift station checks. Estimate 2500 gals.

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Lined Equipment Repair

Line will be: cleaned and TV'd for needed repair: Other: Sewer forcemain was dug up and repaired.

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No Name of surface water: _____

Ran on/in: Ground & absorbed into soil Ditch Storm Sewer

Basement Back-up No. of basements _____ Use (i.e., commercial, residential) _____

Other (describe) _____

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date: _____

Names of Responders: Ronnie Hill, Tony Morris, David Patterson, Mark Maples

Report completed by Rick Irwin Title: Operations & Maint. Manager Date: 9/7/11

Reviewed by _____ Title: _____ Date: _____

Initial TDEC Notification By: Rick Irwin Date: 9/7/2011 K Stout

After Review & Notification to TDEC Scott Johnson Title: Operations Manager Date: 9-7-11

Final Review Steve R. Boyd, P.E. Title: Public Works Director Date: 9-9-11

Final Report Transmitted to TDEC By: Kathy Stout Date: 9/9/11

FAXE

CITY OF OAK RIDGE

REPORT DATE: 9/8/2011

SANITARY SEWER OVERFLOW FINAL REPORT

NPDES PERMIT # TN0024155

LOCATION DATA

LOCATION: 244 Jefferson Ave.

1st Occurrence at this location? Y N

If No, Date of Last Occurrence: [redacted]

POINT OF OCCURANCE

Manhole Clean Out In-House Backup Lift Station Name: None or None or None

If Manhole; Give Mini-system # W12 Map Page # D9 Manhole # D9-15 Force Main:

FLOW DATA

Start Date: 9/7/2011 Time: ? AM PM End Date: 9/7/2011 Time: 10:58 AM PM

Duration ? hours/minutes Est. Flow Rate: ? gpm Estimated Total Flow: 1000 gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount [redacted] in] Power Outage Equipment Failure

Broken Sewer Blocked line from Roots Grease Collapse Other

Explain causes of overflow: showed signs of overflow, found manhole at 10:58 A.M.

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Lined Equipment Repair

Line will be: cleaned and TV'd for needed repair: Other: City continues work to correct I&I

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No Name of surface water: East Fork Poplar Creek

Ran on/in: Ground & absorbed into soil Ditch Storm Sewer

Basement Back-up No. of basements [redacted] Use (i.e., commercial, residential) [redacted]

Other (describe) [redacted]

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date: [redacted]

Names of Responders: David Patterson, Pat Mrochek

Report completed by David Patterson Title: Sewer Maint. Specialist Date: 9-9-11

Reviewed by _____ Title: _____ Date: _____

Initial TDEC Notification By: David Patterson Date: 9/7/2011 KS

After Review & Scott Johnson Title: Operations Manager Date: 9-9-11 Notification to TDEC

Final Review Steve R. Byrd, P.E. Title: Public Works Director Date: 9-9-11 CITY ENGR. FOR

Final Report Transmitted to TDEC By: Kathy Stout Date: 9/9/11

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LOCATION DATA
LOCATION: 253 Jefferson Ave. 1st Occurrence at this location? Y N

If No, Date of Last Occurrence: [redacted]

POINT OF OCCURANCE

Manhole Clean Out In-House Backup Lift Station Name: None or None or None

If Manhole: Give Mini-system # W12 Map Page # D9 Manhole # D9-3 Force Main:

FLOW DATA

Start Date: 9/12/2011 Time: ? AM PM End Date: 9/12/2011 Time: 1:35 AM PM

Duration ? hours/minutes Est. Flow Rate: ? gpm Estimated Total Flow: 500 gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount [redacted] in] Power Outage Equipment Failure
Broken Sewer Blocked line from Roots Grease Collapse Other

Explain causes of overflow: Got roots, grease, and rags out of line, manhole showed signs that it had overflowed but wasn't overflowing when discovered, est. overflow to be 500 gal.

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Lined Equipment Repair

Line will be: cleaned and TV'd for needed repair: Other: City continues work to correct I&I

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No Name of surface water: [redacted]

Ran on/in: Ground & absorbed into soil Ditch Storm Sewer

Basement Back-up No. of basements [redacted] Use (i.e., commercial, residential) [redacted]

Other (describe) [redacted]

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date: [redacted]

Names of Responders: David Patterson, Mark Maples

Report completed by David Patterson Title: Sewer Maint. Specialist Date: 9-15-2011

Reviewed by [Signature] Title: Operations & Maint. Manager Date: 9/15/11

Initial TDEC Notification By: David Patterson Date: 9/12/2011

After Review & Notification to TDEC [Signature] Title: Operations Manager Date: 9/15/11

Final Review [Signature] Title: Public Works Director Date: 9/15/11

Final Report Transmitted to TDEC By: Kathy Stout Date: 9/16/11

✓ FAXED

CITY OF OAK RIDGE

REPORT DATE: 9/14/2011

SANITARY SEWER OVERFLOW FINAL REPORT

NPDES PERMIT # TN0024155

LOCATION DATA

LOCATION: 277 Jefferson Ave.

1st Occurrence at this location? Y N

If No, Date of Last Occurrence: [redacted]

POINT OF OCCURANCE

Manhole Clean Out In-House Backup Lift Station Name: None or None or None

If Manhole; Give Mini-system # W-12 Map Page # D-08 Manhole # [redacted] Force Main:

FLOW DATA

Start Date: 9/12/2011 Time: 10:30 AM PM End Date: 9/12/2011 Time: 10:35 AM PM

Duration 5 mins hours/minutes Est. Flow Rate: [redacted] gpm Estimated Total Flow: 1 gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount [redacted] in] Power Outage Equipment Failure
Broken Sewer Blocked line from Roots Grease Collapse Other

Explain causes of overflow: Contractor cleaning the city's sewer main blew water out of the toilet.

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Lined Equipment Repair

Line will be: cleaned and TV'd for needed repair: Other: Contractor cleaned up the spill.

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No Name of surface water: [redacted]

Ran on/in: Ground & absorbed into soil Ditch Storm Sewer

Basement Back-up No. of basements [redacted] Use (i.e., commercial, residential) [redacted]

Other (describe) Water was confined to the bathroom.

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date: [redacted]

Names of Responders: Intuitive Technologies cleaning contractor.

Report completed by [Signature] Title: Operations & Maint. Manager Date: 9/14/11

Reviewed by [Signature] Title: Civil Project Specialist Date: 9/14/11

Initial TDEC Notification By: Rick Irwin Date: 9/12/2011

After Review & Notification to TDEC [Signature] Title: Operations Manager Date: 9-15-11

Final Review [Signature] Title: Public Works Director Date: 9/15/11

Final Report Transmitted to TDEC By: Kathy Stout Date: 9/16/11

FAXE

CITY OF OAK RIDGE

REPORT DATE: 9/14/2011

SANITARY SEWER OVERFLOW FINAL REPORT

NPDES PERMIT # TN0024155

LOCATION DATA

LOCATION: 281 Jefferson Ave.

1st Occurrence at this location? Y N

If No, Date of Last Occurrence:

POINT OF OCCURANCE

Manhole Clean Out In-House Backup Lift Station Name: None or None or None

If Manhole; Give Mini-system # W-12 Map Page # D-08 Manhole # Force Main:

FLOW DATA

Start Date: 9/12/2011 Time: 10:30 AM PM End Date: 9/12/2011 Time: 10:35 AM PM

Duration 5 mins hours/minutes Est. Flow Rate: gpm Estimated Total Flow: 1 gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount in] Power Outage Equipment Failure
Broken Sewer Blocked line from Roots Grease Collapse Other

Explain causes of overflow: Contractor cleaning the city's sewer main blew water out of the toilet.

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Limed Equipment Repair

Line will be: cleaned and TV'd for needed repair: Other: Contractor cleaned up the spill.

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No Name of surface water:

Ran on/in: Ground & absorbed into soil Ditch Storm Sewer

Basement Back-up No. of basements Use (i.e., commercial, residential)

Other (describe) Water was confined to the bathroom.

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date:

Names of Responders: Intuitive Technologies cleaning contractor.

Report completed by: Rick Irwin Title: Operations Mgmt. Manager Date: 9/14/11

Reviewed by: [Signature] Title: Civil Project Specialist Date: 9/14/11

Initial TDEC Notification By: Rick Irwin Date: 9/12/2011

After Review & Notification to TDEC [Signature] Title: Operations Manager Date: 9/15/11

Final Review [Signature] Title: Public Works Director Date: 9/15/11

Final Report Transmitted to TDEC By: Kathy Stout Date: 9/16/11

FAXED

CITY OF OAK RIDGE

REPORT DATE: 9/15/2011

SANITARY SEWER OVERFLOW FINAL REPORT

NPDES PERMIT # TN0024155

LOCATION DATA

LOCATION: 126 N. Jefferson Cir.

1st Occurrence at this location? Y N

If No, Date of Last Occurrence: [redacted]

POINT OF OCCURANCE

Manhole Clean Out In-House Backup Lift Station Name: None or None or None

If Manhole; Give Mini-system # W-18E Map Page # E-08 Manhole # [redacted] Force Main:

FLOW DATA

Start Date: 9/14/2011 Time: 11:15 AM PM End Date: 9/14/2011 Time: 11:20 AM PM

Duration 5 mins hours/minutes Est. Flow Rate: [redacted] gpm Estimated Total Flow: 1 gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount [redacted] in] Power Outage Equipment Failure

Broken Sewer Blocked line from Roots Grease Collapse Other

Explain causes of overflow: Contractor cleaning the city's sewer mains blew water out of the toilet.

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Lined Equipment Repair

Line will be: cleaned and TV'd for needed repair: Other: Homeowner cleaned up the spill before contractor arrived.

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No Name of surface water: [redacted]

Ran on/in: Ground & absorbed into soil Ditch Storm Sewer

Basement Back-up No. of basements [redacted] Use (i.e., commercial, residential) [redacted]

Other (describe) Water was confined to the bathroom.

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date: [redacted]

Names of Responders: Intuitive Technologies cleaning contractor. Home owner cleaned up the water.

Report completed by Rick Irwin Title: Operations & Maint. Manager Date: 9/15/11

Reviewed by W. Newman Title: Civil Project Specialist Date: 9/15/11

Initial TDEC Notification By: Rick Irwin Date: 9/15/2011 KS

After Review & Notification to TDEC Scott Johnson Title: Operations Manager Date: 9-15-11

Final Review [Signature] Title: Public Works Director Date: 9/16/11

Final Report Transmitted to TDEC By: Kathy Stout Date: 9/16/11

FAXED

CITY OF OAK RIDGE

REPORT DATE: 9/26/2011

SANITARY SEWER OVERFLOW FINAL REPORT

NPDES PERMIT # TN0024155

LOCATION DATA

LOCATION: 100 N. Lincoln Cir.

1st Occurrence at this location? Y N

If No, Date of Last Occurrence: [redacted]

POINT OF OCCURANCE

Manhole Clean Out In-House Backup Lift Station Name: None or None or None

If Manhole; Give Mini-system # W-13 Map Page # E-7 Manhole # [redacted] Force Main:

FLOW DATA

Start Date: 9/22/2011 Time: 11:30 AM PM End Date: 9/22/2011 Time: 11:35 AM PM

Duration 5 mins. hours/minutes Est. Flow Rate: ? gpm Estimated Total Flow: 1 gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount [redacted] in] Power Outage Equipment Failure
Broken Sewer Blocked line from Roots Grease Collapse Other

Explain causes of overflow: Contractor cleaning the city's sewer main blew water out of 2 toilets.

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Lined Equipment Repair

Line will be: cleaned and TV'd for needed repair: Other: Contractor cleaned up the spill.

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No Name of surface water: [redacted]

Ran on/in: Ground & absorbed into soil Ditch Storm Sewer

Basement Back-up No. of basements [redacted] Use (i.e., commercial, residential) [redacted]

Other (describe) Water was confined to the bathroom.

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date: [redacted]

Names of Responders: Intuitive Technologies cleaning contractor.

Report completed by Rick Irwin Title: Operations & Maint. Manager Date: 9/27/11

Reviewed by [Signature] Title: Civil Projects Specialist Date: 9/26/11

Initial TDEC Notification By: Rick Irwin Date: 9/22/2011 KStout

After Review & Notification to TDEC [Signature] Title: Operations Manager Date: 9-27-11

Final Review [Signature] Title: Public Works Director Date: 9/27/11

Final Report Transmitted to TDEC By: Kathy Stout Date: 9/27/11

FAKED

CITY OF OAK RIDGE

REPORT DATE: 9/26/2011

SANITARY SEWER OVERFLOW FINAL REPORT

NPDES PERMIT # TN0024155

LOCATION DATA

LOCATION: 148 Louisiana Ave.

1st Occurrence at this location? Y N

If No, Date of Last Occurrence: [redacted]

POINT OF OCCURANCE

Manhole Clean Out In-House Backup Lift Station Name: None or None or None

If Manhole; Give Mini-system # W-13 Map Page # E-7 Manhole # [redacted] Force Main:

FLOW DATA

Start Date: 9/22/2011 Time: 11:30 AM PM End Date: 9/22/2011 Time: 11:35 AM PM

Duration 5 mins. hours/minutes Est. Flow Rate: ? gpm Estimated Total Flow: 1 gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount [redacted] in] Power Outage Equipment Failure

Broken Sewer Blocked line from Roots Grease Collapse Other

Explain causes of overflow: Contractor cleaning the city's sewer main blew water out of the toilet and sink.

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Limed Equipment Repair

Line will be: cleaned and TV'd for needed repair: Other: Contractor cleaned up the spill.

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No Name of surface water: [redacted]

Ran on/in: Ground & absorbed into soil Ditch Storm Sewer

Basement Back-up No. of basements [redacted] Use (i.e., commercial, residential) [redacted]

Other (describe) Water was confined to the bathroom.

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date: [redacted]

Names of Responders: Intuitive Technologies cleaning contractor.

Report completed by Rick Irwin Title: Operations & Maint. Manager Date: 9/27/11

Reviewed by [Signature] Title: Civil Projects Specialist Date: 9/26/11

Initial TDEC Notification By: Rick Irwin Date: 9/22/2011

After Review & Notification to TDEC [Signature] Title: Operations Manager Date: 8-27-11

Final Review [Signature] Title: Public Works Director Date: 9/27/11

Final Report Transmitted to TDEC By: Kathy Stout Date: 9/27/11

FAKED

CITY OF OAK RIDGE

REPORT DATE: 9/30/2011

SANITARY SEWER OVERFLOW FINAL REPORT

NPDES PERMIT # TN0024155

LOCATION DATA

LOCATION: 105 Clark Ln.

1st Occurrence at this location? Y N

K Stout

If No, Date of Last Occurrence:

POINT OF OCCURANCE

Manhole Clean Out In-House Backup Lift Station Name: None or None or None

If Manhole; Give Mini-system # E22 Map Page # G-20 Manhole # G20-4 Force Main:

FLOW DATA

Start Date: 9/29/2011 Time: 2:00 AM PM End Date: 9/30/2011 Time: 2:00 AM PM

Duration 24 hrs hours/minutes Est. Flow Rate: .25 gpm Estimated Total Flow: 360 gallons

CAUSES

(Check all that apply)

Rainfall [Estimated amount in] Power Outage Equipment Failure
Broken Sewer Blocked line from Roots Grease Collapse Other

Explain causes of overflow: Someone had turned off the power at the sewer lift station causing the sewer to back up and run out the manhole. The resident at 105 Clark Ln. stated they had smelled sewer odor the day before but didn't call it in. Estimated .25 GPM for 24hrs.

(9/29/11) K Stout

REMEDIAL MEASURES TO CORRECT, PREVENT OR MINIMIZE FUTURE OCCURANCES

Line was: Jet Rodded Nozzle Root Saw Lid Removed Lined Equipment Repair

Line will be: cleaned and TV'd for needed repair: Other: Power was restored at the sewer lift station and a new lock was installed on the power disconnect switch.

WHERE DID DISCHARGE GO (Check all that apply)

Did flow run to surface water: Yes No Name of surface water: Emies Creek

Ran on/in: Ground & absorbed into soil Ditch Storm Sewer

Basement Back-up No. of basements Use (i.e., commercial, residential)

Other (describe)

Notified Public: Yes No How: City Web Site The Oak Ridger Signs Posted Date:

Names of Responders: David Patterson, Mark Maples

Report completed by *David Patterson* Title: *Sewer Maint. Specialist* Date: *10/4/11*

Reviewed by *Rich Lauri* Title: *Operations & Maint. Manager* Date: *10/4/11*

Initial TDEC Notification By: *David Patterson* Date: *9/30/2011* *K Stout*

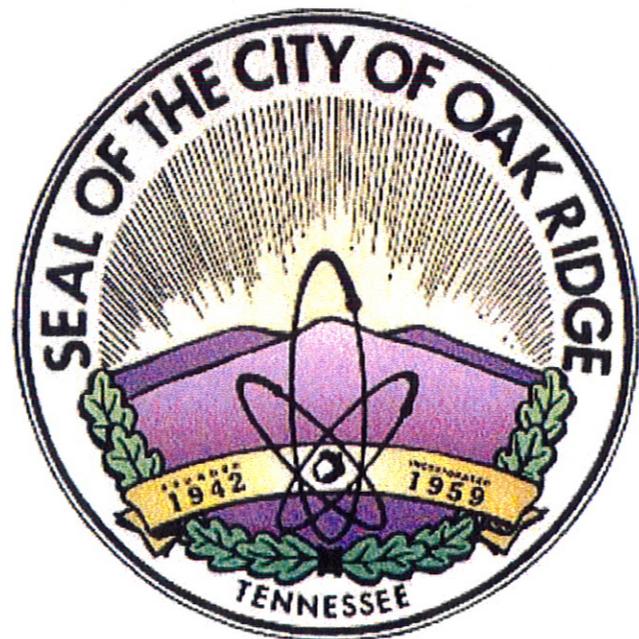
After Review & Notification to TDEC *Rich Lauri* Title: *Operations Manager* Date: *10-4-11*

Final Review *Rich Lauri* Title: *Public Works Director* Date: *10/4/11*

Final Report Transmitted to TDEC By: *Kathy Stout* Date: *10/5/11*

FAXED

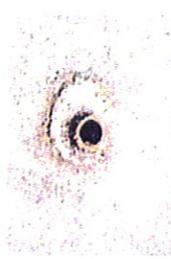
APPENDIX B: FOG PROGRAM INFORMATION



Sewer Cleanouts: Regularly check all sewer cleanouts on your facility's property to make sure the covers are solid and secure. Replace damaged or missing cleanout covers immediately to prevent rainwater inflow and problems.



Damaged cleanout cover



Missing cleanout cover

STORMWATER...

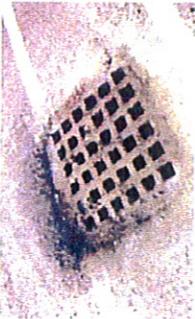
**MINIMIZE YOUR RESTAURANT'S
 STORMWATER IMPACTS**

1. **Maintain clean area around the grease recycle bin.** Make employees aware to be careful not to spill any fats, oils and grease. If there is a spill, clean it immediately.



Stormwater impact from recycle bin spill

2. **Do NOT pour oils or grease down storm drains, storm drains, sewer drains or on the ground.**



Grease evidence at storm gate. Grease was discharged into stream. Enforcement action was taken.

3. **Clean vent hoods regularly** to prevent fats, oils and grease discharge to the roof of your facility or on ground near your facility.
4. **Design and locate dumpsters and outdoor wash areas** to minimize stormwater impacts.

Restaurants & Food Service Establishments need to make sure they:

1. Have proper grease control equipment **installed.**
- 2 **Maintain** (routinely clean or pump out) grease control equipment. Check interceptor regularly to make sure it has outlet Ts, and the structure is in good operating condition.
3. **Keep records on-site** of grease control equipment pumping/cleaning and maintenance to provide to City of Oak Ridge inspectors.

4. Implement Best Management Practices.

BEST MANAGEMENT PRACTICES (BMPs)

- Recycle waste cooking oil. Do NOT pour down sinks or any drains. Do NOT pour into any storm grate or on ground.
- "Dry wipe" all pots, pans, & plates prior to dishwashing. Dry wiping and scraping pots, pans, & plates' food particles and grease residue into the trash helps prevent grease buildup in your sewer lines and Oak Ridge's sewer lines.
- Use strainers in sink drains to catch food scraps and other solids, and empty strainer contents into trash.
- Post "NO GREASE" signs above sinks.
- Food grinders are allowed but the use is discouraged since these will contribute to grease discharge and decrease efficiency of interceptors and traps.
- Educate and train kitchen staff that grease control is important and inform them how they can work to provide a positive impact on the environment and your plumbing system.



**GREASE CONTROL
 EQUIPMENT**

for

**New Food Service Establishments
 and
 Upgrade to Existing
 Food Service Establishments**



New Grease Interceptor Installation

As per City of Oak Ridge Sewer Use Ordinance and FOG Management Policy all food service establishments need to control fats, oils and grease discharges from their facility. This brochure is provided as guidance for new restaurants, existing facilities that are upgrading, or have change of ownership.

Why is Grease Control Equipment Installation Required?

Fats, oils and grease can cause serious problems in the sewer system and in a restaurant or food service establishment. Problems include raw sewage overflows due to blocked sewer lines, rancid odors, potential contact with microorganisms that can cause hepatitis and gastroenteritis, expensive cleanup, repair and replacement of damaged property. Sewer line blockages due to fats, oils and grease from food service establishments have increased cost to the City of Oak Ridge and increased reporting of sanitary sewer overflows to the Tennessee Department of Environment & Conservation and the U.S. EPA.

What is a food service establishment?

Any facility or business engaged in preparing, serving or making food available for consumption.

There are 5 classifications for food service establishments with **minimum** grease control equipment requirements.

Class 1: Deli, mobile food vendors, defined by NAICS* 72213 & 722330 (minimum 20 gallon per minute/40 pound capacity grease trap)

Class 2: Limited Service Restaurants/Caterers, defined by NAICS 722211 & 722320 (minimum 500 gallon grease interceptor)

Class 3: Full Service Restaurants, defined by NAICS 722110 (minimum 1000 gallon grease interceptor)

Class 4: Buffet and Cafeteria Facilities, defined by NAICS 72212 (minimum 1500 gallon grease interceptor)

Class 5: Institutions-schools, hospitals, prisons, defined by NAICS 722310 (minimum 2000 gallon grease interceptor)

*NAICS: North American Industry Classification System

1. What must a new food service establishment, or upgrade to existing food service establishment, or change in ownership of an existing food service establishment do?

Submit a Fats, Oils & Grease (FOG) Control Plan to:

City of Oak Ridge
Attn: FOG Control Plan
P.O. Box 1
Oak Ridge, TN 37831

2. What needs to be included in the FOG Control Plan?
 - Identification and number of all cooking and food preparation equipment (i.e. fryers, grills, woks, etc....)
 - The number and size of dishwashers, sinks, floor drains, mop sinks and other plumbing fixtures
 - Type of Food Service Establishment classification (see inside left of brochure)
 - Type of food to be served
 - Plans for the grease interceptor, including dimensions, size, and location
3. What does the City of Oak Ridge do when the FOG Control Plan is received?

The City will review the FOG Control Plan, grease interceptor sizing and approve, or make changes as necessary to aid in the protection of a FOG discharge from the food service establishment. Remember, the 3 compartment sink is NOT the only source of grease.

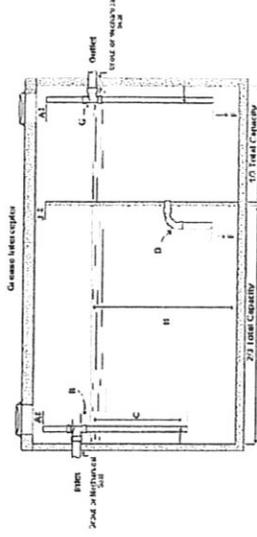
Grease Control Equipment Specifications

All Food Service Establishments' Grease Control Equipment must meet the requirements of the City of Oak Ridge Operational Division Policy 2010-01: Fats, Oils and Grease Management Policy.

GREASE CONTROL EQUIPMENT

GREASE INTERCEPTOR...

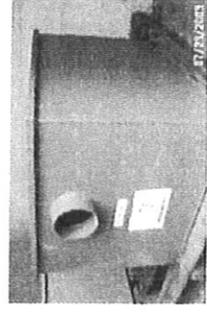
Is an underground tank with usual capacities ranging from 1,000 gallons to 3,000 gallons. Interceptors need to be cleaned (pumped out) of complete contents at a recommended minimum frequency of every 90 days. Some facilities will need to pump interceptors more frequently (i.e. monthly). Class 2 through Class 5 food service establishments need to have grease interceptors installed.



- A.) Minimum 6", but not less than pipe diameter.
- B.) Inlet pipe invert to be 2 1/2" above liquid surface.
- C.) Inlet pipe to terminate 2/3 depth of water level.
- D.) 90 degree Sweep, minimum size- 6"
- E.) 12" from floor to end of sweep.
- F.) 12" from floor to end of outlet pipe
- G.) Outlet pipe no smaller than inlet pipe, minimum- 4"
- H.) Minimum depth of liquid capacity- 42"
- I.) Maximum distance from ceiling- 6"

GREASE TRAP...

Is an indoor, "under the sink" unit with minimum size requirement of 20 gallon per minute / 40 pound capacity trap. Traps are for Class 1 facilities only. Traps must have flow restrictor installed and be vented. Traps should be cleaned regularly (minimum every 30 days) to prevent grease discharge from the food service establishment.



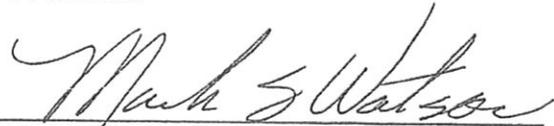
CITY OF OAK RIDGE, TENNESSEE

ADMINISTRATIVE POLICY AND PROCEDURE MANUAL

Subject		Number	
Fats, Oils and Grease (FOG) Management Policy		D-355	
Effective Date	Revision	Page of	
June 23, 2011	0	1 1	

- 1.0 **POLICY STATEMENT:** The City must prevent overflows, blockages, and obstructions in its sewer system caused by the collection of fats, oils, and greases (FOG). Management of an effective FOG program with food establishments, commercial facilities, and industrial facilities will prevent sewer system overflows and obstructions, and will reduce operational costs to the City. For compliance with the requirements set forth by the State of Tennessee Department of Environment and Conservation, a FOG management policy is hereby established. (See also City Code §13-307(12))
- 2.0 **PROCEDURES:** The procedures for FOG management shall be in accordance with the attached Fats, Oils & Grease (FOG) Management Policy, dated May 26, 2011.
- 3.0 **RESPONSIBILITY:** The implementation and administration of the FOG Management Policy shall be the joint responsibility of the Community Development and Public Works Departments.

APPROVED:



Mark S. Watson
City Manager

Attachment: Fats, Oils & Grease (FOG) Management Policy



Fats, Oils & Grease (FOG) Management Policy

I. Purpose

This FOG Management Policy sets forth requirements to aid in the prevention of sanitary sewer blockages, obstructions, and overflows due to the contribution and accumulation of fats, oils, and grease (FOG) in the Oak Ridge sewer system from commercial, industrial, and institutional food service establishments.

II. Definitions

- A. Black Water: Wastewater containing human waste from sanitary fixtures such as toilets and urinals.
- B. Brown Grease: Fats, oils, and grease that is discharged to the grease control equipment.
- C. City: Includes the City of Oak Ridge, Tennessee; the City Manager; the City Engineer; building officials; and their duly authorized representatives.
- D. FOG (fats, oils, and grease): Organic polar compounds derived from animal and/or plant sources. FOG may also be referred to as "grease" or "greases" in this section.
- E. Food Service Establishment (FSE): Any establishment, business or facility engaged in preparing, serving or making food available for consumption. Single family residences are not a FSE; however, multi-residential facilities may be considered a FSE at the discretion of the City. Food Service Establishments will be classified as follows:
 - 1. Class 1: Deli – engaged in the sale of cold-cut and microwaved sandwiches/subs with no frying or grilling on site, Ice Cream shops and beverage bars as defined by NAICS 72213, Mobile Food Vendors as defined by NAICS 722330
 - 2. Class 2: Limited-Service Restaurants (a.k.a. Fast Food Facilities, Daycares) as defined by NAICS 722211 and Caterers as defined by NAICS 722320
 - 3. Class 3: Full Service Restaurants as defined by NAICS 722110
 - 4. Class 4: Buffet and Cafeteria Facilities as defined by NAICS 72212
 - 5. Class 5: Institutions (Schools, Hospitals, Prisons, etc.) as defined by NAICS 722310 but not to exclude private operations.
- F. Gray Water: Refers to all other wastewater other than black water as defined in this section.

- G. Grease Control Equipment (GCE): A device for separating and retaining wastewater FOG prior to wastewater exiting the FSE and entering the City's sewer system. The GCE is so constructed as to separate and trap or hold fats, oils and grease substances from entering the City's sewer system. Devices include grease interceptors, grease traps, or other devices approved by the Superintendent.
- H. Grease Interceptor: Grease Control Equipment identified as a large tank, usually 1,000 gallon to 3,000 gallon capacity, which provides FOG control for a FSE. Grease interceptors will be located outside the FSE, unless a variance request has been granted.
- I. Grease Management Coordinator: person employed by the City of Oak Ridge who is charged with the responsibility of administering the provisions of the grease management program to ensure compliance by users with applicable laws, rules, regulations, policies and ordinances.
- J. Grease Trap: Grease Control Equipment identified as an "under the sink" trap, a small container with baffles, or a floor trap. For a FSE approved to install a grease trap, the minimum size requirement is the equivalent of a 20-gallon per minute/40 pound capacity trap. All grease traps will have flow control restrictor and venting.
- K. Grease Recycle Container: Container used for the storage of yellow grease.
- L. NAICS: North American Industry Classification System. The website is found at: <http://www.census.gov/epcd/www/naics.html>
- M. Series: (Grease Interceptors Installed in Series): Grease interceptor tanks are installed one after another in a row and are connected by plumbing pipe.
- N. Tee or T (Influent & Effluent): A T-shaped pipe extending from the ground surface below grade into the grease interceptor to a depth allowing recovery (discharge) of the water layer located under the layer of FOG. Influent & Effluent T's are recommended to be made of PVC or equivalent material, and extend to within 12" to 15" of the bottom of the interceptor.
- O. User: A customer operating a food service establishment and discharging to the sanitary sewer system.
- P. Yellow Grease: Fats, oils and grease that has not been in contact or contaminated from other sources (water, wastewater, solid waste, etc.) and can be recycled. Yellow grease is normally stored in grease recycle container or bin for beneficial reuse.

III. General Requirements

- A. All existing Food Service Establishments (FSEs) are required to have grease control equipment (GCE) installed, maintained and operating properly, in accordance with the Sewer Use Ordinance.
- B. All FSEs will be required to maintain records of cleaning and maintenance of GCE. GCE maintenance records include, at a minimum, the date of cleaning/maintenance, company or person conducting the cleaning/maintenance, volume (in gallons) of grease wastewater removed, and final disposal location. A grease waste hauler completed

manifest, that includes all the minimum information mentioned above, will meet this requirement.

- C. GCE maintenance records will be available at the FSE premises so they can be provided to the City or their representative, and/or the Health Department. The FSE shall maintain GCE maintenance records for three (3) years.
- D. No FSE will discharge oil and grease in concentrations that exceed the City of Oak Ridge numerical limit for oil and grease.
- E. Owners of Commercial Property will be held responsible for wastewater discharges from leaseholder on their property.

F. Grease Control Equipment Certification Requirement:

All establishments with grease control equipment must have their grease interceptor or grease trap inspected and certified annually by a City "certified" grease waste hauler or plumber. If a grease interceptor or grease trap "Passes" the certification requirement, then no further action is required. If a grease interceptor or grease trap "Fails" the certification requirement, then a corrective action response is required from the FSE owner or authorized representative to the City. Completed certification forms {Grease Interceptor Certification (Form A) or Grease Trap Certification (Form B)} must be completed and signed by the grease waste hauler or plumber, as well as the FSE owner or authorized representative, and submitted to the City. The original certification form must be submitted to:

City of Oak Ridge
Community Development Department
Attn: FOG Program
P.O. Box 1
Oak Ridge, TN 37831

G. Failure of a Grease Interceptor Certification, or Grease Trap Certification:

The FSE owner or authorized representative is responsible for including detailed "Corrective Action Response" information on the Grease Interceptor Certification form, or the Grease Trap Certification form that is submitted to the City. If necessary, additional pages may be attached to the certification form. At a minimum, the "Corrective Action Response" information must include the reason for the failed certification, what corrective action will be taken to correct the problem, and the date the corrective action will be completed. Any additional enforcement action will utilize the *Oak Ridge Food Service Establishment Enforcement Response Guide*.

H. FSEs shall observe Best Management Practices (BMPs) for controlling the discharge of FOG from their facility. Examples of BMPs include:

1. Recycle waste cooking oil; dispose in Grease Recycle Bin or Container. Do NOT pour any grease into sinks, floor drains or mop sinks.
2. Post "NO GREASE" signs above all kitchen sinks to remind employees.

3. "Dry Wipe" and scrape into a trash container as much food particles and grease residue from pots, pans, and plates as possible.
 4. Use Strainers in sink drains and floor drains to prevent large food particles and containers from going into the sewer line.
 5. If an oil or grease spill occurs, clean up using "dry" oil absorbent material or use ice to make grease solidify. Scoop up and dispose into a trash container. Do NOT wash oil or grease into drains!
 6. Dispose of food items in the trash. Food grinder use is discouraged due to build-up of solids in the GCE which causes decreased efficiency and need to increase pumping frequency of the GCE.
 7. Educate and train all employees on grease control and preventing sewer pipe clogs and sewer overflows.
- I. FSEs shall dispose of yellow grease in an approved container, or recycle container, and the contents shall not be discharged to any sanitary sewer line, storm water grate, drain or conveyance. Yellow grease, or oils, poured or discharged into the FSE sewer lines or City's sewer system is a violation of this FOG Management Policy and the City's Sewer Use Ordinance.
 - J. It shall be a violation of this FOG Management Policy and, therefore, the Sewer Use Ordinance, to push or flush the non-water portion of GCE into the public sewer.

IV. Approved Grease Waste Haulers

To ensure proper maintenance of grease control equipment and proper disposal of the FOG waste, the City will maintain an "Approved Grease Waste Haulers List." Criteria for the grease waste hauler to be placed on the "Approved Grease Waste Haulers List" include, but are not limited to, the following:

- A. Signature of the grease waste hauler company's authorized representative and submittal to the City of a completed "City of Oak Ridge Approved Grease Waste Hauler Agreement Form." The grease waste hauler agreement will include grease waste hauler reporting requirements to the City, and making records available to City personnel, or their authorized representative. Failure to meet any of the grease waste hauler agreement requirements will result in removal of the grease waste hauler from the "Approved Grease Waste Haulers List", and/or enforcement action.
- B. The grease waste hauler employees that will be completing the food service establishment grease control equipment certification forms must attend a City of Oak Ridge Grease Control Equipment Certification Class, and pass the GCE class test.

VI. Grease Control Equipment Requirements

- A. New Food Service Establishment, Existing Food Service Establishments, Upgrading of Existing Food Service Establishment or Change of Ownership of Existing Food Service Establishment Requirement:
- Any new FSE, existing FSE, upgrading of an existing FSE, or change of ownership of existing FSE will be required to install and maintain a grease interceptor. Food service establishments in one of these categories must submit a FOG plan to the City for approval. The FOG plan must include identification of all cooking and food preparation equipment (i.e. fryers, grills, woks, etc.); the number and size of dishwashers, sinks, floor drains, and other plumbing fixtures; type of FSE classification; type of food to be served; and plans for the grease interceptor dimensions and location. The City provides a Grease Control Inquiry Form that can be submitted by the FSE or their representative. The City will review the FOG plan, grease interceptor sizing and approve, or make changes as necessary, to aid in the protection of a FOG discharge from the FSE.
- B. New construction of FSEs shall have separate sanitary (restroom) and kitchen process lines. The kitchen process lines shall be plumbed to appropriately sized GCE. No sanitary wastewater or stormwater shall be plumbed to the GCE.
- C. All of the FSEs internal plumbing shall be constructed to separate sanitary (restroom) flow from kitchen process flow. Sanitary flow and kitchen process discharges shall be approved separately by the City and shall discharge from the building separately. Kitchen process lines and sanitary lines may combine prior to entering the public sewer; however the lines cannot be combined until after the GCE.
- D. Grease Interceptors or Grease Traps will be installed and connected so that it may be easily accessible for inspection, cleaning and removal of grease at any time.
- E. Existing Food Service Establishments are required to meet the FOG Management Policy requirements.
- F. New Multi-Unit (Strip Mall) Facilities:
1. New strip malls or strip centers must have two separate sewer line connections at each unit within the strip mall or strip center. One sewer line will be for sanitary wastewater and one sewer line will be for the kitchen area, or potential kitchen area, of each unit. The kitchen area, or potential kitchen area, sewer line will be connected to floor drains in the specified kitchen area, and will connect, or be able to connect, to other food service establishment kitchen fixtures, such as 3-compartment sink, 2-compartment sink, pre-rinse sink, mop sink, and hand wash sink.
 2. New multi-unit facility, or new "strip mall" facility, owners shall contact the City prior to conducting private plumbing work at the multi-unit facility site. Multi-unit facility owners, or their designated contractor, shall have plans for separate private wastewater lines for kitchen and sanitary wastewater for each "individual" unit. In addition, the plans shall identify "stub-out" locations to accommodate a minimum 1,000 gallon grease interceptor for each unit of the multi-unit facility. New multi-unit facility, or new "strip mall" facility owners shall consider suitable physical property space and sewer gradient that will be conducive to the installation of an exterior, in-ground grease interceptor when determining the building location.
 3. FSEs located in a new multi-unit facility shall have a minimum of a 1,000 gallon

C. Access Openings (Manholes)

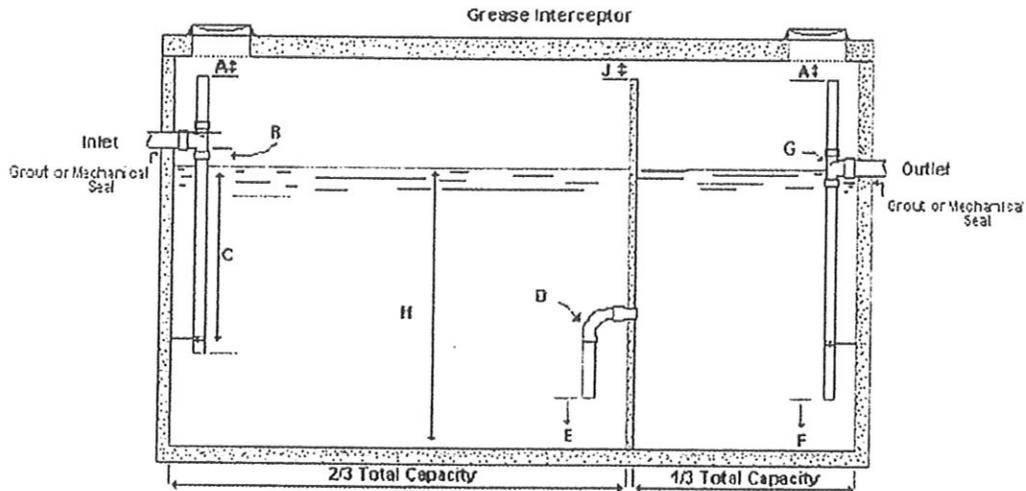
1. Access to grease interceptors shall be provided by a minimum of 1 manhole per interceptor division (baffle chamber) and of 24-inch minimum dimensions terminating 1 inch above finished grade with cast iron frame and cover. An 8" thick concrete pad extending a minimum of 12" beyond the outside dimension of the manhole frame shall be provided. One manhole shall be located above the inlet tee hatch and the other manhole shall be located above the outlet tee hatch. A minimum of 24" of clear opening above each manhole access shall be maintained to facilitate maintenance, cleaning, pumping, and inspections.
2. Access openings shall be mechanically sealed and gas tight to contain odors and bacteria and to exclude vermin and ground water, in a manner that permits regular reuses.
3. The manholes are to be accessible for inspection by the City.

D. Additional Requirements

1. Water Tight – Precast concrete grease interceptors shall be constructed to be watertight. A static water test shall be conducted by the installer and timed so as to permit verification through visual inspection by regulatory agent. The water test shall consist of plugging the outlet (and the inlet if necessary) and filling the tank(s) with water to the tank top a minimum of 24 hours before the inspection. The tank shall not lose water during this test period. Certification by the plumbing contractor shall be supplied to the City prior to final approval of grease control equipment.
2. Location – Grease interceptors shall be located so as to be readily accessible for cleaning, maintenance, and inspections. They should be located close to the fixture(s) discharging the greasy wastestream. If possible, grease interceptors should not be installed in "drive-thru" lanes or a parking area. Grease interceptor access manholes shall never be paved over.
3. Cleaning – Grease interceptors shall be cleaned at a frequency of not less than once every ninety (90) days unless approved by the City. Approval will be granted on a case by case situation with submittal by the FSE documenting proof of proposed frequency. Grease interceptors must be pumped-in-full when the total accumulations of surface FOG (including floating solids) and settled solids reaches twenty-five percent (25%) of the grease interceptor's overall liquid depth. This criterion is referred to as the "25 Percent Rule". Some FSEs may have to pump their grease interceptors on a 30 day or 60 day schedule to meet the 25% rule criteria. At no time, shall the cleaning frequency exceed ninety (90) days unless approved by the City. Approval will be granted on a case by case situation with submittal by the FSE documenting proof of proposed frequency.
4. Responsibility – Removal of the grease from the wastewater routed to a public or private sanitary system, is the responsibility of the user/owner.
5. Construction Material – Grease Interceptors shall be constructed of sound durable materials, not subject to excessive corrosion or decay, and shall be water and gas tight. Each interceptor shall be structurally designed to withstand any anticipated load to be placed on the interceptor (i.e. vehicular traffic in parking or driving areas).

6. Note: Concrete materials and other grease interceptor materials shall meet the American National Standards Institute, Inc. (ANSI) and International Association of Plumbing and Mechanical Officials (IAPMO) standards.
7. Marking and Identification – Prefabricated gravity grease interceptors shall be permanently and legibly marked with the following:
 - a. Manufacturer's name or trademark, or both
 - b. Model number
 - c. Capacity
 - d. Month and year of manufacture
 - e. Load limits and maximum recommended depth of earth cover in feet; and
 - f. Inlet and outlet

Illustration



- A.) Minimum 6", but not less than pipe diameter.
- B.) Inlet pipe invert to be 2 1/2" above liquid surface.
- C.) Inlet pipe to terminate 2/3 depth of water level.
- D.) 90 degree Sweep, minimum size - 6".
- E.) 12" from floor to end of sweep.
- F.) 12" from floor to end of outlet pipe.
- G.) Outlet pipe no smaller than inlet pipe, minimum - 4".
- H.) Minimum depth of liquid capacity - 42".
- J.) Maximum distance from ceiling - 6".

IX. Grease Interceptor Cleaning/Maintenance Requirements

- A. Partial pump of interceptor contents or on-site pump and treatment of interceptor contents will NOT be allowed due to reintroduction of fats, oils and grease to the interceptor and pursuant to City of Oak Ridge Sewer Use Ordinance §13-307 and §13-308, and as referenced in the Code of Federal Regulations (CFR) § 403.5 (b)(8), which states "*Prohibited discharges*. No persons shall discharge or cause or allow to be discharged or deposited into the City's wastewater system any wastewater that contains the following: Any trucked or hauled pollutants, except at discharge points designated and approved by the City."
- B. Grease interceptors must be pumped-in-full (total pump of all contents) when the total accumulations of surface FOG (including floating solids) and settled solids reaches twenty-five percent (25%) of the grease interceptor's overall liquid depth. This criterion is referred to as the "25 Percent Rule". At no time, shall the cleaning frequency exceed ninety (90) days unless approved by the City. Approval will be granted on a case by case situation with submittal by the FSE documenting proof of proposed frequency. Some existing FSEs in Class 2 through 5 will need to consider a pumping schedule of thirty (30) days or sixty (60) days to meet this requirement.
- C. The Grease interceptor effluent-T will be inspected during cleaning and maintenance and the condition noted by the grease waste hauler's company or individual conducting the maintenance. Effluent-T's that are loose, defective, or not attached must be repaired or replaced immediately. Any repairs to the grease interceptor should be documented and kept on file at the FSE.
- D. Grease Interceptors must have access manholes over the influent-T and effluent-T for inspection and ease of cleaning/maintenance. Access manholes will be provided for all separate compartments of interceptors for complete cleaning (i.e. interceptor with two main baffles or three compartments will have access manholes at each compartment).
- E. Grease Interceptor waste must be hauled offsite and disposed at a State or POTW approved disposal location.
- F. Grease Interceptors must be "certified" annually by a grease waste hauler or plumber. Grease Interceptor Certification (Form A) must be completed and submitted to City annually. See Section III, General Requirements, F and G.

X. Grease Trap Sizing, Installation and Maintenance

- A. All grease traps will have flow control restrictor and be properly vented. Failure to have the flow restrictor and venting will be considered a violation.
- B. All new FSEs that are allowed to install grease traps must have City approval prior to starting operations.
- C. Grease Trap minimum size requirement is a 20 gallon per minute / 40 pound capacity trap.
- D. Grease Traps must have the Plumbing Drainage Institute certification, and be installed as per manufacturer's specifications.

- E. No automatic dishwasher shall be connected to an under-the-sink grease trap or floor grease trap. Dishwashers will cause hydraulic overload of the grease trap.
- F. No automatic drip or feed system for additives is allowed prior to entering the grease trap without written approval from the Grease Management Coordinator.
- G. A single grease trap device shall be installed for each significant kitchen fixture unit (i.e. each 3 compartment sink). The City must approve the number of grease traps and connections to the grease trap.
- H. During cleaning of the grease trap, the flow restrictor shall be checked to ensure it is attached and operational.
- I. Grease Traps will be cleaned of complete fats, oils, and grease and food solids at a minimum of every thirty (30) days. If the FOG and food solids content of the grease trap is greater than 25%, then the grease trap must be cleaned as frequently as needed to prevent 25% of capacity being occupied with FOG and food solids.
- J. Grease Trap waste should be sealed or placed in a container to prevent leachate from leaking, and then disposed, or hauled offsite by a grease waste hauler or plumber to an approved disposal location.
- K. Grease Trap waste should not be mixed with yellow grease in the grease recycle container.
- L. Grease Traps must be "certified" annually. See Section III, General Requirements, F and G.

XI. Accidental Discharge Prevention

Food Service Establishments shall provide such facilities and institute such procedures as are reasonably necessary to prevent or minimize the potential for accidental discharge of fats, oils, and grease into the sewage collection system. This includes implementation of "Best Management Practices" protocols.

XII. "Additives" Prohibition for use as Grease Management and Control

- A. Additives include but are not limited to products that contain solvents, emulsifiers, surfactants, caustics, acids, enzymes and bacteria.
- B. Use of biological additives is discouraged. Any additive placed into the grease trap or building discharge designed to absorb, purge, consume, treat or otherwise eliminate grease shall require written approval by the Grease Management Coordinator. If the City identifies FOG in the downstream sewer system from a FSE that is using an additive, then the City may require the FSE to discontinue use of the additive.
- C. Additive use will not be a substitute for regular, required cleaning or pumping of grease control equipment.
- D. This FOG Management Policy prohibits the use of chemicals, acids, caustics, enzymes, hot water, emulsifiers, surfactants, or other additives to cause oil or grease to pass through the user's grease trap or grease interceptor designed to remove oil and grease.

XIII. Right of Entry – Inspection and Monitoring

- A. The City, or its authorized representative, shall have the right to enter the premises of FSEs to determine whether the FSE is complying with the requirements of this FOG Management Policy and/or the City of Oak Ridge Sewer Use Ordinance (See City Code §18-314(2) *Right of Entry: Inspection and Sampling*). FSEs shall allow City personnel, or their authorized representative, upon presentation of proper credentials, full access to all parts of the premises for the purpose of inspection, monitoring, and/or records examination. Unreasonable delays in allowing City personnel access to the FSE premises shall be a violation of this FOG Management Policy and the City of Oak Ridge Sewer Use Ordinance.
- B. All grease interceptors/traps shall be subject to review, evaluation and inspection by the City personnel, or their authorized representative, during normal working hours. Inspections will determine proper maintenance, changes in operation, proper records and files, ability of interceptor to trap and prevent grease from entering the system and any other factors pertaining to grease management. City personnel, or their authorized representative, reserve the right to make determinations of interceptor/trap condition and adequacy based on review of all information regarding the interceptor/trap performance and require cleaning, maintenance, modification or replacement. All records will be available on site for review by City personnel, or their authorized representative, for a period of thirty (36) months.
- C. The City may require that the FSE install monitoring or additional pretreatment equipment deemed necessary for compliance with this FOG Management Policy and/or the City of Oak Ridge Sewer Use Ordinance.

XIV. Fee Option

The City may charge inspection, monitoring, assessment, impact, surcharge and/or permit fees to the food service establishments for reimbursement for the FOG program costs.

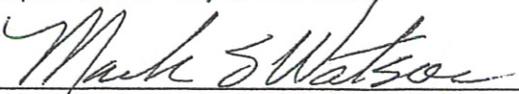
XV. FOG Treatment, Disposal and Resource Recovery Plan

The City, at the discretion of the Superintendent, may implement a FOG Treatment, Disposal and Resource Recovery Plan (Plan). The plan may be implemented if there problems exists with FOG disposal, continued FOG obstruction in the sewer system, or inconsistent maintenance provided by grease waste haulers to prevent FOG discharges. The plan will include a Request For Proposal (RFP) for the treatment and disposal of FOG waste generated from the City of Oak Ridge food service establishments. The RFP will include that the successful RFP respondent provide some form of beneficial reuse of the FOG waste that is treated. Also, the RFP may include a cost estimate for maintenance (complete pump of grease interceptors and grease traps) and certification of the grease control equipment of all City of Oak Ridge food service establishment grease interceptors and grease traps. The results of the RFP may provide a single source for GCE pumping, GCE certification, FOG treatment, FOG disposal, and reporting to the City. The City will implement quality control practices to ensure that the successful RFP respondent meets all RFP requirements. In addition, the total cost of the food service establishment GCE pumping, and FOG treatment and disposal should be the same price or at a lower price than the average market cost of GCE maintenance.

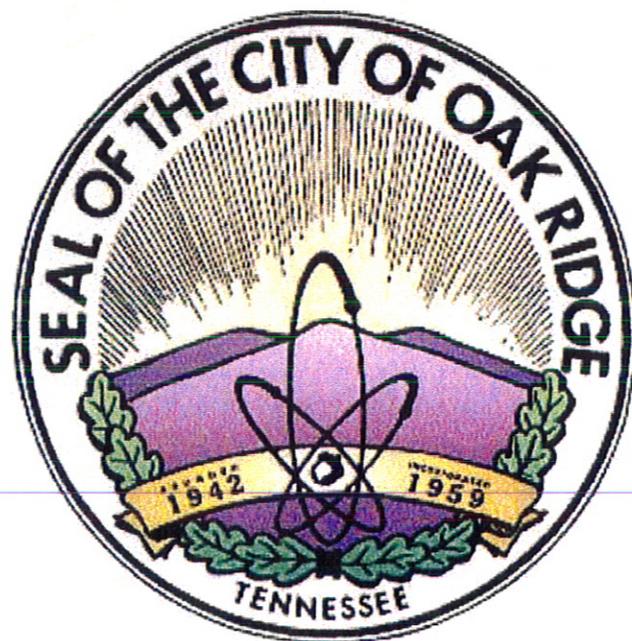
XVII. Violations and Enforcement Action

- A. Enforcement action against the food service establishment includes, but is not limited to, failure to clean or pump grease control equipment, failure to maintain grease control equipment including installation of properly functioning effluent-T and baffles, failure to install grease control equipment, failure to control FOG discharge from the FSE, failure to certify the grease interceptor or trap, responsible for sewer line obstruction, responsible for a sanitary sewer overflow, and use of additives so that FOG is diluted and pushed downstream of the FSE.
- B. Whenever City personnel, or their authorized representative, determine that a grease interceptor or trap is in need of installation, pumping, repairs, maintenance, or replacement a noncompliance notification or a notice of violation (NOV) will be issued stating the nature of the violation(s) and timeframe for corrective measures.
- C. If the FSE fails to initiate action in response to a noncompliance notification or NOV, a second notice will be issued and additional fees assessed. Fees may include costs associated with service calls for sewer line blockages, line cleaning, camera trucks, line and pump repairs, including all labor, material and equipment. Further non-compliance will result in escalation of enforcement action as determined in the City of Oak Ridge Food Service Establishment Enforcement Response Guide and the City Sewer Use Ordinance (See §18-317 *Enforcement Procedures*).
- D. Immediate discontinuance of water and/or wastewater service may be issued if the facility presents an imminent endangerment to the health, welfare of person or to the environment, causes stoppages or excessive maintenance to the sanitary sewer system, cause significant interference with the wastewater treatment plant, or cause the City to violate any condition of its NPDES permit. Service shall be reinstated when such conditions have been eliminated.
- E. In addition to any inspection or violation fees, any user who is found to have violated this chapter, may be assessed an administrative penalty of not to exceed ten thousand dollars (\$10,000) per violation. Each day on which non-compliance shall occur or continue shall be deemed a separate and distinct violation. Such assessment and all other fees may be added to the user's next scheduled sewer service charge.
- F. If inspections and field investigations determine that any fats, oils and grease interference or blockage in the sewer system, a sewage pumping station, or the wastewater treatment plant is caused by a particular food service establishment, then that food service establishment shall reimburse the City for all labor, equipment, supplies and disposal costs incurred by City to clean the interference or blockage. The charges will be added to the FSEs water/wastewater bill. Failure to reimburse the City may result in termination of water service.
- G. For all other violations not specifically mentioned above, the City will use the *City of Oak Ridge Food Service Establishment Enforcement Response Guide* as a guide for enforcement action.

Adopted this 23rd day of June 2011,


Mark S. Watson, City Manager

APPENDIX C: DOE QUARTERLY REPORT





► bear creek road ► p.o. box 2009 ► oak ridge, tn 37831-8111
► phone 865.241.8349 ► fax 865.241.4533 ► www.y12.doe.gov

October 19, 2011

COPY

Mr. Ken Glass, Environmental/Regulatory Compliance Coordinator
Public Works Department
City of Oak Ridge
Post Office Box 1
Oak Ridge, Tennessee 37831

Dear Mr. Glass:

Y-12 National Security Complex Sanitary Sewer Monitoring Data—Oak Ridge Sewer Use Ordinance (Permit 1-91)—Third Quarter Calendar Year 2011

As required by the Industrial and Commercial User Waste Water Discharge Permit 1-91, samples were obtained at the East End Sanitary Sewer Monitoring Station at the Y-12 National Security Complex throughout the third calendar quarter of 2011. The East End Sanitary Sewer Monitoring Station samples were analyzed and the resulting data are reported in Enclosure 1 for the months of July, August and September 2011. Enclosure 2 contains the signed Industrial Self-Analysis Form. Data for soluble versus insoluble uranium concentrations are summarized in Enclosure 3. Enclosure 4 contains the quality assurance data generated during this period. Enclosure 5 contains analytical data for the Industrial Landfill V leachate sample for the third quarter, as submitted by the operating contractor for Industrial Landfill V. Monthly uranium loading values are calculated and presented in Enclosure 6.

The result for Hexane Extractable Material (Oil and Grease) on September 8, 2011, was 27.6 mg/L. This value is above the monthly limit of 25 mg/L, but below the daily maximum limit of 50 mg/L. Therefore, a second monthly sample was taken on September 15, 2011. The analytical result from this sample was <5.9 mg/L which yields a monthly average that is less than the monthly limit.

As previously communicated to you via electronic mail, the Y-12 Complex exceeded the permitted daily maximum for total flow on September 5 and 6, 2011. The estimated flows on these two days were 3,014,220 and 2,090,550 gallons, respectively. These excessive flows were the result of slow moving Tropical Storm Lee. The flows were estimated due to the failure of the plastic bubble line during a 6-hour period of surcharge in the monitoring station. Enclosure 7 contains a more detailed description of the failure and the basis for the flow estimates.

Reduction of sanitary sewer inflow and infiltration continues to be a priority for the Y-12 Complex. Enclosure 8 provides a summary of actions completed to date and planned future actions.

Mr. Ken Glass
Page 2
October 19, 2011

I certify under penalty of law that this document and all enclosures 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.

If you have any questions, please contact L. O. Vaughan of my staff at 576-8108.

Sincerely yours,



William G. Reis
Vice President
Environment, Safety and Health

WGR:ris

Enclosures: As stated

cc/enc: J. P. Donnelly, YSO
J. A. Owsley, TDEC/DOE-ORO

cc: K. D. Ivey Jr., YSO
S. D. Morris, YSO

Enclosure 1
Letter, Reis to Glass
Dated: October 19, 2011

Letter Title

**Y-12 National Security Complex Sanitary Sewer Monitoring Data—Oak Ridge
Sewer Use Ordinance (Permit 1-91)—Third Quarter Calendar Year 2011**

Y-12 Sanitary Sewer Analytical Data

Sample Taken Date: 07/07/2011

Sample Taken Time: 09:00

Sampling Method 24HRFC

Parameter	Prefix	Result	Units	Precision	MDA	Limit	Units
Alpha activity		5.3	pCi/L	+/-3.1	1.9		pCi/L
Beta activity		14	pCi/L	+/-3.5	5.1		pCi/L

Conditions During Sampling

Company Name:	U. S. DOE Y-12 Plant	Type of Sample	
Permit #:	001	Composite:	X
Sampling Point #:	East End	Grab:	X
		Hrs of Sampling:	24
		Date of Sampling:	07/12/2011

Weather:	Rain, 74 deg F
Waste Stream Temp:	25.4 deg C
Time Sample Collected:	8:20
Volume Sample:	6 liters
Time of Grab Sample 1:	8:20
Time of Grab Sample 2:	8:20
Time of Grab Sample 3:	8:20
Initial Depth of Flow:	0.422 ft
Flow Meter Range:	0 - 2.0 ft
Flow Meter Base Reading:	0
Initial Meter Base Reading:	0
Time of Initial Reading:	8:55 on 7/11/11
Final Water Meter Reading:	480,520 gal
Time of Final Water Meter Reading:	8:20 on 7/12/11
Remarks:	pH was 7.2

Y-12 Sanitary Sewer Analytical Data

Sample Taken Date: 07/12/2011

Sample Taken Time: 08:20

Sampling Method 24HRFC

Parameter	Prefix	Result	Units	Precision	MDA	Limit	Units
Alpha activity		4.5	pCi/L	+/-3.5	3.3		pCi/L
Aluminum		0.398	mg/L				
Arsenic	<	0.002	mg/L			0.01	mg/L
Barium		0.0467	mg/L				
Beryllium	<	0.0002	mg/L				
Beta activity		7.8	pCi/L	+/-3.8	6.7		pCi/L
Biochemical Oxygen Demand (BOD)		45.9	mg/L			200	mg/L
Boron	<	0.1	mg/L				
Cadmium		0.000228	mg/L			0.0033	mg/L
Calcium		37.8	mg/L				
Chromium		0.00157	mg/L			0.05	mg/L
Cobalt		0.000538	mg/L				
Copper		0.0354	mg/L			0.14	mg/L
Iron		0.896	mg/L			10.0	mg/L
Kjeldahl Nitrogen		12.1	mg/L			45	mg/L
Lead		0.00128	mg/L			0.049	mg/L
Lithium		0.0145	mg/L				
Magnesium		9.06	mg/L				
Manganese		0.0321	mg/L				
Mercury		0.00586	mg/L			0.023	mg/L
Molybdenum		0.0649	mg/L				mg/L
Nickel		0.00288	mg/L			0.021	mg/L

Y-12 Sanitary Sewer Analytical Data

Potassium		6.53	mg/L		
Selenium	<	0.004	mg/L		mg/L
Silver		0.000646	mg/L	0.05	mg/L
Sodium		21.3	mg/L		
Strontium		0.108	mg/L		
Suspended Solids		87.0	mg/L	200	mg/L
Thorium	<	0.0002	mg/L		
Uranium		0.00482	mg/L		
Zinc		0.121	mg/L	0.35	mg/L

Sampling Method GRAB

Parameter	Prefix	Result	Units	Precision	MDA	Limit	Units
Cyanide	<	0.005	mg/L			0.041	mg/L
HEXANE EXTRACTABLE MATERIAL	<	6.0	mg/L			25	mg/L
Phenols - Total Recoverable		0.0361	mg/L			0.15	mg/L
Phenols - Total Recoverable		0.0103	mg/L			0.15	mg/L

Y-12 Sanitary Sewer Analytical Data

Sample Taken Date: 07/19/2011

Sample Taken Time: 08:50

Sampling Method 24HRFC

Parameter	Prefix	Result	Units	Precision	MDA	Limit	Units
Alpha activity		11	pCi/L	+/-3.9	3.2		pCi/L
Beta activity		7.2	pCi/L	+/-4.2	8		pCi/L

Y-12 Sanitary Sewer Analytical Data

Sample Taken Date: 07/26/2011

Sample Taken Time: 08:40

Sampling Method 24HRFC

Parameter	Prefix	Result	Units	Precision	MDA	Limit	Units
Alpha activity		12	pCi/L	+/-4.8	5.5		pCi/L
Beta activity		7.8	pCi/L	+/-4.9	9.2		pCi/L
U235 WEIGHT %		1.19	wt %	+/- .12			
Uranium		0.0104	mg/L	+/- .001			
Uranium-234	<	0.005	wt %				pCi/L
Uranium-236	<	0.005	wt %				pCi/L
Uranium-238		98.8	wt %				pCi/L

Conditions During Sampling

Company Name:	U. S. DOE Y-12 Plant	Type of Sample	
Permit #:	001	Composite:	X
Sampling Point #:	East End	Grab:	X
		Hrs of Sampling:	24
		Date of Sampling:	08/02/2011

Weather:	Sunny, 78 deg F
Waste Stream Temp:	25.8 deg C
Time Sample Collected:	8:30
Volume Sample:	8.5 liters
Time of Grab Sample 1:	8:30
Time of Grab Sample 2:	8:30
Time of Grab Sample 3:	8:30
Initial Depth of Flow:	0.410 ft
Flow Meter Range:	0 - 2.0 ft
Flow Meter Base Reading:	0
Initial Meter Base Reading:	0
Time of Initial Reading:	9:00 on 8/01/11
Final Water Meter Reading:	319,950 gal
Time of Final Water Meter Reading:	8:30 on 8/02/11
Remarks:	pH was 7.4

Y-12 Sanitary Sewer Analytical Data

Sample Taken Date: 08/02/2011

Sample Taken Time: 08:30

Parameter	Prefix	Result	Units	Precision	MDA	Limit	Units
Alpha activity		-0.076	pCi/L	+/-3.1	1.3		pCi/L
Aluminum		0.273	mg/L				
Arsenic	<	0.002	mg/L			0.01	mg/L
Barium		0.0422	mg/L				
Beryllium	<	0.0002	mg/L				
Beta activity		4.5	pCi/L	+/-2.1	1.9		pCi/L
Biochemical Oxygen Demand (BOD)		68.9	mg/L			200	mg/L
Boron	<	0.1	mg/L				
Cadmium		0.000652	mg/L			0.0033	mg/L
Calcium		41.7	mg/L				
Chromium		0.00140	mg/L			0.05	mg/L
Cobalt		0.000484	mg/L				
Copper		0.0285	mg/L			0.14	mg/L
Iron		0.648	mg/L			10.0	mg/L
Kjeldahl Nitrogen		16.7	mg/L			45	mg/L
Lead		0.00386	mg/L			0.049	mg/L
Lithium	<	0.01	mg/L				
Magnesium		10.2	mg/L				
Manganese		0.0293	mg/L				
Mercury		0.00438	mg/L			0.023	mg/L
Molybdenum		0.0720	mg/L				mg/L
Nickel		0.00327	mg/L			0.021	mg/L

Y-12 Sanitary Sewer Analytical Data

Potassium		7.82	mg/L			
Selenium	<	0.004	mg/L			mg/L
Silver		0.000522	mg/L		0.05	mg/L
Sodium		22.3	mg/L			
Strontium		0.114	mg/L			
Suspended Solids		91.5	mg/L		200	mg/L
Thorium	<	0.0002	mg/L			
Uranium		0.00564	mg/L			
Zinc		0.130	mg/L		0.35	mg/L

Sampling Method GRAB

Parameter	Prefix	Result	Units	Precision	MDA	Limit	Units
Cyanide	<	0.005	mg/L			0.041	mg/L
HEXANE EXTRACTABLE MATERIAL		5.91	mg/L			25	mg/L
Phenols - Total Recoverable		0.0475	mg/L			0.15	mg/L
Phenols - Total Recoverable		0.0191	mg/L			0.15	mg/L

Y-12 Sanitary Sewer Analytical Data

Sample Taken Date: 08/09/2011

Sample Taken Time: 09:05

Sampling Method	24HRFC						
Parameter	Prefix	Result	Units	Precision	MDA	Limit	Units
Alpha activity		0.48	pCi/L	+/-3.5	4.4		pCi/L
Beta activity		8.1	pCi/L	+/-4.4	8.1		pCi/L

Y-12 Sanitary Sewer Analytical Data

Sample Taken Date: 08/17/2011

Sample Taken Time: 13:10

Sampling Method 24HRFC

Parameter	Prefix	Result	Units	Precision	MDA	Limit	Units
Alpha activity		2.6	pCi/L	+/-3.5	1		pCi/L
Beta activity		8	pCi/L	+/-2.1	1.9		pCi/L

Y-12 Sanitary Sewer Analytical Data

Sample Taken Date: 08/23/2011

Sample Taken Time: 08:50

Sampling Method 24HRFC

Parameter	Prefix	Result	Units	Precision	MDA	Limit	Units
Alpha activity		6	pCi/L	+/-7.8	1.9		pCi/L
Beta activity		7.3	pCi/L	+/-4.3	4.1		pCi/L

Y-12 Sanitary Sewer Analytical Data

Sample Taken Date: 08/30/2011

Sample Taken Time: 08:10

Sampling Method	24HRFC						
Parameter	Prefix	Result	Units	Precision	MDA	Limit	Units
Alpha activity		4.4	pCi/L	+/-3.6	3.1		pCi/L
Beta activity		14	pCi/L	+/-4.5	7		pCi/L

Sampling Method	GRAB						
Parameter	Prefix	Result	Units	Precision	MDA	Limit	Units
1,1,1-Trichloroethane		5	U ug/L				
1,1,2,2-Tetrachloroethane		5	U ug/L				
1,1,2-Trichloroethane		5	U ug/L				
1,1-Dichloroethane		5	U ug/L				
1,1-Dichloroethene		5	U ug/L				
1,2-Dichloroethane		5	U ug/L				
1,2-Dichloropropane		5	U ug/L				
2-Chloroethylvinyl ether		5	U ug/L				
Benzene		5	U ug/L				mg/L
Bromodichloromethane		5	U ug/L				
Carbon tetrachloride		5	U ug/L				
Chlorobenzene		5	U ug/L				
Chloroethane		5	U ug/L				
Chloroform		6	U ug/L				
Chloromethane		5	U ug/L				
cis-1,3-Dichloropropene		5	U ug/L				
Dibromochloromethane		5	U ug/L				
Ethylbenzene		5	U ug/L				
Methylene chloride		5	U ug/L				

Y-12 Sanitary Sewer Analytical Data

Tetrachloroethene	3	J	ug/L	
Toluene	5	U	ug/L	mg/L
trans-1,2-Dichloroethene	5	U	ug/L	
trans-1,3-Dichloropropene	5	U	ug/L	
Trichloroethene	5	U	ug/L	
Vinyl chloride	5	U	ug/L	

Sampling Method RAD

Parameter	Prefix	Result	Units	Precision	MDA	Limit	Units
U235 WEIGHT %		1.54	wt %	+/- .15			
Uranium		0.006	mg/L	+/- .0006			
Uranium-234		0.0289	wt %				pCi/L
Uranium-236	<	0.005	wt %				pCi/L
Uranium-238		98.4	wt %				pCi/L

Sampling Method RADFIL

Parameter	Prefix	Result	Units	Precision	MDA	Limit	Units
U235 WEIGHT %		1.33	wt %	+/- .13			
Uranium		0.0054	mg/L	+/- .00054			
Uranium-234	<	0.005	wt %				pCi/L
Uranium-236	<	0.005	wt %				pCi/L
Uranium-238		98.7	wt %				pCi/L

Conditions During Sampling

Company Name:	<u>U. S. DOE Y-12 Plant</u>	Type of Sample	
Permit #:	<u>001</u>	Composite:	<u>X</u>
Sampling Point #:	<u>East End</u>	Grab:	<u>X</u>
		Hrs of Sampling:	<u>24</u>
		Date of Sampling:	<u>09/08/2011</u>

Weather:	Cloudy, 62 deg F
Waste Stream Temp:	24.5 deg C
Time Sample Collected:	8:40
Volume Sample:	10 liters
Time of Grab Sample 1:	8:40
Time of Grab Sample 2:	8:40
Time of Grab Sample 3:	8:40
Initial Depth of Flow:	0.608 ft
Flow Meter Range:	0 - 2.0 ft
Flow Meter Base Reading:	0
Initial Meter Base Reading:	0
Time of Initial Reading:	8:40 on 9/07/11
Final Water Meter Reading:	736,760 gal
Time of Final Water Meter Reading:	8:40 on 9/08/11
Remarks:	pH was 7.4

Y-12 Sanitary Sewer Analytical Data

Sample Taken Date: 09/08/2011

Sample Taken Time: 08:40

Parameter	Prefix	Result	Units	Precision	MDA	Limit	Units
Alpha activity		13	pCi/L	+/-4.5	3.1		pCi/L
Aluminum		0.300	mg/L				
Arsenic	<	0.002	mg/L			0.01	mg/L
Barium		0.0634	mg/L				
Beryllium	<	0.0002	mg/L				
Beta activity		8	pCi/L	+/-3.8	6.5		pCi/L
Biochemical Oxygen Demand (BOD)		46.2	mg/L			200	mg/L
Boron	<	0.1	mg/L				
Cadmium	<	0.0002	mg/L			0.0033	mg/L
Calcium		71.2	mg/L				
Chromium		0.00143	mg/L			0.05	mg/L
Cobalt		0.000914	mg/L				
Copper		0.0144	mg/L			0.14	mg/L
Iron		1.35	mg/L			10.0	mg/L
Kjeldahl Nitrogen		9.66	mg/L			45	mg/L
Lead		0.00207	mg/L			0.049	mg/L
Lithium		0.0211	mg/L				
Magnesium		15.4	mg/L				
Manganese		0.0616	mg/L				
Mercury		0.00155	mg/L			0.023	mg/L
Molybdenum		0.0267	mg/L				mg/L
Nickel		0.00465	mg/L			0.021	mg/L

Y-12 Sanitary Sewer Analytical Data

Potassium	6.99	mg/L		
Selenium	< 0.004	mg/L		mg/L
Silver	0.00108	mg/L	0.05	mg/L
Sodium	45.5	mg/L		
Strontium	0.199	mg/L		
Suspended Solids	40.5	mg/L	200	mg/L
Thorium	< 0.0002	mg/L		
U235 WEIGHT %	1.13	wt %	+/- .11	
Uranium	0.0125	mg/L	+/- .0012	
Uranium	0.0131	mg/L		
Uranium-234	0.0328	wt %		pCi/L
Uranium-236	0.0317	wt %		pCi/L
Uranium-238	98.8	wt %		pCi/L
Zinc	0.0599	mg/L	0.35	mg/L

Sampling Method GRAB

Parameter	Prefix	Result	Units	Precision	MDA	Limit	Units
Cyanide	<	0.005	mg/L			0.041	mg/L
HEXANE EXTRACTABLE MATERIAL		27.6	mg/L			25	mg/L
Phenols - Total Recoverable		0.0317	mg/L			0.15	mg/L

Y-12 Sanitary Sewer Analytical Data

Sample Taken Date: 09/13/2011

Sample Taken Time: 08:10

Sampling Method 24HRFC

Parameter	Prefix	Result	Units	Precision	MDA	Limit	Units
Alpha activity		3	pCi/L	+/-4	4.5		pCi/L
Beta activity		15	pCi/L	+/-4.6	7.2		pCi/L

Y-12 Sanitary Sewer Analytical Data

Sample Taken Date: 09/15/2011

Sample Taken Time: 09:50

Sampling Method GRAB

Parameter	Prefix	Result	Units	Precision	MDA	Limit	Units
HEXANE EXTRACTABLE MATERIAL	<	5.9	mg/L			25	mg/L

Y-12 Sanitary Sewer Analytical Data

Sample Taken Date: 09/20/2011

Sample Taken Time: 13:00

Sampling Method	24HRFC						
Parameter	Prefix	Result	Units	Precision	MDA	Limit	Units
Alpha activity		2.3	pCi/L	+/-4	4.9		pCi/L
Beta activity		4.8	pCi/L	+/-3.8	7.1		pCi/L

Y-12 Sanitary Sewer Analytical Data

Sample Taken Date: 09/27/2011

Sample Taken Time: 08:50

Sampling Method		24HRFC						
Parameter	Prefix	Result	Units	Precision	MDA	Limit	Units	
Alpha activity		5.8	pCi/L	+/-4.4	5.7		pCi/L	
Beta activity		9.9	pCi/L	+/-5	9.4		pCi/L	

Sampling Method		RAD						
Parameter	Prefix	Result	Units	Precision	MDA	Limit	Units	
U235 WEIGHT %		0.443	wt %	+/- .044				
Uranium		0.0073	mg/L	+/- .00073				
Uranium-234	<	0.005	wt %				pCi/L	
Uranium-236		0.468	wt %				pCi/L	
Uranium-238		99.1	wt %				pCi/L	

Enclosure 2
Letter, Reis to Glass
Dated: October 19, 2011

Letter Title

**Y-12 National Security Complex Sanitary Sewer Monitoring Data—Oak Ridge
Sewer Use Ordinance (Permit 1-91)—Third Quarter Calendar Year 2011**

Industrial Self-Analysis Form

Permit # 1-91

Company Name: U.S. DOE Y-12 Complex

Mailing Address: Post Office Box 2009

Oak Ridge, Tennessee

Zip Code 37831

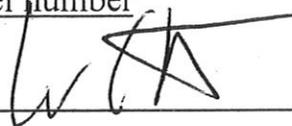
Premises Address: DOE Y-12 Complex, Bear Creek Road

Oak Ridge, Tennessee

Zip Code 37831

Parcel # Has no parcel number

Company Official: William G. Reis



Title: Vice President, Environment, Safety and Health

Number of Water Sources: 1

Number of Discharge Lines Connected to Oak Ridge Sewerage System: 1

Enclosure 3
Letter, Reis to Glass
Dated: October 19, 2011

Letter Title

**Y-12 National Security Complex Sanitary Sewer Monitoring Data—Oak Ridge
Sewer Use Ordinance (Permit 1-91)—Third Quarter Calendar Year 2011**

Soluble Versus Insoluble Uranium in Sanitary Sewer Effluents

East End Monitoring Station	8/30/2011
Total Uranium (mg/l)	0.006
Total percent U-235	1.54
Soluble Uranium	0.0054
Soluble percent U-235	1.33
Insoluble Uranium	0.0006
Insoluble percent U-235	NA

NA- Not Applicable

Enclosure 4
Letter, Reis to Glass
Dated: October 19, 2011

Letter Title

**Y-12 National Security Complex Sanitary Sewer Monitoring Data—Oak Ridge
Sewer Use Ordinance (Permit 1-91)—Third Quarter Calendar Year 2011**

Y-12 Sanitary Sewer Quality Assurance Data for the Fourth Quarter 2010

	Parameter	Ref.Sample	QC Type	% Recover	Rel. % Differen
A112410066	1,1,1-Trichloroethane	A112410066	MS	101	
A112410066	1,1,1-Trichloroethane	A112410066	MSD	96.6	
A112410066	1,1,2,2-Tetrachloroethane	A112410066	MS	94.6	
A112410066	1,1,2,2-Tetrachloroethane	A112410066	MSD	93.1	
A112410066	1,1,2-Trichloroethane	A112410066	MSD	95.8	
A112410066	1,1,2-Trichloroethane	A112410066	MS	99	
A112410066	1,1-Dichloroethane	A112410066	MS	106	
A112410066	1,1-Dichloroethane	A112410066	MSD	98	
A112410066	1,1-Dichloroethene	A112410066	MSD	95.8	
A112410066	1,1-Dichloroethene	A112410066	MS	95.7	
A112410066	1,2-Dichlorobenzene	A112410066	MSD	105	
A112410066	1,2-Dichlorobenzene	A112410066	MS	102	
A112410066	1,2-Dichloroethane	A112410066	MS	101	
A112410066	1,2-Dichloroethane	A112410066	MSD	96.1	
A112410066	1,2-Dichloropropane	A112410066	MS	102	
A112410066	1,2-Dichloropropane	A112410066	MSD	101	
A112410066	1,3-Dichlorobenzene	A112410066	MS	103	
A112410066	1,3-Dichlorobenzene	A112410066	MSD	103	
A112410066	1,4-Dichlorobenzene	A112410066	MSD	103	
A112410066	1,4-Dichlorobenzene	A112410066	MS	105	
A112410066	2-Chloroethylvinyl ether	A112410066	MS	92.8	
A112410066	2-Chloroethylvinyl ether	A112410066	MSD	91.2	
A110940162	Alpha activity	A110940162	DUP		49.8
A111730235	Alpha activity	A111730235	MS	84.3	
A111730241	Alpha activity	A111730241	MS	123	
A110940164	Alpha activity	A110940164	MS	89.6	
A111730234	Alpha activity	A111730234	DUP		346
A111730261	Alpha activity	A111730261	MS	88.8	
A111730260	Alpha activity	A111730260	DUP		700

	Parameter	Ref.Sample	QC Type	% Recover	Rel. % Differen
A111800012	Alpha activity	A111800012	DUP		116
A110870005	Alpha activity	A110870005	DUP		7.92
A111660323	Alpha activity	A111660323	MS	114	
A111730243	Alpha activity	A111730243	MS	119	
A111800009	Alpha activity	A111800009	MS	132	
A111730217	Alpha activity	A111730217	DUP		667
A110870005	Alpha activity	A110870005	MS	93.4	
A111800009	Alpha activity	A111800009	DUP		208
A111800010	Alpha activity	A111800010	MS	113	
A111800010	Alpha activity	A111800010	DUP		41.8
A111730239	Alpha activity	A111730239	DUP		105
A111800011	Alpha activity	A111800011	MS	114	
A111730218	Alpha activity	A111730218	MS	118	
A111730242	Alpha activity	A111730242	DUP		197
A111800011	Alpha activity	A111800011	DUP		4.69
A110760181	Aluminum	A110760181	MSD	108.3	2.5
A110760178	Aluminum	A110760178	MSD	106.4	4.1
A110760178	Aluminum	A110760178	MS	102.1	
A110760181	Aluminum	A110760181	MS	105.7	
A110760178	Antimony	A110760178	MSD	100.0	1.9
A110760181	Antimony	A110760181	MSD	100.9	0.1
A110760178	Antimony	A110760178	MS	98.1	
A110750117	Antimony	A110750117	MSD	99.7	1.8
A111090246	Antimony	A111090246	MS	98.5	
A111090246	Antimony	A111090246	MSD	98.8	0.3
A110750117	Antimony	A110750117	MS	101.5	
A110760181	Antimony	A110760181	MS	100.8	
A111090246	Arsenic	A111090246	MSD	98.7	1.2
A111090246	Arsenic	A111090246	MS	97.4	
A110760181	Arsenic	A110760181	MSD	101.3	0.2
A110760178	Arsenic	A110760178	MS	98.2	
A110750117	Arsenic	A110750117	MSD	91.4	3.4

	Parameter	Ref.Sample	QC Type	% Recover	Rel. % Differen
A110760178	Arsenic	A110760178	MSD	100.5	2.4
A110750117	Arsenic	A110750117	MS	94.6	
A110760181	Arsenic	A110760181	MS	101.1	
A110760181	Barium	A110760181	MSD	100.5	0.7
A110760178	Barium	A110760178	MSD	100.0	0.1
A110760181	Barium	A110760181	MS	101.2	
A110760178	Barium	A110760178	MS	100.1	
A112410066	Benzene	A112410066	MSD	102	
A112410066	Benzene	A112410066	MS	105	
A110760181	Beryllium	A110760181	MSD	98.4	0.1
A111090246	Beryllium	A111090246	MS	100.8	
A111090246	Beryllium	A111090246	MSD	99.5	1.3
A110760178	Beryllium	A110760178	MS	98.9	
A110760181	Beryllium	A110760181	MS	98.3	
A110760178	Beryllium	A110760178	MSD	101.2	2.3
A110750117	Beryllium	A110750117	MS	104.0	
A110750117	Beryllium	A110750117	MSD	101.3	2.6
A110940164	Beta activity	A110940164	MS	106	
A111800010	Beta activity	A111800010	MS	116	
A111800009	Beta activity	A111800009	MS	110	
A110940162	Beta activity	A110940162	DUP		49.1
A111800009	Beta activity	A111800009	DUP		329
A111730242	Beta activity	A111730242	DUP		180
A111800011	Beta activity	A111800011	MS	114	
A111800011	Beta activity	A111800011	DUP		61.5
A111660323	Beta activity	A111660323	MS	110	
A111800012	Beta activity	A111800012	DUP		14.5
A111800010	Beta activity	A111800010	DUP		51.4
A111730243	Beta activity	A111730243	MS	114	
A111730241	Beta activity	A111730241	MS	107	
A111730260	Beta activity	A111730260	DUP		3.04
A111730239	Beta activity	A111730239	DUP		27.9

	Parameter	Ref.Sample	QC Type	% Recover	Rel. % Differen
A110870005	Beta activity	A110870005	MS	118	
A110870005	Beta activity	A110870005	DUP		297
A111730234	Beta activity	A111730234	DUP		38.8
A111730218	Beta activity	A111730218	MS	107	
A111730217	Beta activity	A111730217	DUP		70.6
A111730235	Beta activity	A111730235	MS	107	
A111730261	Beta activity	A111730261	MS	108	
A110760181	Boron	A110760181	MSD	96.8	0.3
A110760178	Boron	A110760178	MS	97.0	
A110760181	Boron	A110760181	MS	97.1	
A110760178	Boron	A110760178	MSD	98.0	1.1
A112410066	Bromodichloromethane	A112410066	MS	106	
A112410066	Bromodichloromethane	A112410066	MSD	103	
A112410066	Bromoform	A112410066	MS	93.3	
A112410066	Bromoform	A112410066	MSD	93.5	
A112410066	Bromomethane	A112410066	MSD	88.6	
A112410066	Bromomethane	A112410066	MS	91.2	
A111090246	Cadmium	A111090246	MS	97.9	
A110750117	Cadmium	A110750117	MS	97.8	
A110760178	Cadmium	A110760178	MS	95.8	
A111090246	Cadmium	A111090246	MSD	96.7	1.2
A110760178	Cadmium	A110760178	MSD	99.1	3.4
A110760181	Cadmium	A110760181	MSD	97.2	0.4
A110760181	Cadmium	A110760181	MS	96.8	
A110750117	Cadmium	A110750117	MSD	95.0	3.0
A112410066	Carbon tetrachloride	A112410066	MSD	96	
A112410066	Carbon tetrachloride	A112410066	MS	99	
A112410066	Chlorobenzene	A112410066	MSD	104	
A112410066	Chlorobenzene	A112410066	MS	100	
A112410066	Chloroethane	A112410066	MS	105	
A112410066	Chloroethane	A112410066	MSD	103	
A112410066	Chloroform	A112410066	MSD	91	

	Parameter	Ref.Sample	QC Type	% Recover	Rel. % Differen
A112410066	Chloroform	A112410066	MS	105	
A112410066	Chloromethane	A112410066	MSD	115	
A112410066	Chloromethane	A112410066	MS	119	
A110760178	Chromium	A110760178	MSD	101.5	2.7
A111090246	Chromium	A111090246	MS	98.0	
A110750117	Chromium	A110750117	MS	98.7	
A110750117	Chromium	A110750117	MSD	98.8	0.1
A110760178	Chromium	A110760178	MS	98.7	
A111090246	Chromium	A111090246	MSD	98.0	0.0
A110760181	Chromium	A110760181	MS	98.3	
A110760181	Chromium	A110760181	MSD	98.6	0.3
A112410066	cis-1,3-Dichloropropene	A112410066	MS	94.1	
A112410066	cis-1,3-Dichloropropene	A112410066	MSD	92.1	
A110750117	Cobalt	A110750117	MS	96.5	
A110760181	Cobalt	A110760181	MSD	95.1	0.8
A110750117	Cobalt	A110750117	MSD	94.8	1.8
A110760181	Cobalt	A110760181	MS	94.3	
A111090246	Cobalt	A111090246	MS	97.0	
A111090246	Cobalt	A111090246	MSD	95.2	1.9
A110760178	Cobalt	A110760178	MS	95.1	
A110760178	Cobalt	A110760178	MSD	97.5	2.5
A110760178	Copper	A110760178	MS	97.4	
A110760181	Copper	A110760181	MSD	100.0	0.9
A110760181	Copper	A110760181	MS	100.9	
A110760178	Copper	A110760178	MSD	98.3	0.8
A111090246	Copper	A111090246	MSD	104.7	1.5
A111090246	Copper	A111090246	MS	103.1	
A110750127	Cyanide	A110750127	MS	96.2	
A111920066	Cyanide	A111920066	MS	85.6	
A110750126	Cyanide	A110750126	MS	84.6	
A112410066	Dibromochloromethane	A112410066	MSD	97.1	
A112410066	Dibromochloromethane	A112410066	MS	97.7	

	Parameter	Ref.Sample	QC Type	% Recover	Rel. % Differen
A112410066	Ethylbenzene	A112410066	MSD	101	
A112410066	Ethylbenzene	A112410066	MS	101	
A110750128	Hexane Extractable Material	A110750128	MS	13.6	
A112060121	Hexane Extractable Material	A112060121	MS	90.2	
A110750127	Hexane Extractable Material	A110750127	MS	47.5	
A112420001	Hexane Extractable Material	A112420001	MS	91.7	
A111290220	Hexane Extractable Material	A111290220	MS	97.6	
A112580000	Hexane Extractable Material	A112580000	MS	23.1	
A112420004	Hexane Extractable Material	A112420004	MS	89.0	
A111290232	Hexane Extractable Material	A111290232	MS	94.3	
A110760181	Iron	A110760181	MSD	100.7	1.1
A110760178	Iron	A110760178	MS	98.1	
A110760178	Iron	A110760178	MSD	103.1	5.0
A110760181	Iron	A110760181	MS	99.6	
A111780012	Kjeldahl Nitrogen	A111780012	MS	97.7	
A112130282	Kjeldahl Nitrogen	A112130282	MS	103.9	
A110750117	Lead	A110750117	MS	97.9	
A110760178	Lead	A110760178	MSD	98.6	2.7
A110760181	Lead	A110760181	MS	97.1	
A110760181	Lead	A110760181	MSD	98.8	1.7
A110750117	Lead	A110750117	MSD	95.3	2.7
A111090246	Lead	A111090246	MSD	98.2	2.8
A110760178	Lead	A110760178	MS	96.0	
A111090246	Lead	A111090246	MS	101.0	
A110760178	Lithium	A110760178	MS	103.8	
A110760178	Lithium	A110760178	MSD	103.4	0.4
A110760181	Lithium	A110760181	MS	105.6	
A110760181	Lithium	A110760181	MSD	104.4	1.2
A111090246	Manganese	A111090246	MS	98.0	
A110760181	Manganese	A110760181	MSD	98.1	0.5
A110760178	Manganese	A110760178	MSD	101.3	2.5
A111090246	Manganese	A111090246	MSD	97.1	0.9

	Parameter	Ref.Sample	QC Type	% Recover	Rel. % Differen
A110760181	Manganese	A110760181	MS	97.6	
A110760178	Manganese	A110760178	MS	98.8	
A110760181	Mercury	A110760181	MS	102.8	
A110830000	Mercury	A110830000	MS	116.5	
A110760181	Mercury	A110760181	MSD	105.6	2.7
A110830000	Mercury	A110830000	MSD	107.5	8.1
A112410066	Methylene chloride	A112410066	MSD	96.7	
A112410066	Methylene chloride	A112410066	MS	99.3	
A110760178	Molybdenum	A110760178	MSD	99.4	1.4
A110760178	Molybdenum	A110760178	MS	98.0	
A111090246	Molybdenum	A111090246	MSD	104.0	4.1
A110760181	Molybdenum	A110760181	MSD	96.8	1.0
A111090246	Molybdenum	A111090246	MS	108.4	
A110760181	Molybdenum	A110760181	MS	97.8	
A111090246	Nickel	A111090246	MS	97.0	
A110750117	Nickel	A110750117	MS	96.6	
A110760178	Nickel	A110760178	MS	98.2	
A110750117	Nickel	A110750117	MSD	94.8	1.9
A110760178	Nickel	A110760178	MSD	101.0	2.7
A111090246	Nickel	A111090246	MSD	98.6	1.6
A110760181	Nickel	A110760181	MS	96.7	
A110760181	Nickel	A110760181	MSD	97.6	0.8
A110760181	Niobium	A110760181	MSD	66.3	12.1
A110760178	Niobium	A110760178	MS	79.6	
A110760181	Niobium	A110760181	MS	74.9	
A110760178	Niobium	A110760178	MSD	81.4	2.3
A110750126	Phenols - Total Recoverable	A110750126	DUP		27.2
A110750126	Phenols - Total Recoverable	A110750126	MS	102.0	
A110750127	Phenols - Total Recoverable	A110750127	DUP		3.9
A110750128	Phenols - Total Recoverable	A110750128	MS	96.1	
A110750127	Phenols - Total Recoverable	A110750127	MS	100.0	
A110750128	Phenols - Total Recoverable	A110750128	DUP		20.2

	Parameter	Ref.Sample	QC Type	% Recover	Rel. % Differen
A110760178	Phosphorus	A110760178	MSD	98.6	2.5
A110760181	Phosphorus	A110760181	MSD	96.9	0.5
A110760181	Phosphorus	A110760181	MS	96.5	
A110760178	Phosphorus	A110760178	MS	96.1	
A110760178	Potassium	A110760178	MSD	103.5	1.7
A110760178	Potassium	A110760178	MS	101.7	
A110760181	Potassium	A110760181	MS	100.3	
A110760181	Potassium	A110760181	MSD	100.6	0.3
A110760181	Selenium	A110760181	MS	96.0	
A110750117	Selenium	A110750117	MSD	90.2	3.4
A110750117	Selenium	A110750117	MS	93.4	
A111090246	Selenium	A111090246	MS	92.2	
A110760181	Selenium	A110760181	MSD	96.7	0.7
A111090246	Selenium	A111090246	MSD	91.6	0.7
A110760178	Selenium	A110760178	MS	95.7	
A110760178	Selenium	A110760178	MSD	98.9	3.3
A110760178	Silver	A110760178	MS	96.4	
A111090246	Silver	A111090246	MSD	94.2	1.5
A110750117	Silver	A110750117	MS	98.9	
A110760181	Silver	A110760181	MS	95.4	
A110760178	Silver	A110760178	MSD	95.9	0.5
A111090246	Silver	A111090246	MS	95.6	
A110760181	Silver	A110760181	MSD	96.1	0.7
A110750117	Silver	A110750117	MSD	99.1	0.2
A110760181	Strontium	A110760181	MSD	101.0	0.3
A110760178	Strontium	A110760178	MSD	104.1	1.4
A110760178	Strontium	A110760178	MS	102.7	
A110760181	Strontium	A110760181	MS	101.3	
A110760182	Suspended Solids	A110760182	DUP		0.0
A112410066	Tetrachloroethene	A112410066	MSD	103	
A112410066	Tetrachloroethene	A112410066	MS	107	
A110760178	Thallium	A110760178	MS	96.1	

	Parameter	Ref.Sample	QC Type	% Recover	Rel. % Differen
A110750117	Thallium	A110750117	MSD	98.0	1.4
A111090246	Thallium	A111090246	MSD	98.6	0.4
A110750117	Thallium	A110750117	MS	99.4	
A110760178	Thallium	A110760178	MSD	99.4	3.4
A110760181	Thallium	A110760181	MSD	97.4	0.8
A110760181	Thallium	A110760181	MS	98.2	
A111090246	Thallium	A111090246	MS	99.0	
A110760178	Thorium	A110760178	MSD	101.1	1.9
A110760181	Thorium	A110760181	MSD	100.1	0.8
A110750117	Thorium	A110750117	MSD	74.2	7.3
A110760181	Thorium	A110760181	MS	99.3	
A110750117	Thorium	A110750117	MS	79.9	
A111090246	Thorium	A111090246	MSD	92.2	0.7
A111090246	Thorium	A111090246	MS	92.9	
A110760178	Thorium	A110760178	MS	99.1	
A110760181	Titanium	A110760181	MSD	98.5	0.6
A110760178	Titanium	A110760178	MS	97.1	
A110760181	Titanium	A110760181	MS	99.1	
A110760178	Titanium	A110760178	MSD	98.4	1.3
A112410066	Toluene	A112410066	MSD	101	
A112410066	Toluene	A112410066	MS	102	
A112410066	trans-1,2-Dichloroethene	A112410066	MS	102	
A112410066	trans-1,2-Dichloroethene	A112410066	MSD	99.8	
A112410066	trans-1,3-Dichloropropene	A112410066	MSD	96.2	
A112410066	trans-1,3-Dichloropropene	A112410066	MS	95.5	
A112410066	Trichloroethene	A112410066	MSD	101	
A112410066	Trichloroethene	A112410066	MS	100	
A112410066	Trichlorofluoromethane	A112410066	MSD	97.7	
A112410066	Trichlorofluoromethane	A112410066	MS	103	
A112280008	Uranium	A112280008	DUP		2.2
A110750117	Uranium	A110750117	MSD	97.4	0.9
A112560023	Uranium	A112560023	DUP		0.09

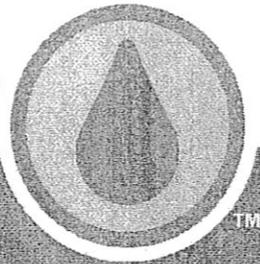
	Parameter	Ref.Sample	QC Type	% Recover	Rel. % Differen
A110760183	Uranium	A110760183	DUP		5.4
A112130022	Uranium	A112130022	DUP		0.11
A111090246	Uranium	A111090246	MS	103.7	
A110760177	Uranium	A110760177	DUP		2.1
A111800004	Uranium	A111800004	DUP		1.3
A111090246	Uranium	A111090246	MSD	103.5	0.2
A110750117	Uranium	A110750117	MS	96.5	
A110760177	Uranium-235	A110760177	DUP		9.6
A112130022	Uranium-235	A112130022	DUP		0.037
A111800004	Uranium-235	A111800004	DUP		4.7
A112560023	Uranium-235	A112560023	DUP		0.28
A110760183	Uranium-235	A110760183	DUP		150
A112280008	Uranium-235	A112280008	DUP		18
A110760178	Vanadium	A110760178	MSD	100.9	1.6
A110760181	Vanadium	A110760181	MSD	98.6	0.1
A110760178	Vanadium	A110760178	MS	99.3	
A110760181	Vanadium	A110760181	MS	98.5	
A112410066	Vinyl chloride	A112410066	MSD	101	
A112410066	Vinyl chloride	A112410066	MS	112	
A110760181	Zinc	A110760181	MS	96.0	
A110760181	Zinc	A110760181	MSD	96.5	0.4
A110760178	Zinc	A110760178	MS	97.0	
A110760178	Zinc	A110760178	MSD	99.7	2.8
A111090246	Zinc	A111090246	MSD	130.3	9.2
A111090246	Zinc	A111090246	MS	118.8	
A110760181	Zirconium	A110760181	MSD	97.8	0.9
A110760178	Zirconium	A110760178	MS	98.6	
A110760178	Zirconium	A110760178	MSD	99.0	0.4
A110760181	Zirconium	A110760181	MS	98.7	



A Waters Company

Larissa Danielle Welch
DOE Y-12 National Security Complex
Y-12 National Security Complex
PO Box 2009, Build. 9995, Rm. 205
Oak Ridge, TN 37831-8189

WS-180



Final Report

WatR™ Supply Proficiency Testing

WatR™ Supply Study

Open Date: 07/05/11

Close Date: 08/19/11

Report Issued Date: 09/09/11



A Waters Company

September 9, 2011

Larissa Danielle Welch
DOE Y-12 National Security Complex
Y-12 National Security Complex
PO Box 2009, Build. 9995, Rm. 205
Oak Ridge, TN 37831-8189

Enclosed is your final report for ERA's WS-180 WatR™ Supply Proficiency Testing (PT) study. Your final report includes an evaluation of all results submitted by your laboratory to ERA.

Data Evaluation Protocols: All analytes in ERA's WS-180 WatR™ Supply Proficiency Testing (PT) study have been evaluated using the following tiered approach. If the analyte is listed in the current TNI Fields of Proficiency Testing (FoPT) tables, the evaluation was completed by comparing the reported result to the acceptance limits generated using the criteria contained in the TNI FoPT tables. If the analyte is not included in the TNI FoPT tables, the reported result has been evaluated using the procedures outlined in ERA's Standard Operating Procedure for the Generation of Performance Acceptance Limits (SOP 0260).

Please note the following changes to our final reports:

- At the request of the TNI Accreditation Council, we have included a Laboratory Exception Report that includes a list of all analytes reported with less than qualifiers when the assigned value was greater than "0." In addition, because we have received many requests from laboratories, this report also includes a list of all analytes with "Not Acceptable" evaluations.
- Some states have elected not to convert to the 2009 TNI Standards at this time. If you have released your results to a state that has retained the 2003 NELAC Evaluation Criteria, your final report will include a section that evaluates the results according to the 2003 Standard in addition to the 2009 TNI Standards.

Corrective Action Help: As part of your accreditation(s), you may be required to identify the root cause of any "Not Acceptable" results, implement the necessary corrective actions, and then satisfy your PT requirements by participating in a Supplemental (QuiK™ Response) or future ERA PT study. ERA's technical staff is available to help your laboratory resolve any technical issues that may be impairing your PT performance and possibly affecting your routine data quality. Our laboratory and technical staff have well over three hundred years of collective experience in performing the full range of environmental analyses. As part of our technical support, ERA offers QC samples that can be helpful in helping you work through your technical issues.

Thank you for your participation in ERA's WS-180 WatR™ Supply Proficiency Testing study. If you have any questions, please contact our Proficiency Testing Department at 1-800-372-0122.

Sincerely,

A handwritten signature in black ink that reads "Jay R. McBurney".

Jay R. McBurney
Quality Program Manager

attachments
jrm



A Waters Company

Report Recipient	Contact/Phone Number	Reporting Type	Evaluation Type
Tennessee	Sandy Rittenhouse / 615-532-0191	All Analytes	2009 TNI
Utah	Kristin Brown / 801-965-2540	All Analytes	2009 TNI



A Waters Company

WS-180 Definitions & Study Discussion

Study Dates: 07/05/11 - 08/19/11

Report Issued: 09/09/11

WS Study Definitions

The Reported Value is the value that the laboratory reported to ERA.

The ERA Assigned Values are compliant with the current FoPT tables. A parameter not added to the standard is given an Assigned Value of "< PTRL" per the guidelines contained in the 2009 TNI Standards. The assigned values are directly traceable to the commercially prepared starting materials used to manufacture the PT standards.

The Acceptance Limits are established per the criteria contained in the most current TNI FoPT tables, or ERA's SOP for the Generation of Performance Acceptance Limits™ as applicable.

The Performance Evaluation:

- Acceptable = Reported Value falls within the Acceptance Limits.
- Not Acceptable = Reported Value falls outside the Acceptance Limits.
- No Evaluation = Reported Value cannot be evaluated.
- Not Reported = No Value reported.

The Method Description is the method the laboratory reported to ERA.

WS Study Discussion

ERA's WS-180 WatR™Supply Proficiency Testing study has been reviewed by ERA senior management and certified compliant with the requirements of the 2009 TNI PT Standard and the criteria contained in the current TNI FoPT tables.

ERA's WS-180 WatR™Supply study standards were examined for any anomalies. A full review of all homogeneity, stability and accuracy verification data was completed. All analytical verification data for all analytes in the standards met the acceptance criteria contained in the 2009 TNI PT Standard and the criteria contained in the current TNI Fields of Proficiency Testing (FoPT) tables.

The data submitted by participating laboratories was also examined for study anomalies. There were no anomalies observed during the statistical review of the data.

ERA's WS-180 WatR™Supply study reports shall not be reproduced except in their entirety and not without the permission of the participating laboratories. The report must not be used by the participating laboratories to claim product endorsement by any agency of the U. S. government.

The data contained herein are confidential and intended for your use only.

If you have any questions or concerns regarding your assessment in ERA's WatR™Supply Proficiency Testing program, please contact our Proficiency Testing Department at 1-800-372-0122.





WS-180 Laboratory Exception Report

A Waters Company

Larissa Danielle Welch
QA/QC Manager
DOE Y-12 National Security Complex
Y-12 National Security Complex
PO Box 2009, Build. 9995, Rm. 205
Oak Ridge, TN 37831-8189
865-576-3099

EPA ID:
ERA Customer Number:
Report Issued:
Study Dates:

TN00023
U264705
09/09/11
07/05/11 - 08/19/11

2009 TNI Evaluation Check: There are no values reported with < where the assigned value was greater than 0.

Not Acceptable Evaluations: There were no Not Acceptable evaluations for this study.





A Waters Company

2009 TNI Evaluation Report

Study: **WS-180**

ERA Customer Number: **U264705**

Laboratory Name: **DOE Y-12 National
Security Complex**

Inorganic Results





WS-180 2009 TNI Evaluation Final Complete Report

A Waters Company

Larissa Danielle Welch
 QA/QC Manager
 DOE Y-12 National Security Complex
 Y-12 National Security Complex
 PO Box 2009, Build. 9995, Rm. 205
 Oak Ridge, TN 37831-8189
 865-576-3099

EPA ID:
 ERA Customer Number:
 Report Issued:
 Study Dates:

TN00023
 U264705
 09/09/11
 07/05/11 - 08/19/11

NELAC Analyte Code	Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description	Analysis Date	Z Score	Study Mean	Study Standard Deviation	Analyst Name
WS Hardness (cat# 555)												
1035	Calcium	mg/L	45.2	46.8	41.7 - 52.2	Acceptable	EPA 200.7	8/3/2011	-1.11	47.1	1.74	
1085	Magnesium	mg/L	15.4	14.8	13.3 - 16.5	Acceptable	EPA 200.7	8/3/2011	0.919	14.9	0.581	
1155	Sodium	mg/L	19.0	18.7	16.5 - 20.6	Acceptable	EPA 200.7	8/3/2011	0.409	18.6	1.06	
1550	Calcium Hardness as CaCO3	mg/L	117	117	104 - 130	Not Reported				118	4.02	
1755	Total Hardness as CaCO3	mg/L	178	178	159 - 198	Not Reported				179	6.27	
WS Inorganics (cat# 591)												
1505	Alkalinity as CaCO3	mg/L	68.8	68.5	61.7 - 75.4	Acceptable	SM2320B 18th ED	7/19/2011	0.892	66.9	2.11	
1575	Chloride	mg/L	26.6	26.5	23.4 - 29.8	Acceptable	EPA 300.0	7/19/2011	0.263	26.3	1.13	
1610	Conductivity at 25°C	umhos/cm	566	560	504 - 616	Acceptable	EPA 120.1	7/19/2011	0.296	561	16.8	
1730	Fluoride	mg/L	3.90	4.16	3.74 - 4.58	Acceptable	EPA 300.0	7/19/2011	-1.08	4.11	0.194	
1820	Nitrate + Nitrite as N	mg/L	4.84	4.67	4.15 - 5.14	Acceptable	EPA 353.2	7/19/2011	1.22	4.62	0.185	
1810	Nitrate as N	mg/L	4.69	4.67	4.20 - 5.14	Acceptable	EPA 300.0	7/19/2011	0.388	4.60	0.224	
1125	Potassium	mg/L	21.0	21.6	18.6 - 24.9	Acceptable	EPA 200.7	8/3/2011	-0.65	21.6	0.971	
2000	Sulfate	mg/L	121	123	108 - 137	Acceptable	EPA 300.0	7/19/2011	-0.197	122	5.22	
1955	Total Dissolved Solids at 180°C	mg/L	397	402	258 - 546	Acceptable	SM2540C 18th ED	7/12/2011	-0.242	402	22.4	
WS pH (cat# 552)												
1900	pH	S.U.	6.92	6.90	6.70 - 7.10	Acceptable	EPA 150.1	7/26/2011	-0.17	6.93	0.0448	



All analytes are included in ERA's A2LA accreditation. Lab Code: 1539-01





WS-180 2009 TNI Evaluation Final Complete Report

A Waters Company

Larissa Danielle Welch
 QA/QC Manager
 DOE Y-12 National Security Complex
 Y-12 National Security Complex
 PO Box 2009, Buid. 9995, Rm. 205
 Oak Ridge, TN 37831-8189
 865-576-3099

EPA ID: TN00023
 ERA Customer Number: U264705
 Report Issued: 09/09/11
 Study Dates: 07/05/11 - 08/19/11

NELAC Analyte Code	Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description	Analysis Date	Z Score	Study Mean	Study Standard Deviation	Analyst Name
WS Metals (cat# 590)												
1000	Aluminum	µg/L	201	182	147 - 224	Acceptable	EPA 200.7	8/3/2011	0.861	188	15.6	
1005	Antimony	µg/L		21.1	14.8 - 27.4	Not Reported				21.2	1.51	
1010	Arsenic	µg/L		15.8	11.1 - 20.5	Not Reported				16.0	1.13	
1015	Barium	µg/L	1310	1300	1100 - 1500	Acceptable	EPA 200.7	8/3/2011	0.192	1300	52.1	
1020	Beryllium	µg/L	5.79	5.95	5.06 - 6.84	Acceptable	EPA 200.7	8/3/2011	-0.35	5.91	0.340	
1025	Boron	µg/L	934	945	834 - 1050	Acceptable	EPA 200.7	8/3/2011	-0.0231	935	47.4	
1030	Cadmium	µg/L		29.2	23.4 - 35.0	Not Reported				28.5	1.63	
1040	Chromium	µg/L		77.0	65.4 - 88.6	Not Reported				77.1	3.56	
1055	Copper	µg/L	1170	1180	1060 - 1300	Acceptable	EPA 200.7	8/3/2011	0.0815	1170	48.5	
1070	Iron	µg/L	1060	1050	935 - 1160	Acceptable	EPA 200.7	8/3/2011	0.209	1050	53.5	
1075	Lead	µg/L		79.1	55.4 - 103	Not Reported				79.2	4.52	
1090	Manganese	µg/L	855	856	770 - 942	Acceptable	EPA 200.7	8/3/2011	0.0581	853	35.6	
1100	Molybdenum	µg/L	120	118	103 - 130	Acceptable	EPA 200.7	8/3/2011	0.719	116	5.63	
1105	Nickel	µg/L	470	471	400 - 542	Acceptable	EPA 200.7	8/3/2011	0.129	467	21.7	
1140	Selenium	µg/L		71.5	57.2 - 85.8	Not Reported				71.1	5.12	
1150	Silver	µg/L	137	140	123 - 155	Acceptable	EPA 200.7	8/3/2011	-0.4	140	6.88	
1165	Thallium	µg/L		8.72	6.10 - 11.3	Not Reported				8.69	0.601	
1185	Vanadium	µg/L	853	859	773 - 945	Acceptable	EPA 200.7	8/3/2011	-0.0603	855	35.8	
1190	Zinc	µg/L	874	882	794 - 970	Acceptable	EPA 200.7	8/3/2011	-0.189	882	39.7	





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Larissa Danielle Welch
 QA/QC Manager
 DOE Y-12 National Security Complex
 Y-12 National Security Complex
 PO Box 2009, Build. 9995, Rm. 205
 Oak Ridge, TN 37831-8189
 865-576-3099

EPA ID:
 ERA Customer Number:
 Report Issued:
 Study Dates:

TN00023
 U264705
 09/09/11
 07/05/11 - 08/19/11

NELAC Analyte Code	Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description	Analysis Date	Z Score	Study Mean	Study Standard Deviation	Analyst Name
WS Metals (cat# 590)												
1000	Aluminum	µg/L		182	147 - 224	Not Reported				188	15.6	
1005	Antimony	µg/L	20.5	21.1	14.8 - 27.4	Acceptable	EPA 200.8	8/3/2011	-0.442	21.2	1.51	
1010	Arsenic	µg/L	15.4	15.8	11.1 - 20.5	Acceptable	EPA 200.8	8/3/2011	-0.549	16.0	1.13	
1015	Barium	µg/L		1300	1100 - 1500	Not Reported				1300	52.1	
1020	Beryllium	µg/L		5.95	5.06 - 6.84	Not Reported				5.91	0.340	
1025	Boron	µg/L		945	834 - 1050	Not Reported				935	47.4	
1030	Cadmium	µg/L	27.7	29.2	23.4 - 35.0	Acceptable	EPA 200.8	8/3/2011	-0.517	28.5	1.63	
1040	Chromium	µg/L	74.0	77.0	65.4 - 88.6	Acceptable	EPA 200.8	8/3/2011	-0.885	77.1	3.56	
1055	Copper	µg/L		1180	1060 - 1300	Not Reported				1170	48.5	
1070	Iron	µg/L		1050	935 - 1160	Not Reported				1050	53.5	
1075	Lead	µg/L	76.8	79.1	55.4 - 103	Acceptable	EPA 200.8	8/3/2011	-0.532	79.2	4.52	
1090	Manganese	µg/L		856	770 - 942	Not Reported				853	35.6	
1100	Molybdenum	µg/L		118	103 - 130	Not Reported				116	5.63	
1105	Nickel	µg/L	451	471	400 - 542	Acceptable	EPA 200.8	8/3/2011	-0.748	467	21.7	
1140	Selenium	µg/L	68.9	71.5	57.2 - 85.8	Acceptable	EPA 200.8	8/3/2011	-0.426	71.1	5.12	
1150	Silver	µg/L		140	123 - 155	Not Reported				140	6.88	
1165	Thallium	µg/L	8.60	8.72	6.10 - 11.3	Acceptable	EPA 200.8	8/3/2011	-0.146	8.69	0.601	
1185	Vanadium	µg/L		859	773 - 945	Not Reported				855	35.8	
1190	Zinc	µg/L		882	794 - 970	Not Reported				882	39.7	
WS Mercury (cat# 551)												
1095	Mercury	µg/L	3.51	3.21	2.25 - 4.17	Acceptable	EPA 245.1	8/8/2011	0.890	3.21	0.333	
WS Uranium (cat# 858)												
3055	Uranium (Nat)	µg/L	90.1	94.9	77.2 - 105	Acceptable	EPA 200.8	8/3/2011	-0.268	91.7	6.05	
WS Uranium (cat# 858)												
3055	Uranium (Nat)	µg/L	96.1	94.9	77.2 - 105	Acceptable	Y50-AC-65-8044	8/4/2011	0.724	91.7	6.05	



All analytes are included in ERA's A2LA accreditation. Lab Code: 1539-01





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QA/QC Manager
DOE Y-12 National Security Complex
Y-12 National Security Complex
PO Box 2009, Build. 9995, Rm. 205
Oak Ridge, TN 37831-8189
865-576-3099

EPA ID: TN00023
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NELAC Analyte Code	Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description	Analysis Date	Z Score	Study Mean	Study Standard Deviation	Analyst Name
WS Nitrite (cat# 594)												
1840	Nitrite as N	mg/L	1.25	1.26	1.07 - 1.45	Acceptable	EPA 300.0	7/19/2011	0.0476	1.25	0.0598	
WS Cyanide (cat# 556)												
1635	Cyanide	mg/L	0.363	0.365	0.274 - 0.456	Acceptable	EPA 335.2	7/19/2011	0.303	0.352	0.0344	
WS Organic Carbon (cat# 557)												
1710	Dissolved Organic Carbon (DOC)	mg/L	1.83	1.83	1.47 - 2.25	Not Reported				1.86	0.139	
2040	Total Organic Carbon (TOC)	mg/L	1.72	1.83	1.47 - 2.25	Acceptable	SM5310C 18th ED	8/10/2011	-0.928	1.90	0.191	



All analytes are included in ERA's A2LA accreditation. Lab Code: 1539-01





A Waters Company

2009 TNI Evaluation Report

Study: **WS-180**

ERA Customer Number: **U264705**

Laboratory Name: **DOE Y-12 National
Security Complex**

Organic Results





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NELAC Analyte Code	Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description	Analysis Date	Z Score	Study Mean	Study Standard Deviation	Analyst Name
WS Halomethanes (THMs) (cat# 842)												
4395	Bromodichloromethane	µg/L	22.6	21.9	17.5 - 26.3	Acceptable	EPA 524.2	8/3/2011	0.267	22.2	1.50	
4400	Bromoform	µg/L	43.3	42.8	34.2 - 51.4	Acceptable	EPA 524.2	8/3/2011	-0.0282	43.4	3.99	
4575	Chlorodibromomethane	µg/L	47.1	46.6	37.3 - 55.9	Acceptable	EPA 524.2	8/3/2011	0.351	46.0	3.26	
4505	Chloroform	µg/L	50.8	49.2	39.4 - 59.0	Acceptable	EPA 524.2	8/3/2011	0.535	48.8	3.68	
WS Regulated Volatiles (cat# 840)												
4375	Benzene	µg/L	7.8	7.33	4.40 - 10.3	Acceptable	EPA 524.2	8/3/2011	0.491	7.50	0.607	
4455	Carbon tetrachloride	µg/L	10.9	9.73	5.84 - 13.6	Acceptable	EPA 524.2	8/3/2011	1.53	9.49	0.921	
4475	Chlorobenzene	µg/L	12.4	12.1	9.68 - 14.5	Acceptable	EPA 524.2	8/3/2011	0.356	12.1	0.922	
4610	1,2-Dichlorobenzene	µg/L	6.1	6.23	3.74 - 8.72	Acceptable	EPA 524.2	8/3/2011	-0.31	6.27	0.563	
4620	1,4-Dichlorobenzene	µg/L	16.0	16.2	13.0 - 19.4	Acceptable	EPA 524.2	8/3/2011	0.129	15.8	1.38	
4635	1,2-Dichloroethane	µg/L	13.6	13.3	10.6 - 16.0	Acceptable	EPA 524.2	8/3/2011	0.288	13.3	1.02	
4640	1,1-Dichloroethylene	µg/L	4.5	3.62	2.17 - 5.07	Acceptable	EPA 524.2	8/3/2011	1.30	3.88	0.479	
4645	cis-1,2-Dichloroethylene	µg/L	3.3	3.09	1.85 - 4.33	Acceptable	EPA 524.2	8/3/2011	0.468	3.15	0.313	
4700	trans-1,2-Dichloroethylene	µg/L	19.8	18.6	14.9 - 22.3	Acceptable	EPA 524.2	8/3/2011	0.800	18.4	1.72	
4655	1,2-Dichloropropane	µg/L	7.3	7.22	4.33 - 10.1	Acceptable	EPA 524.2	8/3/2011	0.253	7.14	0.622	
4765	Ethylbenzene	µg/L	6.6	6.46	3.88 - 9.04	Acceptable	EPA 524.2	8/3/2011	0.126	6.53	0.539	
4975	Methylene chloride (Dichloromethane)	µg/L	12.0	10.9	8.72 - 13.1	Acceptable	EPA 524.2	8/3/2011	0.689	11.2	1.10	
5100	Styrene	µg/L	5.1	4.77	2.86 - 6.68	Acceptable	EPA 524.2	8/3/2011	0.100	5.05	0.533	
5115	Tetrachloroethylene	µg/L	6.5	6.61	3.97 - 9.25	Acceptable	EPA 524.2	8/3/2011	0.418	6.24	0.618	
5140	Toluene	µg/L	4.8	4.74	2.84 - 6.64	Acceptable	EPA 524.2	8/3/2011	0.428	4.64	0.373	
5155	1,2,4-Trichlorobenzene	µg/L	12.1	13.6	10.9 - 16.3	Acceptable	EPA 524.2	8/3/2011	-0.378	12.7	1.66	
5160	1,1,1-Trichloroethane	µg/L	10.0	9.07	5.44 - 12.7	Acceptable	EPA 524.2	8/3/2011	1.64	8.76	0.755	
5165	1,1,2-Trichloroethane	µg/L	9.7	10.2	8.16 - 12.2	Acceptable	EPA 524.2	8/3/2011	-0.672	10.2	0.805	
5170	Trichloroethylene	µg/L	2.4	2.30	1.38 - 3.22	Acceptable	EPA 524.2	8/3/2011	1.00	2.18	0.224	
5235	Vinyl chloride	µg/L	9.9	7.20	4.32 - 10.1	Acceptable	EPA 524.2	8/3/2011	1.24	8.11	1.44	
5260	Xylenes, total	µg/L	31.3	30.7	24.6 - 36.8	Acceptable	EPA 524.2	8/3/2011	0.133	30.9	3.02	





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QA/QC Manager
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Oak Ridge, TN 37831-8189
865-576-3099

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Study Dates: 07/05/11 - 08/19/11

NELAC Analyte Code	Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description	Analysis Date	Z Score	Study Mean	Study Standard Deviation	Analyst Name
WS Unregulated Volatiles (cat# 841)												
4385	Bromobenzene	µg/L	25.2	25.9	20.7 - 31.1	Acceptable	EPA 524.2	8/3/2011	-0.461	26.1	1.87	
4390	Bromochloromethane	µg/L	< 1	< 3.00	0.00 - 3.00	Acceptable	EPA 524.2	8/3/2011	0	0.00	0.00	
4950	Bromomethane	µg/L	< 1	< 3.00	0.00 - 3.00	Acceptable	EPA 524.2	8/3/2011	0	0.00	0.00	
5000	tert-Butyl methyl ether (MTBE)	µg/L	6.7	6.98	4.19 - 9.77	Acceptable	EPA 524.2	8/3/2011	-0.682	7.04	0.496	
4435	n-Butylbenzene	µg/L	< 1	< 3.00	0.00 - 3.00	Acceptable	EPA 524.2	8/3/2011	0	0.00	0.00	
4440	sec-Butylbenzene	µg/L	6.7	6.32	3.79 - 8.85	Acceptable	EPA 524.2	8/3/2011	0.278	6.51	0.673	
4445	tert-Butylbenzene	µg/L	15.4	15.4	12.3 - 18.5	Acceptable	EPA 524.2	8/3/2011	-0.212	15.8	1.65	
4485	Chloroethane	µg/L	16.1	13.4	8.04 - 18.8	Acceptable	EPA 524.2	8/3/2011	0.496	14.8	2.56	
4960	Chloromethane	µg/L	< 1	< 3.00	0.00 - 3.00	Acceptable	EPA 524.2	8/3/2011	0	12.1	0.00	
4535	2-Chlorotoluene	µg/L	46.5	47.0	37.6 - 56.4	Acceptable	EPA 524.2	8/3/2011	-0.121	47.0	4.51	
4540	4-Chlorotoluene	µg/L	11.8	11.9	7.14 - 16.7	Acceptable	EPA 524.2	8/3/2011	-0.556	12.5	1.33	
4595	Dibromomethane	µg/L	6.0	6.46	3.88 - 9.04	Acceptable	EPA 524.2	8/3/2011	-0.723	6.32	0.446	
4615	1,3-Dichlorobenzene	µg/L	< 1	< 3.00	0.00 - 3.00	Acceptable	EPA 524.2	8/3/2011	0	0.00	0.00	
4625	Dichlorodifluoromethane (Freon 12)	µg/L	< 1	< 3.00	0.00 - 3.00	Acceptable	EPA 524.2	8/3/2011	0	0.00	0.00	
4630	1,1-Dichloroethane	µg/L	52.3	49.7	39.8 - 59.6	Acceptable	EPA 524.2	8/3/2011	0.185	51.4	5.05	
4660	1,3-Dichloropropane	µg/L	< 1	< 3.00	0.00 - 3.00	Acceptable	EPA 524.2	8/3/2011	0	0.00	0.00	
4665	2,2-Dichloropropane	µg/L	44.2	41.3	33.0 - 49.6	Acceptable	EPA 524.2	8/3/2011	0.322	42.2	6.04	
4670	1,1-Dichloropropene	µg/L	16.8	15.7	12.6 - 18.8	Acceptable	EPA 524.2	8/3/2011	0.585	15.8	1.69	
4680	cis-1,3-Dichloropropene	µg/L	< 1	< 3.00	0.00 - 3.00	Acceptable	EPA 524.2	8/3/2011	0	0.00	0.00	
4685	trans-1,3-Dichloropropene	µg/L	10.3	11.8	7.08 - 16.5	Acceptable	EPA 524.2	8/3/2011	-0.145	10.4	1.05	
5175	Fluorochloromethane	µg/L	41.4	37.1	22.3 - 51.9	Acceptable	EPA 524.2	8/3/2011	0.261	39.6	6.82	





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NELAC Analyte Code	Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description	Analysis Date	Z Score	Study Mean	Study Standard Deviation	Analyst Name
<i>WS Unregulated Volatiles (cat# 841) (Continued)</i>												
4835	Hexachlorobutadiene	µg/L	< 2	< 3.00	0.00 - 3.00	Acceptable	EPA 524.2	8/3/2011	0	0.00	0.00	
4900	Isopropylbenzene	µg/L	41.6	38.3	30.6 - 46.0	Acceptable	EPA 524.2	8/3/2011	0.426	39.8	4.13	
4910	4-Isopropyltoluene	µg/L	40.4	37.6	30.1 - 45.1	Acceptable	EPA 524.2	8/3/2011	0.113	39.9	4.19	
5005	Naphthalene	µg/L	6.8	7.61	4.57 - 10.6	Acceptable	EPA 524.2	8/3/2011	-0.51	7.25	0.892	
5090	n-Propylbenzene	µg/L	10.4	10.3	6.18 - 14.4	Acceptable	EPA 524.2	8/3/2011	-0.183	10.6	1.04	
5105	1,1,1,2-Tetrachloroethane	µg/L	37.2	36.8	29.4 - 44.2	Acceptable	EPA 524.2	8/3/2011	-0.00832	37.2	2.03	
5110	1,1,2,2-Tetrachloroethane	µg/L	23.1	26.3	21.0 - 31.6	Acceptable	EPA 524.2	8/3/2011	-1.55	26.7	2.32	
5150	1,2,3-Trichlorobenzene	µg/L	45.7	45.5	36.4 - 54.6	Acceptable	EPA 524.2	8/3/2011	0.172	44.8	5.19	
5180	1,2,3-Trichloropropane (TCP)	µg/L	16.5	17.5	14.0 - 21.0	Acceptable	EPA 524.2	8/3/2011	-1.01	18.1	1.59	
5210	1,2,4-Trimethylbenzene	µg/L	24.7	23.8	19.0 - 28.6	Acceptable	EPA 524.2	8/3/2011	0.289	24.2	1.88	
5215	1,3,5-Trimethylbenzene	µg/L	26.4	24.2	19.4 - 29.0	Acceptable	EPA 524.2	8/3/2011	0.516	24.9	2.88	



Enclosure 5
Letter, Reis to Glass
Dated: October 19, 2011

Letter Title

**Y-12 National Security Complex Sanitary Sewer Monitoring Data—Oak Ridge
Sewer Use Ordinance (Permit 1-91)—Third Quarter Calendar Year 2011**

Y-12 Industrial Landfill V Leachate Analytical Data

Sample Taken Date: 08/22/2011

Sample Taken Time: 13:10

Sampling Method GRAB

<i>Parameter</i>	<i>Prefix</i>	<i>Result</i>	<i>Units</i>	<i>EPA Qual.</i>	<i>Precision</i>	<i>MDA</i>
1,1,1-Trichloroethane		5	ug/L	U		
Arsenic		0.005	mg/L	U		
Benzene		5	ug/L	U		
Biochemical Oxygen Demand (BOD)		2	mg/L	U		
Cadmium		0.001	mg/L	U		
Carbon tetrachloride		5	ug/L	U		
Chloroform		5	ug/L	U		
Chromium		0.005	mg/L	U		
Copper		0.056	mg/L			
Cyanide		0.01	mg/L	U		
Ethylbenzene		5	ug/L	U		
Iron		2.37	mg/L			
Kjeldahl Nitrogen		1.06	mg/L			
Lead		0.00642	mg/L			
Methylene chloride		5	ug/L	U		
Molybdenum		0.05	mg/L	U		
Nickel		0.0137	mg/L			
Oil and Grease		5	mg/L	U		
Phenols - Total Recoverable		0.01	mg/L	U		
Selenium		0.01	mg/L	U		
Silver		0.01	mg/L	U		
Suspended Solids		94.4	mg/L			
Tetrachloroethene		5	ug/L	U		
Toluene		5	ug/L	U		

trans-1,2-Dichloroethene	5	ug/L	U
Trichloroethene	5	ug/L	U
Zinc	0.0285	mg/L	

Enclosure 6
Letter, Reis to Glass
Dated: October 19, 2011

Letter Title

**Y-12 National Security Complex Sanitary Sewer Monitoring Data—Oak Ridge
Sewer Use Ordinance (Permit 1-91)—Third Quarter Calendar Year 2011**

Y-12 National Security Complex Sanitary Sewer Uranium Loading by Month in the Sanitary Sewer

Date	Monthly Average Uranium (mg/L)	Monthly Total Flow (Gallons)	Total Uranium (Grams)
Jan-00	0.005	23335000	441
Feb-00	0.005	22749000	396
Mar-00	0.007	22661000	557
Apr-00	0.007	22616000	620
May-00	0.005	21437000	421
Jun-00	0.007	21385000	566
Jul-00	0.004	19860000	300
Aug-00	0.003	18313000	208
Sep-00	0.003	17340000	164
Oct-00	0.002	17646000	160
Nov-00	0.003	18297000	225
Dec-00	0.004	21360000	303
Jan-01	0.004	22214000	319
Feb-01	0.008	23158000	700
Mar-01	0.006	19129000	398
Apr-01	0.006	15570000	353
May-01	0.004	15738000	226
Jun-01	0.004	15091000	228
Jul-01	0.004	17606000	240
Aug-01	0.004	16587000	235
Sep-01	0.005	17542000	332
Oct-01	0.003	14860000	191
Nov-01	0.003	15727000	163
Dec-01	0.006	20890000	513
Jan-02	0.006	25285000	554
Feb-02	0.006	20688000	489
Mar-02	0.007	22087000	543
Apr-02	0.005	16846000	344
May-02	0.006	21701000	513
Jun-02	0.002	18135000	154
Jul-02	0.004	20052000	271
Aug-02	0.002	17122000	141
Sep-02	0.004	21358000	305
Oct-02	0.007	20380000	548
Nov-02	0.010	21604000	796
Dec-02	0.009	23469000	798
Jan-03	0.005	19805000	374
Feb-03	0.009	26833000	877
Mar-03	0.007	19259000	488
Apr-03	0.007	19870000	554
May-03	0.008	20651000	589
Jun-03	0.006	17276000	405
Jul-03	0.005	19519000	350
Aug-03	0.005	18851000	347
Sep-03	0.005	17057000	322
Oct-03	0.003	15250000	164
Nov-03	0.005	20273000	387
Dec-03	0.009	19710000	663
Jan-04	0.007	18805000	526

Y-12 National Security Complex Sanitary Sewer Uranium Loading by Month in the Sanitary Sewer

Date	Monthly Average Uranium (mg/L)	Monthly Total Flow (Gallons)	Total Uranium (Grams)
Feb-04	0.008	20775000	630
Mar-04	0.007	20938000	533
Apr-04	0.006	15240000	344
May-04	0.004	14609000	217
Jun-04	0.007	19303000	512
Jul-04	0.005	19856000	370
Aug-04	0.003	20189000	230
Sep-04	0.007	23411000	606
Oct-04	0.004	19372000	300
Nov-04	0.008	23657000	678
Dec-04	0.008	26532000	850
Jan-05	0.006	22652000	535
Feb-05	0.007	20307000	553
Mar-05	0.006	19671000	416
Apr-05	Not Measured		
May-05	0.007	18373000	492
Jun-05	0.005	15945000	282
Jul-05	0.006	20319000	439
Aug-05	0.004	15766000	232
Sep-05	0.003	14332000	174
Oct-05	0.0041	13951360	216
Nov-05	Not Measured		
Dec-05	0.005	19863000	375
Jan-06	0.012	21493000	951
Feb-06	0.009	17376000	584
Mar-06	0.010	18600000	726
Apr-06	0.009	20906000	706
May-06	Not Measured		
Jun-06	0.014	15389000	785
Jul-06	0.010	16250000	639
Aug-06	0.018	18172000	1246
Sep-06	0.011	17669000	721
Oct-06	0.010	18107000	662
Nov-06	0.010	18722000	691
Dec-06	0.005	16428000	327
Jan-07	0.013	20793000	1008
Feb-07	0.008	17514000	521
Mar-07	0.006	17511000	418
Apr-07	0.011	17738000	724
May-07	0.005	15141000	264
Jun-07	0.004	11268000	184
Jul-07	0.008	16276000	475
Aug-07	0.003	16800000	194
Sep-07	0.003	16466000	202
Oct-07	0.003	17469000	201
Nov-07	0.010	18656000	693
Dec-07	0.008	19768000	632
Jan-08	0.009	20859000	731
Feb-08	0.013	20751000	1050
Mar-08	0.009	22662000	807

Y-12 National Security Complex Sanitary Sewer Uranium Loading by Month in the Sanitary Sewer

Date	Monthly Average Uranium (mg/L)	Monthly Total Flow (Gallons)	Total Uranium (Grams)
Apr-08	0.008	20988000	671
May-08	0.006	17853000	389
Jun-08	0.004	16821000	279
Jul-08	0.008	20082000	614
Aug-08	0.004	18104000	253
Sep-08	0.004	18821000	273
Oct-08	0.012	18484000	845
Nov-08	0.005	18082000	313
Dec-08	0.008	25092000	777
Jan-09	0.015	22669000	1260
Feb-09	0.011	18232000	779
Mar-09	0.006	23739000	499
Apr-09	0.007	18200000	475
May-09	0.012	18591000	829
Jun-09	0.005	17472000	308
Jul-09	0.007	15725000	393
Aug-09	0.010	15838000	620
Sep-09	0.005	14095000	256
Oct-09	0.010	17269000	672
Nov-09	0.009	15945000	544
Dec-09	0.007	21773000	572
Jan-10	0.005	21373000	415
Feb-10	0.006	23837000	530
Mar-10	0.003	21825000	269
Apr-10	0.003	17928000	213
May-10	0.005	18412000	339
Jun-10	0.006	21749000	493
Jul-10	0.002	24164000	200
Aug-10	0.005	18651000	331
Sep-10	0.004	17159000	258
Oct-10	0.006	12594000	296
Nov-10	0.005	16232000	278
Dec-10	0.008	16074000	505
Jan-11	0.008	14641000	452
Feb-11	0.008	14263000	457
Mar-11	0.010	19932000	721
Apr-11	0.008	17510000	518
May-11	0.007	12416000	340
Jun-11	0.003	14680000	191
Jul-11	0.008	13122000	377
Aug-11	0.006	11622000	249
Sep-11	0.013	15888000	769

Enclosure 7
Letter, Reis to Glass
Dated: October 19, 2011

Letter Title

**Y-12 National Security Complex Sanitary Sewer Monitoring Data—Oak Ridge
Sewer Use Ordinance (Permit 1-91)—Third Quarter Calendar Year 2011**

Y-12 National Security Complex
Upset Conditions and Flow Monitoring
September 5-7, 2011

The Y-12 National Security Complex (Y-12 Complex) is required to measure the volume of wastewater discharged to the City of Oak Ridge (COR) sanitary sewer system. This flow measurement is accomplished via a single weir box and an ISCO bubble flow meter installed at Outfall 01, typically referred to as Outfall SS6. This system has proven to be highly reliable and the resultant flow data is used by the COR for billing purposes and to determine compliance with the Y-12 Industrial and Commercial User Waste Water Discharge Permit. Like most municipal waste water collection systems, the Y-12 Complex experiences inflow and infiltration of storm water into the sewer system during periods of heavy rainfall.

On Monday, September 5, 2011, the Y-12 Complex received 6.51 inches of rainfall. According to the National Weather Service, Atlas 14, this is within the 90 percent confidence interval for a 24-hour, 100-year rain event. This rainfall was only part of a four-day, 9.43 inch rain event that was the result of slow moving Tropical Storm Lee.

As a result of this significant amount of rainfall on Monday, September 5, Outfall SS6 experienced a complete surcharge for approximately six hours (12:00 – 18:00). The surcharge is indicated by constant flow rate of 3,979 gallons per minute (gpm). At the end of this surcharge, the ISCO meter indicated the flow rate dropped immediately to approximately 200 gpm and remained at that level until 09:00 the following morning. This was the first indication that the ISCO meter was not functioning properly. Historically, the flow rate gradually decreases after a surcharge and does not drop dramatically as indicated by the flow meter.

The following is a timeline of events beginning at 09:00, Tuesday, September 6, and continuing through 09:00, Wednesday, September 7:

- Tuesday, September 6, 09:00: The Environmental Technician arrived at the monitoring station and performed his weekly verification of flow depths as measured by the staff gauge and the bubble meter. The staff gauge was showing a depth of 0.96 feet and the bubble meter was reading 0.26 feet. Per procedure, he then adjusted the bubble meter to match the staff gauge. After the adjustment, the bubble meter read 1,248 gpm as opposed to the ~200 gpm prior to adjustment. The staff gauge and bubble meter depths were previously compared on Tuesday, August 30, and no adjustment was necessary.
- Tuesday, September 6, 11:30: The technician checked the bubble meter against the staff gauge again. The bubble meter indicated a flow of ~1,200 gpm and the staff gauge indicated a flow rate of 1,400 gpm. The bubble meter was adjusted to match the staff gauge and the decision was made to replace the bubble meter with an identical instrument.

- Tuesday, September 6, 15:00: The bubble meter was replaced and set to match the depth of the staff gauge. The flow rate corresponding to the depth on the staff gauge was 1,100 gpm.
- Wednesday, September 7, 06:00: The technician arrived at the monitoring station and compared the staff gauge with the bubble meter. The staff gauge indicated a flow rate of 600 gpm and the bubble meter indicated ~1,400 gpm. The decision was made to return during daylight and investigate the problem further.
- Wednesday, September 7, 08:00: All equipment and hoses were closely inspected. A small break was discovered in the flexible bubble hose at the point where it joins the metal tubing that is permanently mounted to the side of the weir box. It is suspected this break occurred sometime during the 6-hour surcharge on September 5. Figure 1 is a depiction of the physical configuration of the monitoring station.
- Wednesday, September 7, 09:00: Repairs are complete and the bubble meter is providing correct readings as verified by subsequent checks throughout the day.

Schematic of SS6 Monitoring Station

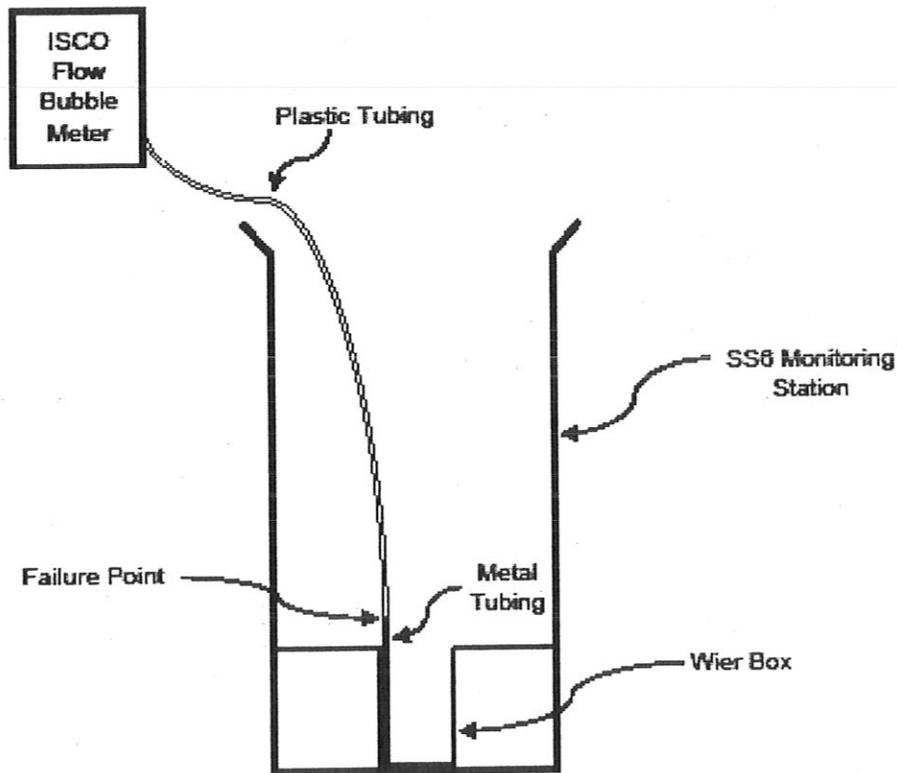


Figure 1

Due to the lack of confidence in the data gathered by the bubble meters, it is necessary to estimate the flow in the sewer system from 18:00, September 5, through 09:00, September 7, a period of 39 hours. This estimate was accomplished by taking the flow rates as measured by the staff gauge throughout this period and using a linear assumption between each data point. Table 1 indicates the flow rates corresponding to the depth on the staff gauge.

Day	Date	Time	Flow Rate (gallons per minute)
Tuesday	September 6	09:00	1,248
Tuesday	September 6	11:30	1,400
Tuesday	September 6	15:00	1,100
Wednesday	September 7	06:00	600
Wednesday	September 7	09:00	650

Table 1

The period of estimated flow began at 18:00 on Monday, September 5, when the bubble meter indicated the monitoring station came out of the surcharged condition. Hence there are parts of two days and one entire day for which flow must be estimated. Table 2 provides a breakdown of the actual and estimated flows and daily flow totals.

Date	Begin Time	End Time	Duration (hours)	Total Flow (gallons)	Flow Measurement
September 5	00:00	18:00	18	1,778,340	Actual
September 5	18:00	Midnight	6	1,235,880	Estimated
Total Daily Flow				3,014,220	
September 6	00:00	09:00	9	1,116,450	Estimated
September 6	09:00	11:30	2 ½	198,600	Estimated
September 6	11:30	15:00	3 ½	262,500	Estimated
September 6	15:00	Midnight	9	513,000	Estimated
Total Daily Flow				2,090,550	
September 7	00:00	06:00	6	252,000	Estimated
September 7	06:00	09:00	3	112,500	Estimated
September 7	09:00	Midnight	15	516,924	Actual
Total Daily Flow				881,424	

Table 2

Figure 2 contains a hydrograph of the actual and estimated periodic and total daily flows for these three days. Figure 3 is a graphical depiction of the rainfall received during this same 3-day period.

**Y-12 National Security Complex
September 5-7, 2011
Estimated Sanitary Sewer Hydrograph**

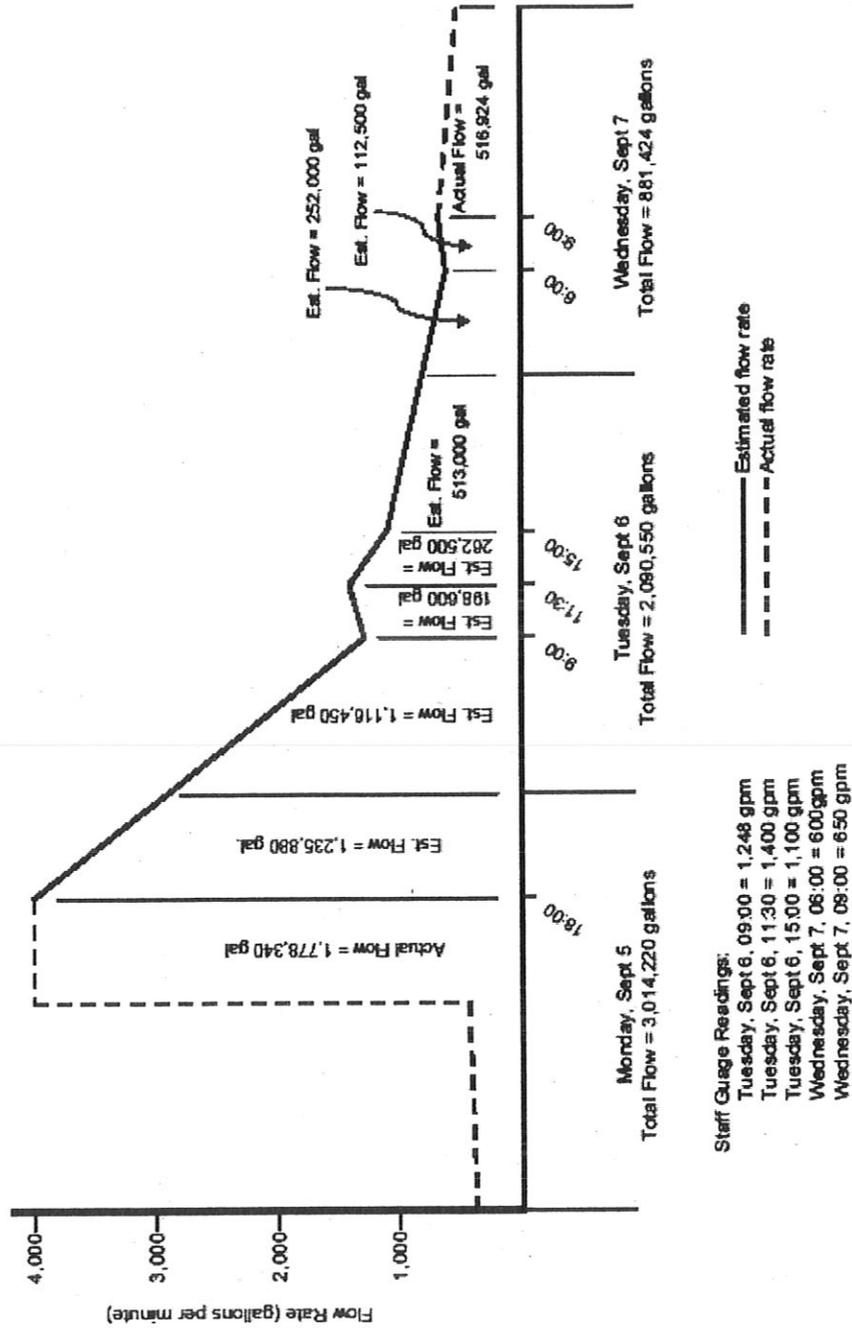
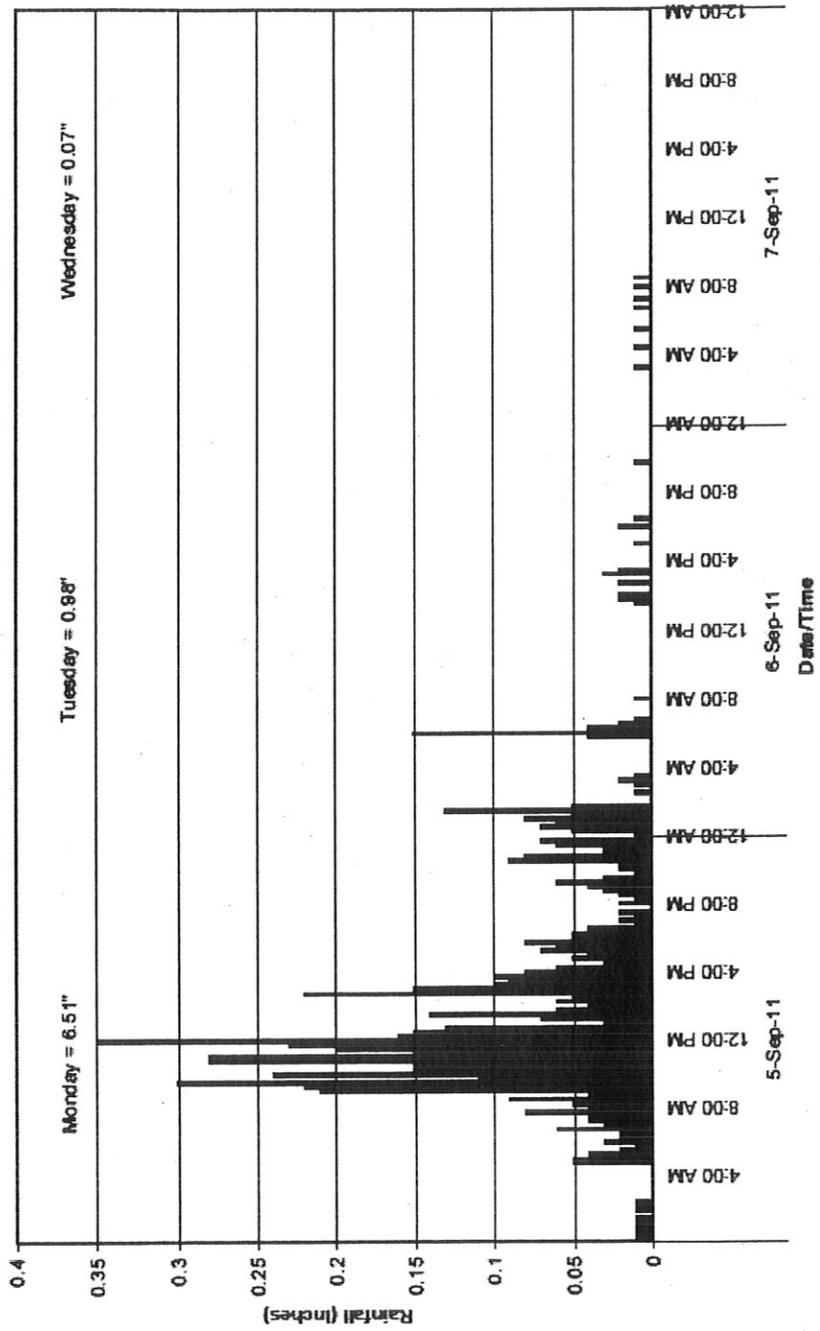


Figure 2

Y-12 Rainfall, September 5-7, 2011
Total = 7.56 inches
Tropical Storm "Lee"



The Y-12 Inflow and Infiltration program is continuing to make progress in identifying sources of storm water into the sanitary sewer system. A rain event of approximately 2.5 inches in February 2011 produced an exceedance of the permitted flow limit while a similar rain event in June 2011 resulted in flows which were approximately 500,000 gallons below the permitted limit. However, long duration and intense rain events continue to produce permit exceedances.

Enclosure 8
Letter, Reis to Glass
Dated: October 19, 2011

Letter Title

**Y-12 National Security Complex Sanitary Sewer Monitoring Data—Oak Ridge
Sewer Use Ordinance (Permit 1-91)—Third Quarter Calendar Year 2011**

Status of Y-12 National Security Complex Sanitary Sewer Inflow and Infiltration Program September 30, 2011

Background

The City of Oak Ridge (COR), Tennessee, issues the Y-12 National Security Complex (Y-12 Complex) a permit to discharge wastewater into the collection system for the COR Publicly Owned Treatment Work (POTW). As a condition of discharge to the COR POTW, the Y-12 Complex is limited to a maximum discharge of 1.4 million gallons per day. Over the last several years, this limit has been exceeded on occasion due to significant rain events. The increased flow in the Y-12 Complex sanitary sewer system during rain events occurs as a result of both surface inflow and underground infiltration (I&I) of storm water.

Actions Taken To Date

In an effort to identify the sources of I&I, a smoke testing program was implemented in spring 2010. An initial review of Y-12 Complex drawings resulted in approximately 80 manholes to smoke test throughout the 21.3 miles of underground sewer lines within the Y-12 Complex. During the field work phase, the specific manholes used to inject smoke were adjusted based on accessibility and system configuration.

The following is a summary of the corrective actions taken to date.

- Broken/missing cleanout caps replaced: 12
- Downspouts rerouted: 1
- Grated manhole cover replaced with solid cover: 3
- Openings plugged: 2
- Below-grade reroute of cross connection: 1
- Isolation of system from pad of demolished building: 1

Two of the clean-out cap locations were in low spots draining large areas which had the potential for significant inflow into the sanitary sewer system. The below-grade reroute of the cross connection took place near Building 9710-2 (Y-12 Fire Department). This was a significant repair since this location is at the bottom of a large grassy bank and the smoke test revealed the connection of several roof drains from Building 9710-2.

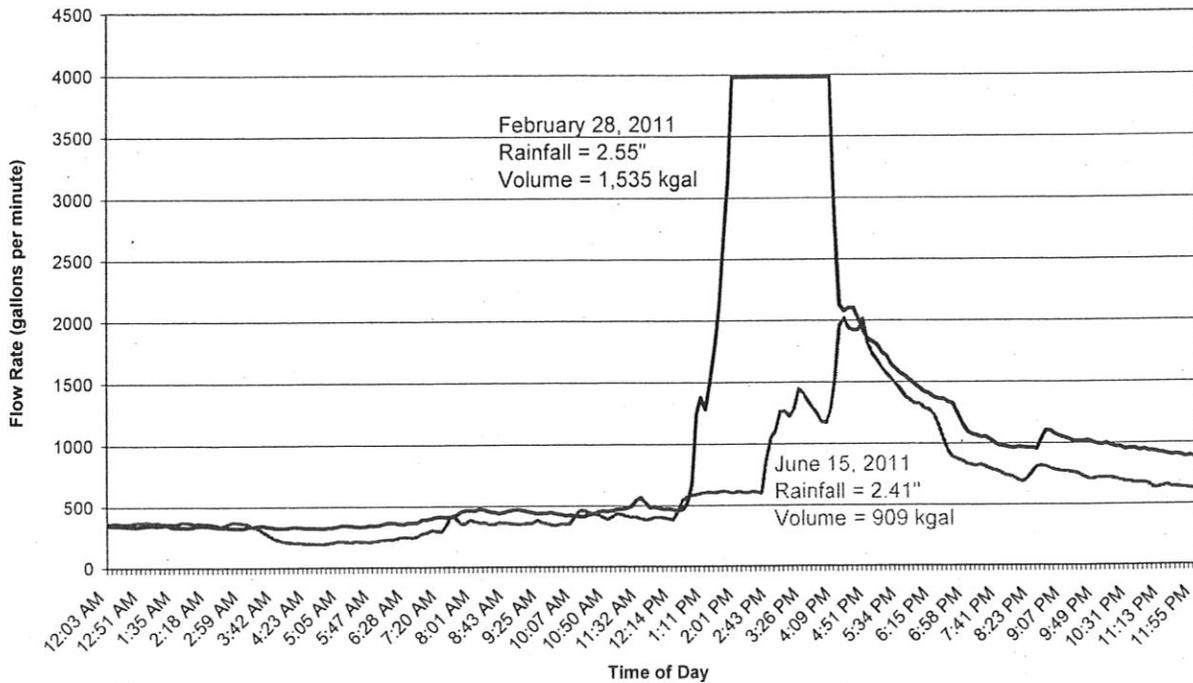
In addition to these I&I reduction measures, several actions were taken to decrease base flow in the Y-12 Complex system. These include:

- The identification of a significant discharge of cooling tower water into the sanitary sewer system. A valve was misaligned inside a building which resulted in cooling tower water being discharged to the sanitary sewer system. This condition was corrected upon discovery; the discharge is no longer occurring.
- Building 9401-3 (the former Y-12 Steam Plant) is no longer active. This facility discharged boiler blow down and other wastewaters to the Steam Plant Wastewater Treatment Facility (SPWTF) where solids were treated and pH adjustment was made prior to discharging to the sanitary sewer system. Building 9401-3 was a significant source of influent to SPWTF.
- Building 9404-18 (the former Demineralizer Facility) is no longer active. Like the former steam plant, this facility also sent wastewaters to the SPWTF for treatment.

Results

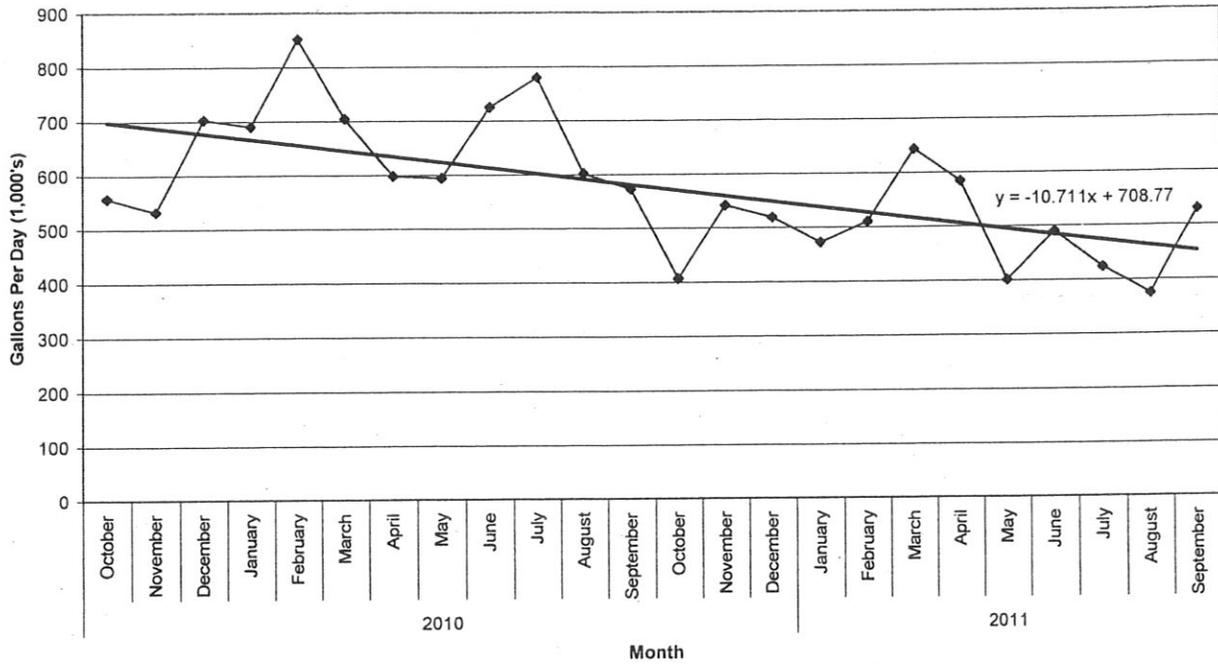
While it is impossible to determine the exact effect of any one repair, it is possible to compare the total sewer flow during two similar rain events. Figure 1 shows the hydrograph of the sanitary sewer during a February 28, 2011, rain event which occurred prior to the majority of repairs (blue line, 2.55 inches of rain). It also shows the hydrograph during a June 15 rain event (red line, 2.41 inches of rain). Each rain event was approximately 3 hours in duration and of similar intensity. The February 28 rain event resulted in a surcharge of the monitoring location for approximately 2 hours. The June 15 rain event did result in increased flow, however, the effect was not nearly as severe.

Figure 1
Y-12 Sanitary Sewer Flow Rates
February 28, 2011 vs. June 15, 2011



As discussed in the previous section, actions have been taken to reduce the base flow in the Y-12 Complex sanitary sewer system. These have had a positive impact on total flow, both during rain events and dry weather. Over the previous 18 months, the typical base flow in the Y-12 Complex sanitary sewer system has been reduced from in excess of 700,000 gallons per day to less than 500,000 gallons per day (as shown by the regression line on Figure 2). This is the combined result of the actions taken to date to reduce both I&I and base flow.

Figure 2
Y-12 Sanitary Sewer System
Average Daily Flow (1,000 gallons)



Planned Future Actions

While notable progress has been made in reducing I&I to the Y-12 sanitary sewer system, there are additional actions planned. These actions are as follows:

- Cap the old coal pile site and divert runoff to the storm drain system discharging into East Fork Poplar Creek. Runoff from this site is currently treated in the SPWTF prior to entering the sanitary sewer system. When this project is completed, all discharges to the sanitary sewer from the SPWTF will cease and this facility will become inactive. The project has begun and is currently scheduled for completion in early 2012.
- Recent smoke testing revealed several sources of inflow around the concrete pad that was once the Y-12 Complex garage. This source will be isolated from the sewer system by permanently plugging a nearby manhole.
- I&I at the Y-12 Complex has been reduced over the previous 18 months. However, as Figure 1 indicates, there are still sources of storm water entering the sanitary sewer. Additional investigation is planned via the following techniques:

- Four flow monitors have been installed within the Y-12 Complex sewer system to better pinpoint the sources of I&I. Five additional flow monitors are currently in the procurement process and expected to be delivered in early November 2011. These will be installed as received.
- Localized smoke testing will be conducted based on the results of the flow monitoring.
- In highly suspect areas, if practical, a video camera will be used to determine pipe conditions and possible cross connections.