PRELIMINARY ENGINEERING REPORT

FOR

TEMPORARY DIRECT POTABLE REUSE PROJECT

FOR

CITY OF WICHITA FALLS, TEXAS

May, 2013

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2012-257

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1.0 GENERAL

The City of Wichita Falls is located in the southeastern portion of Wichita County and has a current population of approximately 104,553. It is the largest city in a radius of about 125 miles, and is a part of the Region B Water Planning Group which is comprised of eleven counties including Archer, Baylor, Clay, Cottle, Foard, Hardeman, King, Montague, Wichita, Wilbarger and a portion of Young County.

The Wichita Falls system not only provides water to its own incorporated area, but it also provides water to fifteen other cities, water districts, and water supply corporations within Wichita, Archer and Clay counties and is the only wholesale water provider in Region B. Its service area provides water to a population of approximately 140,000 and accounts for approximately 65% of the entire Region B population and municipal water demands.

With the majority of the municipal demand being dependent on the City of Wichita Falls for the next 50 years, it is imperative that the City take immediate steps to evaluate and implement water management strategies to increase its water supply reliability.

2.0 EXISTING WATER SOURCES

The City of Wichita Falls owns and operates three lakes as their primary source of water, including Lake Kickapoo in Archer County, Lake Arrowhead in Clay County, and Lake Kemp/Diversion in Baylor County.

Lake Kickapoo was constructed in 1946 and developed as a municipal water supply with an initial storage capacity of 106,000 acre-feet. It is located on the North Fork of the Little Wichita River and the City has diversion rights from the lake of 40,000 acre-feet per year or approximately 35.7 million gallons per day (MGD). The top of spillway for Lake Kickapoo is at elevation 1045.0 MSL.

Lake Arrowhead was constructed in 1966 and was developed for municipal, industrial and recreational use with an initial storage capacity of 262,100 acre-feet. It is located on the Little Wichita River and the City has diversion rights from the lake of 45,000 acre-feet per year or approximately 40.2 MGD. However, the maximum diversion from both Lake Arrowhead and Lake Kickapoo cannot exceed 65,000 acre-feet per year (58 MGD). The top of spillway for Lake Arrowhead is at elevation 926.0 MSL.

Lake Kemp/Diversion was constructed in 1922 and was developed for municipal, industrial, irrigation, mining, and recreational use with an initial storage capacity of 318,000 acre-feet. Kemp/Diversion is jointly owned, maintained and operated by the City of Wichita Falls and Wichita County Improvement District No. 2. Diversion rights total 193,000 acre-feet per year (172.3 MGD) with only 25,150 acre-feet per year (22.5 MGD) available to the City of Wichita Falls for municipal use, 40,000 acre-feet per year (35.7 MGD) for industrial use, 120,000 acre-feet per year (107 MGD) for irrigation use, 2,000 acre-feet per year (1.8 MGD) for mining use, and 5,850 acre-feet per year (5.3

MGD) for recreational use. The top of spillway for Lake Kemp is at elevation 1144.0 MSL.

Based on the latest studies performed in the year 2000, the firm yield from the combination of Lake Kickapoo and Lake Arrowhead was determined to be 46,200 acre-feet per year (41.2 MGD) and the firm yield from Kemp/Diversion was determined to be 105,500 acre-feet per year of which only 25,150 acre-feet per year (22.5 MGD) is available for the City of Wichita Falls.

3.0 EXISTING WATER TREATMENT FACILITIES

The City owns and operates two separate water treatment plant site facilities with a total combined treatment capacity of 77.2 MGD. These facilities provide an excellent quality of finished potable water for the City of Wichita Falls and the surrounding service area.

The Jasper WTP is located generally on the east side of the city and includes two treatment trains commonly known as the 1951 treatment train and the 2005 treatment train. Raw surface water is received into the plant from the Secondary Reservoir which is fed from Lake Kickapoo and Lake Arrowhead. Settled water from the solids contact clarifier 1951 train is blended with the settled water from the solids contact clarifier 2005 train and flows through twelve multi-media filters into a weir box which feeds filtered water to two clearwells and a 5 MG ground storage tank, which all operate in parallel. The disinfection protocol includes chlorine dioxide in the raw water entering the plant and chloramines prior to the clarifiers and prior to the clearwells and ground storage tank. The rated treatment capacity of the Jasper Plant is 25.2 MGD.

The Cypress WTP is located in the southwest portion of the city and includes three conventional treatment trains operating in parallel, commonly known as the 1961 treatment train, the 1987 treatment train, and the 2010 treatment train. In addition this plant site has a microfiltration/reverse osmosis treatment train commonly known as the MF/RO Facility. Raw surface water is received into the conventional treatment trains from the Secondary Reservoir which is fed from Lake Kickapoo and Lake Arrowhead and raw surface water is received into the MF/RO Facility from Lake Kemp.

Settled water from the settling basins/solids contact clarifiers of the 1961, 1987, and 2010 trains flow through their separately designated multi-media filters into their respective clearwells and subsequently transferred into one or all of the ground storage facilities. The disinfection protocol for each train includes chlorine dioxide in the raw water entering the plant and chloramines prior to the settling basins/solids contact clarifiers prior to the clearwells and ground storage facilities. The rated treatment capacity of the 1961 train is 16 MGD, the 1987 train is rated at 16 MGD and the 2010 train is rated at 10 MGD.

Settled water from the solids contact clarifier of the MF/RO Facility is pumped through the MF/RO membrane racks and then is blended in the filtered water clearwells of the 1961 and/or 2010 treatment trains and subsequently transferred into one or all of the

ground storage facilities. The disinfection protocol includes chlorine dioxide in the raw water entering the plant from Lake Kemp and chloramines (as a biocide) prior to the MF Membranes and prior to 1961 and 2010 clearwells and ground storage facilities. The rated finished water treatment capacity of the MF/RO Facility is 10 MGD.

As required, the City of Wichita Falls monitors and test the water quality throughout the distribution system on an approved scheduled basis and included in Appendix A, are the test results of the distribution system water for the past five (5) years.

Furthermore, the City conducts scheduled distribution system monitoring and testing for trihalomethanes, haloacetic acids, asbestos, lead, and copper as described below:

- Trihalomethane/Haloacetic Acids: Wichita Falls had been on reduced monitoring according to the Stage 2 Disinfection Byproducts (DBP2) Rule 40/30 Waiver until the second quarter of 2012, when sampling for the Stage 3 Disinfection Byproducts (DBP3) Rule began. Under the reduced monitoring for the DBP2, only one distribution sample per plant (2 samples for Wichita Falls) was collected on a quarterly basis. Under the DBP3 sampling, four distribution sample sites per plant (8 samples for Wichita Falls) were collected. Samples collected on 03/26/2013 completed four quarters of DBP3 sampling the results for each site showed that the DBP3 was less than 40 ppb for trihalomethanes and 30 ppb for haloacetic acids calculated as a locational running annual average (LRAA).

- Asbestos: Wichita Falls is currently on a sample schedule of one asbestos sample every nine years. The current sampling schedule shows the sample to be collected between 01/01/2013 and 12/31/2021.

- Lead and Copper: Wichita Falls is currently on a sample schedule of fifty (50) samples every three years, with the next scheduled sample collection date being July, 2015.

4.0 EXISTING WASTEWATER TREATMENT FACILITIES

The City of Wichita Falls owns and operates the River Road Wastewater Treatment Plant (RRWWTP) which is authorized under TPDES Permit No. WQ0010509001 to treat and discharge treated effluent into the Wichita River in Segment No. 0214 of the Red River Basin. This permit was issued on December 2, 2010 and has an expiration date of midnight, December 2, 2015. In addition, the City is authorized under its Chapter 210 reclaim water Permit No. 10509-001 issued April 30, 2009, to utilize the treated effluent for Type I and Type II reclaim water uses.

The plant is located in the northeast portion of the City near the intersection of River Road and Rosewood Street, and consists of the following major treatment components:

- Bar Screens and Grit Removal
- Primary Clarifiers (3- 1,000,000 Gals. Ea.)

- Activated Sludge Basins (4- 1,150,000 Gals. Ea.)
- Secondary Clarifiers (4-1,000,000 Gals. Ea.)
- Chorine Contact Basins (2-228,250 Gals Ea.)
- De-Chlorination Facilities

Also as required, the City of Wichita Falls, through its Pre-Treatment Program, sets certain restrictions and limitations on all dischargers of non-residential wastewater to the City treatment facilities. This program provides for a better and more uniform quality of wastewater while also preventing potential pollutant interference with the biological treatment processes at the plant. In addition, the City in cooperation with the City/County Health Department is developing a pharmaceuticals "Take Back Program" in an attempt to reduce the flushing of pharmaceuticals into the collection and treatment system.

Included in Appendix B is a schematic flow diagram of the plant, a copy of the TPDES permit, a copy of the 210 Reclaim Water Authorization Permit and a copy of the City's Pre-Treatment Program.

The plant has a rated treatment capacity of 19.91 MGD with a peak two-hour flow not to exceed 30,458 GPM or 43.85 MGD and is authorized to discharge the treated effluent in accordance with the following effluent limitations:

Characteristic	**Daily Avg. mg/l (lbs/day)**	**7-Day Avg. mg/l**	**Daily Max. mg/l**	**Single Grab mg/l**
CBOD (5-Day)	10 (1,661)	15	25	35
TSS	15 (2,491)	25	40	60
Ammonia Nitrogen	3 (498)	5	7	15
E. coli, CFU/100 ml	126	N/A	394	N/A

In addition, the treated effluent must contain a chlorine residual of at least 1.0 mg/l after a 20 minute detention time (based on peak flow) and then is de-chlorinated to less than 0.1 mg/l prior to discharge. The pH of the discharged effluent will not be less than 6.0 nor greater than 9.0 standard units and will contain a minimum dissolved oxygen of 4.0 mg/l. Based on our review the most recent historical records and reports, the City has consistently maintained and operated this facility so as to discharge treated effluent well within the required effluent limitations of their permit.

5.0 IMPACT OF CURRENT DROUGHT CONDITIONS

From early March 2011 to the present, all areas within the Wichita Falls watersheds have been in Severe to Extreme Drought conditions and at times have moved into the Exceptional Drought condition category as determined and documented by the National Oceanic & Atmospheric Administration (NOAA). Furthermore based on the seasonal outlook for this area, NOAA is projecting the drought to persist or perhaps even intensify

through the end of June 2013, a 40% chance that the temperatures will be above normal and even chances that the precipitation will be below normal, normal or above normal.

The Wichita Falls area normally receives rainfall of approximately 29 inches per year, however, in 2011 this area only received 12.97 inches (a historical record) and in 2012 it only received 19.81 inches. This is extremely significant when you review precipitation records for the last 114 years as shown in Appendix C and determine that there have only been ten years that the area has received less than 20 inches of annual rainfall and never in the past 114 years has there been two consecutive years, as was the case in 2011 and 2012, where the rainfall totals were less than 20 inches per year.

In June 2010 all three lakes (Lake Arrowhead, Lake Kickapoo and Lake Kemp) were near full and the City's primary water sources appeared to be in excellent condition with regards to usable capacity. However, due to the lack of rainfall, extended period of above normal temperatures and above normal wind conditions, the lake levels began to sharply decline. (See Appendix C)

By August 8, 2011 Lake Arrowhead capacity was down to 60.5%, Lake Kickapoo was at 58%, Lake Kemp was at 49.8% and in compliance with their adopted Drought Contingency Plan the City of Wichita Falls declared a Stage 1- Drought Watch.

By July 2, 2012 Lake Arrowhead capacity was down to 50.7%, Lake Kickapoo was at 47.4%, Lake Kemp was at 38.4% and in compliance with their adopted Drought Contingency Plan the City of Wichita Falls declared a Stage 2- Drought Warning.

By February 4, 2013 Lake Arrowhead capacity was down to 39.9%, Lake Kickapoo was at 40.4%, Lake Kemp was at 25.8% and in compliance with their adopted Drought Contingency Plan the City of Wichita Falls declared a Stage 3- Drought Emergency.

Based on the current condition of the City's lakes, and assuming the drought persists as projected and with rainfall totals similar to 2011/2012 it is anticipated that lake capacities will likely decline to below 30% by August, 2013 which will require the City of Wichita Falls to declare a Stage 4-Drought Disaster.

Of even more concern, should the area precipitation be closer to the 2011 totals, it is likely all three lakes could be out of water by the latter part of 2014, which would pose a significant health risk for more 140,000 people that depend on the water supply from the three lakes.

6.0 DESCRIPTION OF PROPOSED PROJECT

Having considered numerous options to extend the useful life of the current water supply from the three lakes, it is proposed that the City develop and implement an emergency reuse project and a plan of action to temporarily utilize its treated wastewater effluent to augment their supply of raw water from Lake Arrowhead and Lake Kickapoo.

Under normal conditions, the City consistently discharges approximately 11 MGD of treated wastewater into the Wichita River. However, under the current drought conditions and water use restrictions, the discharge is averaging 8 MGD which is of a quality that could be blended with the raw surface water from Lake Arrowhead and Lake Kickapoo to provide for up to 5 MGD of additional water supply for the City. This appears to be the most viable option and one that could be implemented and facilities constructed and operational by the first quarter of 2014.

It is proposed to construct temporary skid mounted pumps at the RRWWTP and pump the high quality treated effluent through a temporary transmission line to the Cypress WTP for blending on a 50/50 basis with Lake Kickapoo and Lake Arrowhead raw surface water. The effluent would be treated through the Cypress MF/RO Facility prior to being blended with the lake water and subsequently the blended water would then be treated through the 2010 10 MGD conventional treatment plant prior to entering the distribution system.

7.0 PROPOSED REUSE CONVEYANCE FACILITIES

The proposed reuse conveyance facilities include two temporary skid mounted pumps to take the treated effluent directly from the RRWWTP chlorine contact basin and pump it through a 32" High Density Polyethylene Pipe (HDPE) to the Cypress WTP MF/RO Facility.

It is proposed to install a 400 HP electric motor driven primary lead pump and also a 400 HP diesel motor driven standby pump with each rated to pump a minimum of 8 MGD (5,556 GPM) at a discharge head of approximately 75 psi. The two pumps would be designed to operate in parallel and the standby pump would only be utilized if the primary lead pump failed. Pumps will be controlled by a variable frequency drive (VFD) so that a consistent and uniform rate of flow can be maintained into the Cypress WTP.

Approximately twelve miles (65,000 LF) of 32" HDPE will be temporarily installed above ground from the RRWWTP to the Cypress WTP. The first eight miles (43,000 LF) will be installed within the banks of an existing earthen channel known as Holliday Creek. This creek is a flood control channel with minimal annual flows and very limited aquatic life. Typically, large portions of the channel bed are dry with random/sporadic areas of shallow standing water after a large rain event. The remaining four miles (22,000 LF) will be installed generally within an existing concrete lined drainage channel and a portion of railroad right-of way and a portion of irrigation channel, until finally terminating at the Cypress WTP site. The effluent will enter the treatment process through an existing flow control vault structure located just prior to the Cypress MF/RO clarifier.

On April 5, 2013 detailed plans for the temporary pipeline and pump station were provided to TCEQ and by letter dated April 8, 2013 TCEQ approved for construction the proposed conveyance facilities as submitted.

Since the 12 miles of pipeline will be constructed above ground and may be susceptible to damage, the City has developed a "Pipeline Inspection and Emergency Response Plan" to provide a systematic way to inspect and make any required repairs to the line between the RRWWTP and the Cypress WTP. This Plan is included in Appendix D.

8.0 PROPOSED REUSE TREATMENT FACILITIES

In order to minimize the likelihood that reuse effluent microorganisms will pass through the treatment system and survive in the water supplied to the public, the City proposes to utilize a multi -barrier treatment approach as conceptually agreed to by TCEQ. The existing treatment facilities to be utilized and evaluated include disinfection within the 32" diameter conveyance pipeline, the MF/RO treatment train, and the 2010 conventional treatment plant. However, since the TCEQ does not have rules that contain minimum design, treatment, operating, maintenance, monitoring and reporting requirements for direct reuse sources or Direct Potable Reuse Water Treatment Plants (DPR WTPs), the City is requesting an exception to 30 TAC 290.41 (Water Sources) and 30 TAC 290.42 (Water Treatment). This exception request is included in Appendix E.

In addition, to comply with TAC 290.39(l) (Exceptions) the following detailed information and data is provided so as to demonstrate to the satisfaction of TCEQ that granting the requested exceptions will not compromise the public health or result in a degradation of service or water quality. Furthermore, the data is in direct response to their February 8, 2013 letter in which TCEQ provided comments and guidance to the City on their "Concept Paper for the Emergency Reuse of Wastewater Effluent as a Source for Direct Potable Reuse in Wichita Falls" (Concept Paper), which had been previously submitted to TCEQ on November 13, 2012. (See Appendix F)

Description of DPR Treatment Process and Compliance Standards: The RRWWTP effluent will be treated through the Cypress MF/RO facility in series with the Cypress WTP 2010 conventional treatment train. Chlorine will be added to the treated effluent at the RRWWTP and pumped through approximately12.3 miles of temporary HDPE pipe to the Cypress WTP. Major membrane train treatment components to be utilized at Cypress WTP include clarification, followed by MF/RO treatment. Subsequently, the treated effluent will be mixed with the conventional source water and then treated through the 2010 treatment train which includes pre-disinfection, coagulation, flocculation, clarification and granular filtration followed by post-disinfection. (See Appendix G)

In addition, the mixture ratio of reuse effluent to conventional lake source water will not exceed 50% and to further ensure that the public health is protected from certain microbial contaminants, the DPR WTP will be maintained and operated so to provide for 9-log removal of Viruses, 6-log removal of Gardia Cysts, and 5.5 log removal of Cryptosporidium Oocysts. Furthermore the DPR WTP finished water shall comply with primary and secondary public drinking water standards as set forth in TAC 290.104 and TAC 290.105 and these standards are included in Appendix G.

RRWWTP Effluent Quality: The RRWWTP produces an excellent quality of water which is well in compliance with the permitted TPDES discharge limits as required by TCEQ. In addition, based on our review of the effluent lab results data shown in Appendix H, the effluent meets the majority of primary and secondary drinking water standards with the exception of the following:

Primary Standards:	MCL's	Max. Measured	Avg. Measured
➢ Arsenic	0.010 mg/l	0.0167 mg/l	0.005 mg/l
➢ Nitrate	10.0 mg/l	21.77 mg/l	17.45 mg/l
➢ THM (Total)	0.060 mg/l	0.112 mg/l	0.069 mg/l

Secondary Standards:	MCL's	Max. Measured	Avg. Measured
➢ Aluminum	0.05-0.2 mg/l	1.06 mg/l	0.16 mg/l
➢ Chloride	300 mg/l	400 mg/l	276 mg/l
➢ Color	15 Units	18 Units	7.20 Units
➢ Fluoride	2.0 mg/l	2.64 mg/l	0.91 mg/l
➢ Iron	0.3 mg/l	1.2 mg/l	0.32 mg/l
➢ pH	$\geq$ 7.0	7.71	6.80
➢ TDS	1000 mg/l	1806 mg/l	816 mg/l

It is anticipated that all of the above constituents will be reduced well below the required MCL's following the DPR treatment process which will include the MF/RO train followed by conventional treatment through the 2010 plant.

RRWWTP Operating Procedures: The RRWWTP is a well maintained wastewater treatment plant which is manned 24 hours a day 7 days a week by experienced and highly qualified personnel. A listing of both wastewater and water plant personnel along with their qualifications is provided in Appendix I.

However, in the event that the wastewater treatment process cannot meet the quality needed by the Cypress WTP, the water treatment plant will have to be notified and the reuse water transfer will be immediately stopped. Though not an exhaustive list, the following are shut-down triggers for the RRWWTP:

- A high Dissolved Oxygen demand in two or more of the Aeration Basins requiring an increase of Air output greater than 40% (based on the last eight hours or flow and loading) for more than four hours to maintain the DO set point under normal flow conditions.
- Power failure in any part of the Process
- Petroleum detected in the Final Clarifiers.
- Solids Washout in the Final Clarifiers.

- Surfactant visible in the Aeration Basins or the Final Clarifiers. (This will be confirmed with a sample tested for foaming. If the foaming action cannot be replicated no action will be taken.)

- Unexplained high demand for Chlorine or loss of Demand that takes place in less than two hours.

- Chlorine failure. (This would be a failure in the Chlorine feed.)

- The Chlorine residual goes above a 2.5 mg/l residual and cannot be lowered.

- Artificially discolored water in the Headworks and Primaries. (This would be water that is artificially colored by something introduced to the system. Indicators would be Orange, Green, Blue, or sparkles in the water. Black water is acceptable because septic condition in the collection system does bring in black water.)

- Planned Maintenance

- Fish Kill (Two or more "indicator" goldfish suddenly die at the outfall.)

- Any indication that there is toxicity in the daily microscopic exam. (A microscopic exam will be done while water is being sent to purification and before the start up of sending water to purification. The exam is lined out in the Standard Operating Procedures and is also included in Appendix I.

MF/RO and 2010 Cypress WTP Operating Procedures: Both the MF/RO and the conventional 2010 Cypress WTP facilities are also well maintained and are manned 24 hour a day 7 days a week by experienced and highly qualified personal. As previously mentioned a listing of the water plant site personnel along with documentation of their qualifications is provided in Appendix I.

As added operational protection and enhanced monitoring and control of the treatment process, both the MF/RO and 2010 conventional plant currently have some continuous online monitoring instrumentation, and specifically for the temporary reuse project the City proposes to provide for additional instrumentation on the MF/RO and the conventional plant. The following is a listing of both existing and proposed online monitoring for each facility:

MF/RO Flow Control Vault Instrumentation:

- Existing Flow Meter
- Proposed pH Meter
- Proposed Available Free Ammonia
- Proposed Free Chlorine
- Proposed Monochloramines
- Proposed Total Chlorine

MF Trough Influent Instrumentation:

- Existing Turbidity Meter
- Existing Chlorine Residual
- Existing pH Meter
- Existing Temperature

MF Filtrate Instrumentation:

- Existing Turbidity Meter
- Existing Flow Meter
- Existing pH Meter
- Existing Chlorine Residual
- Existing Temperature
- Proposed Monochloramines
- Proposed Total Chlorine Residual
- Proposed Free Chlorine Residual
- Proposed Free Available Ammonia

RO Feed Instrumentation:

- Existing Flow Meter
- Existing pH Meter
- Existing ORP Meter
- Existing Conductivity Meter
- Proposed Turbidity

RO Permeate Instrumentation:

- Existing Flow Meter
- Existing pH Meter
- Proposed TDS Meter

RO Concentrate Instrumentation:

- Existing Flow Meter
- Existing Conductivity Meter

Washwater Return Pump Station Instrumentation:

- Existing Flow Meter

Secondary Reservoir Instrumentation:

- Proposed Turbidity Meter

2010 Parshall Flume Instrumentation:

- Existing Flow Meter
- Proposed Total Chlorine Residual
- Proposed Monochloramines
- Proposed Free Chlorine Residual
- Proposed Free Available Ammonia

2010 Filter Effluent (Filtrate) Instrumentation:

- Existing Turbidity Meter
- Existing Flow Meter
- Proposed Temperature
- Proposed pH Meter
- Proposed Free Available Chlorine
- Proposed Free Chlorine
- Proposed Monochloramines
- Proposed Chlorine Residual

2010 Clearwell Effluent Instrumentation:

- Existing Flow Meter
- Existing Chlorine Residual
- Existing Fluoride
- Existing Turbidity Meter
- Proposed Temperature
- Proposed pH Meter
- Proposed Monochloramines
- Proposed Free Chlorine Residual
- Proposed Free Available Ammonia
- Proposed Total Chlorine Residual

High Service Pump Station Instrumentation:

- Existing Flow Meter
- Existing Chlorine Residual

In addition to the online monitoring, the 2010 conventional treatment facility has filter to waste capabilities that are pre-programmed into the backwash sequence and operation of the existing plant filters that will continue to be utilized as part of the temporary reuse treatment facilities.

In the event that the MF/RO or 2010 treatment processes cannot meet the required water quality standards, the temporary reuse treatment facilities at the Cypress Site will be immediately stopped. Though not an exhaustive list, the following are shut-down triggers for the R/O and 2010 Conventional Treatment Facilities:

Violation of Primary Drinking Water Standard:

- A violation of any primary drinking water standard, measured at the POE.

Chlorine:

- CT failure (would be caused by low/no chlorine residuals in transmission line and throughout the plant)
- Systemic problems with chlorine residuals in the distribution system dropping below 1.5 ppm, collected at the distribution system bacteriological sample sites.
- Notify Supervisors if discharge chlorine residual drops below 3 ppm.

Turbidity:

- Tap turbidity is over 0.3 NTU.
- Notify Supervisors if tap turbidity is over 0.2 NTU during any hourly monitoring.
- Notify Supervisors if all IFE turbidity readings are over 0.3 NTU for 2 consecutive 15 minute intervals.

Micro-filtration:

- Any MF IFE turbidity over 0.15 NTU for 2 consecutive 10 minute readings, the cell is shut down.
- All MF IFE turbidity readings are over 0.15 NTU for 2 consecutive 10 minute readings, the MF plant will be shut down.

Reverse Osmosis:

- SDI over 3, water must by-pass the RO to brine pump station until SDI is below 3.
- ORP over 500, or any detectable chlorine residual, water must by-pass the RO to Brine Pump Station.

Nitrate:

- Nitrate of 10 ppm in the conventional plant POE will require a shutdown of reuse.
- Nitrate of 10 ppm in RO permeate will require shutdown of RO train.

Coliform:

- A repeat total coliform positive sample at distribution system bacteriological sample site.
- An *E. coli* sample positive at distribution system bacteriological sample site.

THM/HAA:

- THM/HAA samples of 80/60 ppb, respectively, or greater at maximum residence sample location in distribution system.
- THM/HAA samples of 40/30 ppb, respectively, or greater at POE.

Cryptosporidium/Giardia:

- Crypto/Giardia positive in RO permeate.

Identified Waterborne Pathogen Outbreak:

- Any identified waterborne pathogen outbreak, will be researched and communicated in conjunction with the Health Department and Water Quality Task Force.

Pipeline:

- A leak in the transmission line from WWTP to Cypress WTP that requires the line be dewatered for repair.

Power Outage:

- A power outage that causes shutdown of the MF/RO, the 2010 WTP or the chemical feed systems will also require shutdown of the transmission of water from the River Road WWTP to the Cypress WTP.

Source Water Disinfection Regime: The reuse source water and the conventional source water will have multiple disinfection application points throughout various portions of the treatment process as listed below.

Conventional Source Water From Lakes:

- ClO2 at Secondary Reservoir (1 Mile Pipeline Prior To Cypress WTP)
- Chloramines Prior to 2010 Plant Rapid Mix
- Chloramines Prior to 2010 Clearwell/Ground Storage

Reuse Source Water From RRWWTP:

- Chloramines 12.3 Mile Pipeline Prior to Cypress WTP
- Chloramines Prior to MF/RO Clarifier
- Chloramines Prior to MF Filtration

Anticipated Removal/Log Inactivation Through DPR WTP: To insure the public health is protected from certain microbial contaminants, calculations were performed to determine the removal credits that can be expected through the various treatment trains that make up the multiple barrier DPR WTP. These calculations as shown in Appendix J were based on the existing Surface Water Treatment Rules (SWTR) and previously approved CT studies in addition to other documentation from TCEQ (Letter Dated 4/30/12) that provides for approved removal credits. The following prepared tables show the calculated removal credits for each DPR treatment unit and for temperatures of 30 degrees centigrade and 7 degrees centigrade.

Viruses (Need 9 – Log Total)

Process	Agent	Temperature	Log Removal
Pipeline from RRWWTP	Monochloramine	30°C	5.8[1]
		7°C	1.4[1]
MF/RO Clarifier	Monochloramine	30°C	4.63[1]
		7°C	1.12[1]
Microfilters	Monochloramine	30°C	0.038[1]
		7°C	0.009[1]
Microfiltration	Physical Removal		2.0[2]
Reverse Osmosis	Physical Removal		0.0
Conventional Plant	Total Chlorine/CLO2	30°C	38.5[1]
		7°C	9.62[1]
Conventional Plant	Physical Removal		2.0[3]
	Total	**30°C**	**52.96**
	Total	**7°C**	**16.15**

1. Calculated using the TCEQ software for CT calculations.
2. Applied based on TCEQ Letter dated April 30, 2012 from Ada Lichaa
3. Applied based on demonstration of Turbidity levels in accordance with Surface Water Treatment Rule

Giardia (Need 6 – Log Total)

Process	Agent	Temperature	Log Removal
Pipeline from RRWWTP	Monochloramine	30°C	2.16[1]
		7°C	0.79[1]
MF/RO Clarifier	Monochloramine	30°C	1.72[1]
		7°C	0.63[1]
Microfilters	Monochloramine	30°C	0.014[1]
		7°C	0.005[1]
Microfiltration	Physical Removal		3.0[2]
Reverse Osmosis	Physical Removal		0.0
Conventional Plant	Total Chlorine/CLO2	30°C	15.24[1]
		7°C	6.7[1]
Conventional Plant	Physical Removal		2.5[3]
	Total	**30°C**	**24.63**
	Total	**7°C**	**13.62**

1. Calculated using the TCEQ software for CT calculations.
2. Applied based on TCEQ Letter dated April 30, 2012 from Ada Lichaa.
3. Applied based on demonstration of Turbidity levels in accordance with Surface Water Treatment Rule.

Cryptosporidium (Need 5.5 – Log Total)

Process	Agent	Temperature	Log Removal
Pipeline from RRWWTP	Monochloramine	30°C	0.0
		7°C	0.0
MF/RO Clarifier	Monochloramine	30°C	0.0
		7°C	0.0
Microfilters	Monochloramine	30°C	0.0
		7°C	0.0
Microfiltration	Physical Removal		2.0[1]
Reverse Osmosis	Physical Removal		0.0
Conventional Plant	Total Chlorine/CLO2	30°C	0.0
		7°C	0.0
Conventional Plant	Physical Removal		4.0[2]
	Total	**30°C**	**6.0**
	Total	**7°C**	**6.0**

1. Applied based on TCEQ Letter dated April 30, 2012 from Ada Lichaa.
2. Applied based on demonstration of Turbidity levels in accordance with LT2 Enhanced Surface Water Treatment Rule (3-log plus additional 1.0 log for IFE and CFE credits for turbidities below 0.15 NTU 95% of the month).

As shown in the above tables, the calculated removal credits are well above the needed minimum for Viruses, Giardia, and Cryptosporidium.

Furthermore, based on the results shown in the above tables, with the exception of Cryptosporidium and Viruses at 7 degrees centigrade, even with a loss of any one treatment barrier, the City could still meet the minimum log removal requirements needed for Giardia and Viruses.

9.0 DPR VERIFICATION TESTING

In accordance with the TCEQ letter of February 8, 2013, the City proposes to conduct full-scale verification testing of the DPR WTP at a finished water flow rate of 4 MGD for 30 continuous days in addition to another 15 days following a clean-in-place (CIP) procedure on the MF/RO units to verify that the CIP procedures were effective in flux recovery. The total verification testing period will be for 45 continuous days with the treatment facility continuously producing a water quality that meets or exceeds the requirements of 30 TAC 290 Subchapter F. During the 45 days, the City will need to utilize two M/F membrane filters, two R/O skid filters, and two granular filters so that each primary/lead filter can be taken out of service during the periodic backwash cycles. However, it is anticipated that the same two filters for each type of filtration would be utilized throughout the 45 day verification period.

As requested, the City has prepared a "Verification Testing Protocol" which has been included in Appendix K along with a schematic diagram showing the hydraulic detention times and sampling locations through the DPR WTP. In addition, the testing costs that will be incurred for this 45 day testing period is also shown in Appendix K, and totals to approximately $133,000.

Upon completion of the verification testing, the City will produce a Verification Testing Report (VTR) for TCEQ review and written approval prior to discharging treated water from the DPR WTP into the distribution system.

All water from the DPR WTP will be discharged into the Wichita River in accordance with the current waste discharge permit number WQ0004419000 issued on February 9, 2006 and included in Appendix N.

10.0 CUSTOMER AND PUBLIC NOTIFCATIONS

Both wholesale and retail water customers have been informed and notified by the City of Wichita Falls that they (City) intend to utilize treated effluent to supplement their source water supply. Documentation and description of this notification is provided below.

Wholesale Customers:

City staff and the consulting engineer held a meeting for wholesale customers on March 28, 2013 at 10:00 am at City Hall. The purpose of the meeting was to inform the customers of the City's impending Direct Potable Reuse Project.

The agenda, attendees, and the information distributed to the customers is provided in Appendix L. City staff gave a brief overview of the historical causes for the drought, discussed actions we had taken up to this point, and described for the customers the Indirect Potable Reuse (IPR) and Direct Potable Reuse (DPR) as defined by the TCEQ.

Staff then described in detail the City's DPR project, flow diagram, full scale testing protocol, and answered questions from the customers. All customers present were in support of the City DPR project.

Retail Customers:

The City's water reuse project has been promoted extensively through the following venues:

Local Television News Programs:
The NBC (KFDX-TV3), CBS (KAUZ-TV6) and ABC (KSWO TV7) television stations have covered the project several times during their morning, noon, 6pm and 10pm newscasts. These stations have also reported on the program on their websites and short promotional commercials.

Time Warner Cable Channel 11 (City Channel):
The project has been promoted and discussed many times on the City's PEG Channel (City Channel 11) during live and re-airing City Council meetings, press conferences, promotional commercials and a specific water reuse program called Downstream produced by the Water Reuse Association. This program is eight minutes long, airs several times a week and is linked to You Tube from the City's website. The potential reach of this channel is approximately 24,000 subscribers.

Local Radio Stations:
Local radio station 104.7 FM the Bear, Cumulous Broadcasting, has mentioned and discussed the program at length many times during the past three months. Newstalk 1290 AM, Town Square Media, has also discussed the program many times through their morning talk show and daily news updates. They have also included City staff during live programs to answer questions from the public and discuss the program.

Newspaper- Times Record News:
The Times Record News has covered the project extensively for several years reporting on statewide and local news and issues involving the State Legislature, Texas cities and the City of Wichita Falls. Just in 2013 they have published 20 stories covering the project in editorials, letters to the editor and news articles.

Facebook:
The program has been discussed many times on the City's Facebook page and continues to be brought up periodically. The City's page has 6535 likes with an average view of posts at 2300.

Twitter:
All items posted to the City's Facebook page are also "tweeted" to 336 Twitter followers

Public Meetings:
The project has been discussed with the public and City staff during City Council meetings, City Council Planning Workshop, the Mayor's Quarterly Public Forum, a special called meeting with the local media, Water Commission meetings, and in general as the public has inquired with City staff through emails, over the phone and in person.

Press Conferences:
To announce the need for the City to call a Stage 3 Drought Emergency the City held a press conference attended by the Mayor, City Manager, City staff and local media to discuss a wide range of issues including the water reuse project.

Press Releases:
The Public Information Office sends out press releases weekly. The water reuse project has only been mentioned specifically once, although, it is included in most general discussion under a general term of "water related issues or topics." Press releases are sent to 60 area media representatives. Posted on Facebook and Twitter and sent to just over 2400 citizens signed up to receive the releases by email through a module on the City's website called Notify Me.

Events:
The City has plans to have a booth at the upcoming Health Fair to discuss water issues and water reuse. The Mayor and staff have also addressed the issue with local clubs and organizations during luncheons and meetings.

In addition, a DPR Task Force has been created which is comprised of environmental professors, from Midwestern State University, as well as a team of doctors from the United Regional Health Care Hospital. On April 6, 2013 two medical doctors and two university professors from the task force toured both the Wastewater Treatment Plant and the Cypress Water Treatment Plant and were provided with the testing data, a project concept paper, and the TCEQ protocol for DPR projects. The medical doctors and professors that completed the tour were:

- Dr. Ahmed Mattar, MD who is a Family Practice physician and also serves a the local Health Authority and Director for Clinical Programs.

- Dr. Robert McBroom, Jr. MD who is a practicing physician and Board Certified in Internal Medicine and Infectious Diseases.

- Dr. Randal Hallford who is a professor of Physical Chemistry at Midwestern State University.

- Dr. Rebecca Dodge who is a professor of Geosciences at Midwestern State University.

Upon completion of the tours and review of the materials, staff and the task force discussed the various components of the project with favorable support from the medical doctors and the professors..

In addition, the project has been presented to the City/County Health Board as well as the Health Care Coalition and received unanimous support from both organizations.

11.0 PRO-ACTIVE HEALTH AND SAFETY INITIATIVES

The City of Wichita Falls-Wichita County Public Health District (Health District) has prepared a Disease Surveillance and Response Program which is included in Appendix M. The Health District Nursing Division is the lead unit in managing the jurisdiction's Disease Surveillance Program and works in close collaboration with the Public Health Emergency Preparedness (PHEP) Program. The reporting sources utilized and described in this program which include 1) Electronic Syndromic Disease Surveillance, 2) Health Care Provider Disease Reporting and 3) Web-based School Influenza Surveillance will assist the City of Wichita Falls in monitoring and providing early detection of any waterborne disease outbreak.

In addition, in 1997 a Water Quality Task Force (WQTF) was formed in Wichita Falls as a result of the highly publicized Cryptosporidiosis outbreak in Milwaukee (1993). The two Departments that are responsible for the Task Force are Public Works and the Health Department. They are the only two Departments that are allowed to Chair and Vice-Chair the Task Force. The primary positions that make up the WQTF are as follows:

Public Works Department:
Director of Public Works
Utilities Operations Manager
Water Source/Purification Superintendent
Wastewater Treatment Superintendent
Water Purification Laboratory Supervisor
Wastewater Treatment Laboratory Supervisor
Pollution Control Specialist

Health Department:
Director of Health
Assistant Director of Health
Nursing Administrator
Preventative Health Services Supervisor
Environmental Administrator

Public Health Preparedness
Laboratory Administrator
Environmental Inspections Supervisor

Other additional members may include personnel from the Fire Department, Public Information Office, and a representative from the City Managers' Office.
Regular meetings are held to discuss any issues pertaining to Public Health as it relates to water and/or wastewater and emergency meetings are declared if one of the triggers (from Health, Water or Wastewater) are activated. There have been several such emergency meetings, usually in response to a Health Department trigger, at which time all necessary data is collected from the plants to ensure that the problem was not originating from the drinking water. Also, testing support is provided to help confirm the origin of the problem and it should be noted that to date, we have never had the drinking water implicated in any event.

The WQTF is also tasked with providing supporting information to the City Council on Water Quality issues and development of outreach materials for the public on specific water/wastewater issues.

Water purification triggers for a WQTF meeting include the following:

- Violation of any State or Federal Drinking Water Rules. Those rules include, but are not limited, Primary Drinking Water Standards, Total Coliform Rule, Surface Water Treatment Rule, Stage 2 Disinfection/Disinfection By-Product Rule, and Lead/Copper Rule.

- Systemic loss of Total Chlorine Residuals at Bacteriological sampling points within the Distribution System.

- Accidental or Intentional contamination event within a Water Plant or the Distribution System.

Wastewater triggers for a WQTF meeting include the following:

- Raw Wastewater Quality indicating Escherichia coli (E.Coli) count cfu/l is greater than 10 fold of the 90 day mean and has ascended over seven days.

- Raw Wastewater Quality indicating Escherichia coli (E.Coli) count cfu/l is greater the 100 fold of the 90 day mean for 3 of the last four days.

- Raw Wastewater shows colored water and or material into the plant in quantities great enough to discolor all Primary treatment water and or causes staining of objects that come into contact with the water.

- Raw Wastewater shows artificially colored water and or material into the plant on a cyclical pattern after the sixth cycle.

- Raw Wastewater shows presence of petroleum products into the plant on a cyclical pattern after the sixth cycle.

- Any indication of a toxin causing the interruption of the biological process lasting longer than 72 hours and confirmed by laboratory testing and or microscopic exam.

- The presence of a surfactant either causing excessive foaming beyond the confines of the basins and or the dispersal of the biological floc.

- The presence of a surfactant either causing excessive foaming and or the dispersal of the biological floc on a cyclical pattern after the sixth cycle.

An Emergency WQTF meeting can be called by the Director of Health if there is an indication that a waterborne disease outbreak exists. For surveillance purposes, a waterborne disease outbreak is defined as an acute illness affecting two or more persons with similar symptoms epidemiologically associated with ingestion of water or other exposure to water intended for drinking.

Health Department triggers for an Emergency WQTF Meeting include the following:

- A healthcare provider or laboratory reports waterborne disease, and the resultant epidemiological investigation determine that the individual cases or group of illnesses originates, or are suspected of originating, from the municipal drinking water supply.

- The municipal drinking water supply is suspected to be the source of a waterborne illness because a cluster of cases is identified among people who drank from the same water source and who have similar dates of onset, and no alternative sources of infection have been identified.

- Electronic disease surveillance programs issues multiple alerts for an unusually high number (exceeding thresholds) of:

    - Gastrointestinal complaints;

    - Gastrointestinal complaints clustered in one area of the jurisdiction (e.g., one zip code);

    - Pharmacy sales of anti-diarrhea medications; and

    - Substantiation from hospital Infection Control Practitioners that a common illness or source is suspected or confirmed.

The decision to call for an Emergency WQTF meeting will be made by the Director of Health based on the above mentioned triggers, or any other verifiable factors that may indicate an outbreak of waterborne illness.

12.0 CYPRESS WTP TEMPORARY PIPING MODIFICATIONS

The City will be required to temporarily modify the site piping in order to accommodate the requirements of the DPR WTP. These proposed modifications are shown in Appendix N and generally include the following:

- 24" pipe laid above ground from the existing 36" R/O permeate line directly into the existing south lagoon to be utilized as the reuse storage lagoon. The existing 36" line to the existing clearwells will be temporarily cut and plugged so as not to allow the reuse water to flow to the clearwells.

- 12" pipe laid above ground from the 2010 transfer pumps to the existing 24" backwash line into the 2010 recovery well. This line will provide for the discharge of treated water to the recovery well and subsequently to the brine discharge line during the verification testing, so that no water goes into the distribution system.

- 24" pipe laid above ground from the 2010 lagoon valve vault to the existing 20" brine discharge line. This line will provide for the discharge of the treated DPR water during the verification testing, so that no water goes into the distribution system.

Also, included in Appendix N is a copy of the existing brine discharge permit from the Cypress WTP to the Wichita River.

13.0 UNREGULATED CONTAMINANTS

Typically, water quality is evaluated by comparing the measured concentration of a particular substance with the respective benchmark values based on drinking water standards (MCL's). However, there are many chemicals for which no regulated drinking water standard has been established. Based on their testing of numerous compounds, the City of Wichita Falls has detected forty-four (44) non regulated chemicals in their wastewater effluent. These include pharmaceuticals, personal care products, wastewater indicators, endocrine disrupters, household products, disinfection by-products and metals.

Included in Appendix O, is a listing and description of each one of the detected chemicals in addition to minimum, maximum, and average measured values. Also, as available, the acceptable daily intake (ADI) values for the various chemicals were shown.

Finally, it should be noted that there were twelve (12) of these unregulated chemicals that were also detected in either the raw surface water and/or the tap water.

14.0 POST DPR DISINFECTION PROCEDURES

The treatment of wastewater effluent through the MF/RO and Conventional Plants at the cypress site, enhances the risk of increased microbial loading through the treatment processes. Therefore, as the City converts back to its standard operation (100% Lake Water), the disinfection of certain components will be warranted.

It is the City's intent to utilize the following American Water Works Association (AWWA) Standards for the various disinfection process:

C651-05 Disinfection of Water Mains

C652-02 Disinfection of Water Storage Facilities

C653-03 Disinfection of Water Treatment Plants

MF/RO Treatment Facility:

Once the wastewater effluent line is removed from the flow control vault that supplies untreated water to the MF/RO Plant and the Lake Kemp line is restored, the City will begin its disinfection procedures for the MF/RO Plant.

- The MF/RO Clarifier will be drained (to the Brine Discharge Pump Station), washed out with fire hoses and the walls sprayed with a solution of 200 ppm chlorine. After the appropriate contact time, the clarifier will then be refilled with raw, untreated Lake Kemp water. Once the water level is at sufficient height, the chloramine biocide system will be restarted in the clarifier. Since this treatment component receives raw, untreated lake water, bacteriological tests will not be performed before it is placed into service.

- Each MF cell will be drained and cleaned out with a fire hose. Since there is no AWWA Standard for disinfecting membranes, the City will perform the manufacturer's recommended Clean-in-Place (CIP) procedure which utilizes acid solutions (down to a pH of 2) and chlorine solutions at 400 ppm. After the CIP is complete, the MF cells will be re-filled with water from the Break Tank and perform bacteriological tests for effectiveness of the cleaning procedure. If any cell fails the bacteriological testing, then the cleaning/testing procedure will be re-performed on that cell until a bacteriological test is successfully passed.

- The Break Tank will be drained to the Brine Pump Station, washed out with a fire hose and the tank disinfected with one of the approved methods found within C652-02. After the appropriate contact time, a bacteriological test will be performed on the tank for effectiveness of the disinfection process. If the Break Tank fails the bacteriological testing, then the cleaning/testing procedure will be re-performed until a bacteriological test is successfully passed.

- Each R/O skid will be drained and cleaned. Since there is no AWWA Standard for disinfecting membranes, the City will perform the manufacturers' recommended Clean-in-Place (CIP) procedure which utilizes acid solutions (down to 2 pH) and biocide solution. After the CIP is complete, the RO skids will be re-filled with water from the Break Tank and a bacteriological test performed for effectiveness of the cleaning procedure. If any skid fails the bacteriological testing, then the cleaning/testing procedure will again be performed on that skid until a bacteriological test is successfully passed.

- The two (2) Permeate Tanks will be drained to the Brine Pump Station, washed out with a fire hose and the tanks disinfected with one of the approved methods found within C652-02. After the appropriate contact time, a bacteriological test will be performed on the tanks to determine the effectiveness of the disinfection process. If any of the Permeate Tanks fail the bacteriological testing, then the cleaning/testing procedure will again be performed on that tank until a bacteriological test is successfully passed.

- Once the RO permeate line that discharges to the lagoon is disconnected from the permeate pipeline and the pipeline is reconnected to the 2010 Clearwell, both the permeate pipeline and 2010 Clearwell will be disinfected together, in accordance with C651-05 & C652-02, respectively. After the appropriate contact time, a bacteriological test will be performed on the pipeline and clearwell to test for effectiveness of the disinfection process. If either one fails the bacteriological testing, then the disinfection procedure will again be performed on both until a bacteriological test is successfully passed.

Conventional Treatment Plant Facility:

- All water within the lagoon system that contains any RO permeate that originated from treating wastewater effluent, will be completely treated through the conventional plant and replaced with 100% lake water.

- The 2010 Clarifier will be drained (to the Belt Press Holding Tanks), washed out with fire hoses and the walls sprayed with a solution of 200 ppm chlorine. After the appropriate contact time, the clarifier will then be refilled with raw, untreated lake water. The lake water will have chloramines added at the Splitter Box. Since this treatment component receives raw, untreated lake water, there will not be a bacteriological test performed before being placed back into service.

- The Recarbonation Basin will be drained (to the Belt Press Holding Tanks), washed out with fire hoses and the walls sprayed with a solution of 200 ppm chlorine. After the appropriate contact time, the Recarbonation Basin will then be refilled with chloraminated settled water from the Clarifier. Since this treatment component receives partially treated settled water, a bacteriological test will not be performed before it is placed back into service.

- Each 2010 Filter will be drained and cleaned out with a fire hose. The filter walls will be sprayed with a solution of 200 ppm chlorine. Then the filter media will be disinfected in accordance with C653-03. After the disinfection process is complete, each 2010 Filter will be re-filled with water from the ground storage tanks and a bacteriological test performed for effectiveness of the disinfection procedure. If any filter fails the bacteriological testing, then the cleaning/testing procedure will again be performed on that filter until a bacteriological test is successfully passed.

- The 2010 clearwell will be disinfected and tested in combination with the permeate discharge line and clearwell as described above.

- Any Ground Storage Tank that was utilized during the Emergency DPR will be drained to a holding lagoon and washed out with fire hoses and the tank disinfected with one of the approved methods found within C652-02. After the appropriate contact time, a bacteriological test will be performed for the effectiveness of the disinfection process. If the ground storage tank fails the bacteriological testing, then the cleaning/testing procedure will be re-performed until a bacteriological test is successfully passed.

15.0 PROJECT COSTS

Based on the required reuse conveyance and treatment facilities, the following project costs have been developed, which include, construction cost, removal cost of temporary facilities, engineering and contingency costs.

Mobilization & Insurance	LS @ $400,000	$ 400,000
32" HDPE Pipe (Materials Only)	65,000 LF @ $90	$ 5,850,000
32" 90 Degree Bend (Materials Only)	6 EA @ $5,000	$ 30,000
Unload All Pipe Delivers	65,000 LF @ $0.50	$ 32,500
Installation & Pipe Fusing	65,000 LF @ $40	$ 2,600,000
Installation & Fitting Fusing	6 EA @ $5,000	$ 30,000
Furnish & Install Pipe Tethers	65 EA @ $10,000	$ 650,000
Cypress WTP Control Vault Conn.	LS @ $75,000	$ 75,000
Skid Mounted Pumps at RRWWTP	LS @ $425,000	$ 425,000
Unload & Set Pumps	LS @ $5,000	$ 5,000
Construct RRWWTP Pump System	LS @ $100,000	$ 100,000
Manual Drain Valves	10 EA @ $5,000	$ 50,000
Manual Air Valves	5 EA @ $5,000	$ 25,000
Erosion Control Facilities	LS @ $35,000	$ 35,000
Sub-Total Off-Site Construction		**$ 10,307,500**

Cypress Site 24" Temp. Piping	LS @ $100,000	$ 100,000
Cypress Site 12" Temp. Piping	LS @ $50,000	$ 50,000
Cypress Site Conn. Piping	LS @ $125,000	$ 125,000
Sub-Total Cypress Site Construction		**$ 275,000**
Disassemble & Remove Temp. Facilities	LS @ $850,000	$ 850,000
Engineering & Design Services	LS @ $300,000	$ 300,000
Contingencies	LS @ $1,267,500	$ 1,267,500
Sub-Total Other Costs		**$ 2,417,500**
ESTIMATED TOTAL COSTS		**$ 13,000,000**

16.0 REPORT CLOSURE AND RECOMMENDATIONS

The City of Wichita Falls is entering its third year of an extended drought, which has depleted it source water reservoirs to below 40% of their storage capacity and requiring the City to declare a Stage 3-Drought Emergency. Furthermore, entering the hot summer months with such low reservoir capacities, make it very likely that the lakes will continue to decline and it is anticipated that the reservoir capacities could be at or below 30% by August 2013, at which time the City will declare a Stage 4-Drought Disaster.

Therefore, in an attempt to extend the useful life of the three water supply lakes, it is recommended that the City of Wichita Falls develop an aggressive action plan to utilize their wastewater effluent by diverting approximately 7.5 MGD of treated effluent from the RRWWTP and conveying it to the Cypress WTP MF/RO facility. At this location the effluent can be treated utilizing the latest membrane technology and then blending it with the Lake Arrowhead and Lake Kickapoo raw surface water sources prior to provided final treatment through the 2010 conventional treatment train at the Cypress WTP.

Finally, it is recommended that the City adopt the following implementation schedule and provide for the required funding of the proposed temporary water reuse project to augment the City's current surface water supply through this extended period of drought:

KEY TASKS	TASK COMPLETION DATE
Submit Prelim. Engr. Report & Plans For City Review	May 1, 2013
Submit Prelim. Engr. Report & Plans For TCEQ Approval	May 15, 2013
TCEQ Approval of Report & Plans	August 1, 2013

Contractor Award, Notice to Proceed & Order Pipe/Materials	August 15, 2013
Construction Completion	February 15, 2014
Full-Scale Verification Testing	April 1, 2014
Reuse System Fully Operational	April 15, 2014

APPENDIX A

Tap Water Data (5 Years)

TEXAS Department of State Health Services

Texas Department of State Health Services

LABORATORY SERVICES SECTION, MC-1947
CLIA #45D0660644

PO BOX 149347
AUSTIN, TEXAS 78714-9347
1-888-963-7111
www.dshs.state.tx.us

CONFIDENTIAL LABORATORY REPORT
*ALL MINERALS
Analysis Report

Submitter Identification Number: 2430001

CITY OF WICHITA FALLS
ATTN: AMY WILSON - WATER PURIFICAT
PO BOX 1431
WICHITA FALLS, TX 76307-1431

Date Reported: 02/19/2008
Report ID# : 20080219103817AA50211

Lab Sample ID# : AA50211
Sample Priority : Routine
TCEQ ID#(s) : 0843093

Water Source : Surface
Entry Point(s) : 002

Date Collected : 01/29/2008 10:44
Date Received : 01/30/2008

Analyte	Result	Unit	Method	Date Analyzed	Analyst
pH	**8.8**	S.U.	SM 4500-H B	01/30/2008	MD
Diluted Conductance	**375**	µS	SM 2510 B	02/06/2008	XY
Phenolphthalein Alkalinity as CaCO3	**2**	mg/L	SM 2320B	01/31/2008	MD
Total Alkalinity as CaCO3	**53**	mg/L	SM 2320B	01/31/2008	MD
Bicarbonate	**60**	mg/L	SM 2320B	01/31/2008	MD
Carbonate	**2**	mg/L	SM 2320B	01/31/2008	MD
Fluoride	**0.68**	mg/L	EPA 300.0	01/31/2008	AO
Chloride	**49**	mg/L	EPA 300.0	01/31/2008	AO
Sulfate	**35**	mg/L	EPA 300.0	01/31/2008	AO
Total Dissolved Solids	**196**	mg/L	SM 2540C	01/31/2008	XS
Nitrate as N	**0.07**	mg/L	EPA 353.2	01/30/2008	BF

Comments:

Approved By : LARCHER **Approval Date:** 02/13/2008

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TEXAS Department of State Health Services

PO BOX 149347
AUSTIN, TEXAS 78714-9347
1-888-963-7111
www.dshs.state.tx.us

Texas Department of State Health Services

LABORATORY SERVICES SECTION, MC-1947
CLIA #45D0660644

CONFIDENTIAL LABORATORY REPORT

Semivolatiles Organic Analysis Report

Submitter Identification Number: 2430001

CITY OF WICHITA FALLS
ATTN: AMY WILSON - WATER PURIFICAT
PO BOX 1431
WICHITA FALLS, TX 76307-1431

Date Reported: 02/04/2008
Report ID# : 20080204162156AA50284

Lab Sample ID# : AA50284
Sample Priority : Routine
TCEQ ID#(s) : 0843095

Water Source : Surface
Entry Point(s) : 002

Date Collected : 01/29/2008 10:43
Date Received : 01/30/2008

Regulated Compounds	Result	Qualifier
Alachlor	Not Analyzed	
Atrazine	Not Analyzed	
Benzo[a]pyrene	Not Analyzed	
alpha-Chlordane	Not Analyzed	
gamma-Chlordane	Not Analyzed	
trans-Nonachlor	Not Analyzed	
bis(2-Ethylhexyl)adipate	Not Analyzed	
bis(2-Ethylhexyl)phthalate	Not Analyzed	
ndrin	Not Analyzed	
Heptachlor	Not Analyzed	
Heptachlor epoxide	Not Analyzed	
Hexachlorobenzene	Not Analyzed	
Hexachlorocyclopentadiene	Not Analyzed	
Lindane	Not Analyzed	
Methoxychlor	Not Analyzed	
Pentachlorophenol	Not Analyzed	
Simazine	Not Analyzed	

Monitored Compounds	Result	Qualifier
Acenaphthene	Not Analyzed	
Acenaphthylene	Not Analyzed	
Aldrin	Not Analyzed	
Anthracene	Not Analyzed	
Benzo(a)anthracene	Not Analyzed	
Benzo[b]fluoranthene	Not Analyzed	
Benzo[g,h,i]perylene	Not Analyzed	
Benzo[k]fluoranthene	Not Analyzed	
Bromacil	Not Analyzed	
Butachlor	Not Analyzed	
Butylbenzylphthalate	Not Analyzed	
-Chlorobiphenyl	Not Analyzed	
Chrysene	Not Analyzed	
Dibenz[a,h]anthracene	Not Analyzed	
Di-n-butylphthalate	Not Analyzed	
2,3-Dichlorobiphenyl	Not Analyzed	

Monitored Compounds continued	Result	Qualifier
Dieldrin	Not Analyzed	
Diethylphthalate	Not Analyzed	
Dimethylphthalate	Not Analyzed	
Fluorene	Not Analyzed	
2,2',3,3',4,4',6-Heptachlorobiphenyl	Not Analyzed	
2,2',4,4',5,6'-Hexachlorobiphenyl	Not Analyzed	
Indeno[1,2,3-cd]pyrene	Not Analyzed	
Metolachlor	Not Analyzed	
Metribuzin	Not Analyzed	
Naphthalene	Not Analyzed	
2,2',3,3',4,5',6,6'-Octachlorobiphenyl	Not Analyzed	
2,2',3',4,6-Pentachlorobiphenyl	Not Analyzed	
Phenanthrene	Not Analyzed	
Prometon	Not Analyzed	
Propachlor	Not Analyzed	
Pyrene	Not Analyzed	
2,2',4,4'-Tetrachlorobiphenyl	Not Analyzed	
2,4,5-Trichlorobiphenyl	Not Analyzed	
Trifluralin	Not Analyzed	

Comments:

Unable to Complete Analysis: **LAB ERROR**
Sample not reported due to QC failures.

Approved By : CHOGBERG **Approval Date:** 02/01/2008

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TEXAS Department of State Health Services

Texas Department of State Health Services

LABORATORY SERVICES SECTION, MC-1947
CLIA #45D0660644

PO BOX 149347
AUSTIN, TEXAS 78714-9347
1-888-963-7111
www.dshs.state.tx.us

CONFIDENTIAL LABORATORY REPORT
Semivolatiles Organic
Analysis Report

Submitter Identification Number: 2430001

CITY OF WICHITA FALLS
ATTN: AMY WILSON - WATER PURIFICAT
PO BOX 1431
WICHITA FALLS, TX 76307-1431

Date Reported: 05/19/2008
Report ID# : 20080519083839AA58847

Lab Sample ID# : AA58847
Sample Priority : Routine
TCEQ ID#(s) : 0893232

Water Source : Surface
Entry Point(s) : 002

Date Collected : 04/29/2008 10:37
Date Received : 05/01/2008
Date Analyzed : 05/13/2008
Extraction Date : 05/12/2008

Conc. Units : µg/L
Method : 525.2
Analyst : DH

Regulated Compounds	Result	Qualifier
Alachlor	<0.22	
Atrazine	<0.22	
Benzo[a]pyrene	<0.22	
alpha-Chlordane	<0.22	
gamma-Chlordane	<0.22	
trans-Nonachlor	<0.22	
bis(2-Ethylhexyl)adipate	<2.2	
bis(2-Ethylhexyl)phthalate	<2.2	
Endrin	<0.22	
Heptachlor	<0.22	
Heptachlor epoxide	<0.22	
Hexachlorobenzene	<0.22	
Hexachlorocyclopentadiene	<1.1	*
Lindane	<0.22	
Methoxychlor	<0.22	
Pentachlorophenol	<1.1	
Simazine	<0.22	

Monitored Compounds	Result	Qualifier
Acenaphthene	<0.22	
Acenaphthylene	<0.22	
Aldrin	<0.22	
Anthracene	<0.22	
Benzo(a)anthracene	<0.22	
Benzo[b]fluoranthene	<0.22	
Benzo[g,h,i]perylene	<0.22	
Benzo[k]fluoranthene	<0.22	
Bromacil	<0.22	
Butachlor	<0.22	
Butylbenzylphthalate	<2.2	
Chlorobiphenyl	<0.22	
Chrysene	<0.22	
Dibenz[a,h]anthracene	<0.22	
Di-n-butylphthalate	<2.2	
2,3-Dichlorobiphenyl	<0.22	

Monitored Compounds continued	Result	Qualifier
Dieldrin	<0.22	
Diethylphthalate	<2.2	
Dimethylphthalate	<2.2	
Fluorene	<0.22	
2,2',3,3',4,4',6-Heptachlorobiphenyl	<0.54	
2,2',4,4',5,6'-Hexachlorobiphenyl	<0.22	
Indeno[1,2,3-cd]pyrene	<0.22	
Metolachlor	<0.22	
Metribuzin	<0.22	
Naphthalene	<0.22	
2,2',3,3',4,5',6,6'-Octachlorobiphenyl	<0.54	
2,2',3',4,6-Pentachlorobiphenyl	<0.22	
Phenanthrene	<0.22	
Prometon	<0.22	*
Propachlor	<0.22	
Pyrene	<0.22	
2,2',4,4'-Tetrachlorobiphenyl	<0.22	
2,4,5-Trichlorobiphenyl	<0.22	
Trifluralin	<0.22	

Comments:

* This analyte has known instability and/or method performance issues and quantitation should be considered approximate.

Approved By : CHOGBERG **Approval Date:** 05/15/2008

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TEXAS Department of State Health Services

Texas Department of State Health Services

LABORATORY SERVICES SECTION, MC-1947
CLIA #45D0660644

PO BOX 149347
AUSTIN, TEXAS 78714-9347
1-888-963-7111
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Volatile Organic Compounds by GC/MS
Analysis Report

Submitter Identification Number: 2430001

CITY OF WICHITA FALLS
ATTN: AMY WILSON - WATER PURIFICAT
PO BOX 1431
WICHITA FALLS, TX 76307-1431

Date Reported : 08/14/2008
Report ID# : 20080814084034AA69739

Lab Sample ID# : AA69739
Sample Priority : Quarterly
TCEQ ID#(s) : 0843096

Water Source : Surface
Entry Point(s) : 002

Date Collected : 07/29/2008 09:59
Date Received : 07/31/2008
Date Analyzed : 08/04/2008

Conc. Units : µg/L
Method : EPA 524.2
Analyst : MK

Regulated Cmpds.[40 CFR 141.61(a)]	Result	Qualifier
Benzene	<0.5	
Carbon tetrachloride	<0.5	
Chlorobenzene	<0.5	
1,2-Dichlorobenzene	<0.5	
1,4-Dichlorobenzene	<0.5	
1,2-Dichloroethane	<0.5	
1,1-Dichloroethene	<0.5	
cis-1,2-Dichloroethene	<0.5	
trans-1,2-Dichloroethene	<0.5	
1,2-Dichloropropane	<0.5	
Methylene chloride (DCM)	<0.5	
hylbenzene	<0.5	
ne	<0.5	
achloroethene	<0.5	
Toluene	<0.5	
1,2,4-Trichlorobenzene	<0.5	
1,1,1-Trichloroethane	<0.5	
1,1,2-Trichloroethane	<0.5	
Trichloroethene	<0.5	
Vinyl chloride	<0.5	
m&p-Xylene	<1.0	
o-Xylene	<0.5	

Monitored Cmpds.[40 CFR 141.40(e)]	Result	Qualifier
Chloroform	**5.7**	
Bromodichloromethane	**6.5**	
Dibromochloromethane	**6.7**	
Bromoform	**1.3**	
Dibromomethane	<1.0	
1,3-Dichlorobenzene	<1.0	
1,1-Dichloropropene	<1.0	
1,1-Dichloroethane	<1.0	
1,1,2,2-Tetrachloroethane	<1.0	
1,3-Dichloropropane	<1.0	
Chloromethane	<2.0	
Bromomethane	<2.0	
1,2,3-Trichloropropane	<1.0	
1,1,1,2-Tetrachloroethane	<1.0	
Chloroethane	<2.0	
Dichloropropane	<1.0	
orotoluene	<1.0	
4-Chlorotoluene	<1.0	
Bromobenzene	<1.0	
cis-1,3-Dichloropropene	<1.0	
trans-1,3-Dichloropropene	<1.0	

Screened Compounds *	Result	Qualifier
1,2-Dibromo-3-chloropropane	<1.0	
1,2-Dibromoethane	<1.0	

Monitored Cmpds.[40 CFR 141.40(j)]	Result	Qualifier
1,2,4-Trimethylbenzene	<1.0	
1,2,3-Trichlorobenzene	<1.0	
n-Propylbenzene	<1.0	
n-Butylbenzene	<1.0	
Naphthalene	<1.0	
Hexachlorobutadiene	<1.0	
1,3,5-Trimethylbenzene	<1.0	
4-Isopropyltoluene	<1.0	
Isopropylbenzene	<1.0	
t-Butylbenzene	<1.0	
s-Butylbenzene	<1.0	
Trichlorofluoromethane	<2.0	
Dichlorodifluoromethane	<2.0	
Bromochloromethane	<1.0	

Other Compounds	Result	Qualifier
Acetone	<10	
Acrylonitrile	<10	
2-Butanone (MEK)	<10	
Carbon disulfide	<1.0	
Ethyl methacrylate	<1.0	
2-Hexanone	<1.0	
Iodomethane	<2.0	
Methyl methacrylate	<1.0	
4-Methyl-2-pentanone (MIBK)	<2.0	
Methyl-t-butyl ether (MTBE)	<2.0	
Tetrahydrofuran	<5.0	
Vinyl acetate	<10	

Tentatively Identified Compounds	Result	Qualifier
Isoproply alcohol	**2.7**	

Tentative identification of the largest non-target peaks is provided by comparison with the EPA/NIH mass spectral library. Approximate quantitation is performed using internal standards and an assumed response factor of one.

Comments:

* Screened Compounds : Method 524.2 is not an approved method for these compounds.

Approved By : GNESBITT **Approval Date:** 08/12/2008

Final Analysis Report

CRA Environmental Laboratory Services

Date: *19-Feb-09*

CLIENT: CITY OF WICHITA FALLS
Client Sample ID: 002
Lab ID: 0901296-001
Project: WS 2430001 UCMR2
Collection Date: 1/13/2009 2:39:00 PM
Matrix: DRINKING WATER
TCEQ Sample ID: 0940767

Analyses	Result	Qual	MCL	PQL	Units	DF	BatchID	Date Analyzed
FLAME RETARDANTS IN DRINKING WATER				**E527**		**(E527)**		Analyst: **CO**
Dimethoate	ND	A	0	0.71	µg/L	1	61811	1/24/2009 2:54:00 AM
Terbufos Sulfone	ND	A	0	0.41	µg/L	1	61811	1/24/2009 2:54:00 AM
2,2',4,4'-Tetrabromodiphenyl ether (BDE-47)	ND	A	0	0.30	µg/L	1	61811	1/24/2009 2:54:00 AM
2,2',4,4',6-Pentabromodiphenyl ether (BDE-100)	ND	A	0	0.51	µg/L	1	61811	1/24/2009 2:54:00 AM
2,2',4,4',5-Pentabromodiphenyl ether (BDE-99)	ND	A	0	0.91	µg/L	1	61811	1/24/2009 2:54:00 AM
2,2',4,4',5,5'-Hexabromobiphenyl (BDE-153)	ND	A	0	0.71	µg/L	1	61811	1/24/2009 2:54:00 AM
2,2',4,4',5,5'-Hexabromodiphenyl ether (HBB-245)	ND	A	0	0.81	µg/L	1	61811	1/24/2009 2:54:00 AM
Surr: 1,3-Dimethyl-2-nitrobenzene	74.0		0	70-130	%REC	1	61811	1/24/2009 2:54:00 AM
Surr: Triphenyl Phosphate	76.4		0	70-130	%REC	1	61811	1/24/2009 2:54:00 AM
Surr: Perylene-d12	73.6		0	70-130	%REC	1	61811	1/24/2009 2:54:00 AM

Qualifiers:

* or X	Value exceeds Maximum Contaminant Level	A	Not Available for Accreditation
B	Analyte Detected in Method Blank	E	Value Above Quantitation Range
H	Holding Time Exceeded	J	Analyte Detected Below Quantitation Limits
N	Not Accredited	ND	Not Detected at the Reporting Limit
S	Spike Recovery Outside Recovery Limits		

LCRA Environmental Laboratory Services

Date: *04-Feb-09*

CLIENT: CITY OF WICHITA FALLS
Client Sample ID: 002
Lab ID: 0901306-002
Project: WS 2430001
Collection Date: 1/13/2009 2:11:00 PM
Matrix: DRINKING WATER
TCEQ Sample ID: 0940761

Analyses	Result	Qual	MCL	PQL	Units	DF	BatchID	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY				**E300.0**				Analyst: **WR**
Chloride	67.5		300	5.00	mg/L	5	61607	1/16/2009 12:19:00 PM
Fluoride	0.97		4	0.05	mg/L	5	61607	1/16/2009 12:19:00 PM
Nitrogen, Nitrate (As N)	0.06		10	0.05	mg/L	5	61607	1/16/2009 12:19:00 PM
Sulfate	36.3		300	5.00	mg/L	5	61607	1/16/2009 12:19:00 PM
ALKALINITY				**SM2320 B**				Analyst: **JB**
Alkalinity, Bicarbonate (As CaCO3)	83	A		2	mg/L CaCO3	1	61639	1/20/2009
Alkalinity, Carbonate (As CaCO3)	ND	A		2	mg/L CaCO3	1	61639	1/20/2009
Alkalinity, Hydroxide (As CaCO3)	ND	A		2	mg/L CaCO3	1	61639	1/20/2009
Alkalinity, Phenolphthalein	ND	A		2	mg/L CaCO3	1	61639	1/20/2009
Alkalinity, Total (As CaCO3)	83	A		2	mg/L CaCO3	1	61639	1/20/2009
CONDUCTANCE				**SM2510B**				Analyst: **KK**
Specific Conductance @ 25°C	508			0	µmhos/cm	1	61658	1/21/2009
PH				**SM4500-H+-B**				Analyst: **KK**
pH @ 25°C [for information only]	8.9	A	8.5	0	pH Units	1	61594	1/16/2009
TOTAL DISSOLVED SOLIDS				**SM2540C**				Analyst: **ZP**
Total Dissolved Solids	280		1000	25	mg/L	10	61577	1/16/2009

Qualifiers:

* or X	Value exceeds Maximum Contaminant Level	A	Not Available for Accreditation
B	Analyte Detected in Method Blank	E	Value Above Quantitation Range
H	Holding Time Exceeded	J	Analyte Detected Below Quantitation Limits
N	Not Accredited	ND	Not Detected at the Reporting Limit
S	Spike Recovery Outside Recovery Limits		

LCRA Environmental Laboratory Services

Date: *19-Feb-09*

CLIENT:	CITY OF WICHITA FALLS	**Client Sample ID:**	002
ab ID:	0901296-003		
Project:	WS 2430001 UCMR2	**Collection Date:**	1/13/2009 2:12:00 PM
Matrix:	DRINKING WATER	**TCEQ Sample ID:**	0940754

Analyses	Result	Qual	MCL	PQL	Units	DF	BatchID	Date Analyzed
EXPLOSIVES IN DRINKING WATER				**E529**		**(E529)**		Analyst: **CO**
1,3-Dinitrobenzene	ND	A	0	0.83	µg/L	1	61757	1/23/2009 7:52:00 AM
Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	ND	A	0	1.04	µg/L	1	61757	1/23/2009 7:52:00 AM
2,4,6-Trinitrotoluene (TNT)	ND	A	0	0.83	µg/L	1	61757	1/23/2009 7:52:00 AM
Surr: 1,2,4-trimethyl-5-nitrobenzene	121		0	70-130	%REC	1	61757	1/23/2009 7:52:00 AM
Surr: 1,3,5-trimethyl-2-nitrobenzene	122		0	70-130	%REC	1	61757	1/23/2009 7:52:00 AM
Surr: Nitrobenzene-d5	116		0	70-130	%REC	1	61757	1/23/2009 7:52:00 AM

Qualifiers:

* or X	Value exceeds Maximum Contaminant Level	A	Not Available for Accreditation
B	Analyte Detected in Method Blank	E	Value Above Quantitation Range
H	Holding Time Exceeded	J	Analyte Detected Below Quantitation Limits
N	Not Accredited	ND	Not Detected at the Reporting Limit
S	Spike Recovery Outside Recovery Limits		

LCRA Environmental Laboratory Services

Date: *04-Feb-09*

CLIENT: CITY OF WICHITA FALLS
Client Sample ID: 002
Lab ID: 0901306-004
Project: WS 2430001
Collection Date: 1/13/2009 2:10:00 PM
Matrix: DRINKING WATER
TCEQ Sample ID: 0940770

Analyses	Result	Qual	MCL	PQL	Units	DF	BatchID	Date Analyzed
CHLORINATED PESTICIDES				**E508.1**		**(E508)**		Analyst: **BR**
Aroclor 1016	ND		0.5	0.28	µg/L	1	61672	1/21/2009 11:06:45 PM
Aroclor 1221	ND		0.5	0.28	µg/L	1	61672	1/21/2009 11:06:45 PM
Aroclor 1232	ND		0.5	0.28	µg/L	1	61672	1/21/2009 11:06:45 PM
Aroclor 1242	ND		0.5	0.28	µg/L	1	61672	1/21/2009 11:06:45 PM
Aroclor 1248	ND		0.5	0.28	µg/L	1	61672	1/21/2009 11:06:45 PM
Aroclor 1254	ND		0.5	0.28	µg/L	1	61672	1/21/2009 11:06:45 PM
Aroclor 1260	ND		0.5	0.28	µg/L	1	61700	1/22/2009 6:48:47 PM
Toxaphene	ND		3	0.55	µg/L	1	61672	1/21/2009 11:06:45 PM
ORGANIC COMPOUNDS				**E525.2**		**(E525.2)**		Analyst: **BR**
Alachlor	ND		2	0.11	µg/L	1	61634	1/20/2009 9:41:00 PM
Aldrin	ND	A		0.11	µg/L	1	61634	1/20/2009 9:41:00 PM
Atrazine	ND		3	0.11	µg/L	1	61634	1/20/2009 9:41:00 PM
Bromacil	ND	A		0.22	µg/L	1	61634	1/20/2009 9:41:00 PM
Butachlor	ND	A		0.11	µg/L	1	61634	1/20/2009 9:41:00 PM
alpha-Chlordane	ND	A	2	0.11	µg/L	1	61634	1/20/2009 9:41:00 PM
gamma-Chlordane	ND	A	2	0.11	µg/L	1	61634	1/20/2009 9:41:00 PM
trans-Nonachlor	ND	A		0.11	µg/L	1	61634	1/20/2009 9:41:00 PM
Dieldrin	ND	A		0.11	µg/L	1	61634	1/20/2009 9:41:00 PM
Endrin	ND		2	0.11	µg/L	1	61634	1/20/2009 9:41:00 PM
Heptachlor	ND		0.4	0.11	µg/L	1	61634	1/20/2009 9:41:00 PM
Heptachlor epoxide	ND		0.2	0.11	µg/L	1	61634	1/20/2009 9:41:00 PM
Hexachlorobenzene	ND		1	0.11	µg/L	1	61634	1/20/2009 9:41:00 PM
Hexachlorocyclopentadiene	ND		50	0.11	µg/L	1	61634	1/20/2009 9:41:00 PM
gamma-BHC	ND		0.2	0.11	µg/L	1	61634	1/20/2009 9:41:00 PM
Methoxychlor	ND		40	0.11	µg/L	1	61634	1/20/2009 9:41:00 PM
Metolachlor	ND	A	40	0.11	µg/L	1	61634	1/20/2009 9:41:00 PM
Metribuzin	ND	A		0.11	µg/L	1	61634	1/20/2009 9:41:00 PM
Pentachlorophenol	ND		1	1.11	µg/L	1	61634	1/20/2009 9:41:00 PM
Propachlor	ND	A		0.11	µg/L	1	61634	1/20/2009 9:41:00 PM
Simazine	ND		4	0.11	µg/L	1	61634	1/20/2009 9:41:00 PM
Benzo(a)pyrene	ND		0.2	0.11	µg/L	1	61634	1/20/2009 9:41:00 PM
bis(2-Ethylhexyl)adipate	ND		400	2.22	µg/L	1	61634	1/20/2009 9:41:00 PM
Bis(2-ethylhexyl)phthalate	ND		6	2.22	µg/L	1	61634	1/20/2009 9:41:00 PM
TIC: 4,4'-dibromo-1,1'-Biphenyl	0.64		0	0	µg/L	1	61634	1/20/2009 9:41:00 PM
TIC: Hexadecanoic acid	1.63		0	0	µg/L	1	61634	1/20/2009 9:41:00 PM
TIC: Octadecanoic acid	0.93		0	0	µg/L	1	61634	1/20/2009 9:41:00 PM
TIC: Tetradecanoic acid	0.70		0	0	µg/L	1	61634	1/20/2009 9:41:00 PM

Qualifiers:

* or X	Value exceeds Maximum Contaminant Level
B	Analyte Detected in Method Blank
H	Holding Time Exceeded
N	Not Accredited
S	Spike Recovery Outside Recovery Limits
A	Not Available for Accreditation
E	Value Above Quantitation Range
J	Analyte Detected Below Quantitation Limits
ND	Not Detected at the Reporting Limit

LCRA Environmental Laboratory Services

Date: *19-Feb-09*

CLIENT: CITY OF WICHITA FALLS
Client Sample ID: 002
Lab ID: 0901296-005
Project: WS 2430001 UCMR2
Collection Date: 1/13/2009 2:19:00 PM
Matrix: DRINKING WATER
TCEQ Sample ID: 0940750

Analyses	Result	Qual	MCL	PQL	Units	DF	BatchID	Date Analyzed
HERBICIDE DEGRADATES IN DRINKING WATER				**E535**		**(E535)**		Analyst: **SB**
Acetochlor ESA	UNSAT	A	0	1.0	µg/L	1	62072	2/4/2009
Acetochlor OA	UNSAT	A	0	2.1	µg/L	1	62072	2/4/2009
Alachlor ESA	UNSAT	A	0	1.0	µg/L	1	62072	2/4/2009
Alachlor OA	UNSAT	A	0	2.1	µg/L	1	62072	2/4/2009
Metolachlor ESA	UNSAT	A	0	1.0	µg/L	1	62072	2/4/2009
Metolachlor OA	UNSAT	A	0	2.1	µg/L	1	62072	2/4/2009
Surr: Dimethachlor ESA	0	S	0	70-130	%REC	1	62072	2/4/2009

Qualifiers:

- * or X Value exceeds Maximum Contaminant Level
- B Analyte Detected in Method Blank
- H Holding Time Exceeded
- N Not Accredited
- S Spike Recovery Outside Recovery Limits
- A Not Available for Accreditation
- E Value Above Quantitation Range
- J Analyte Detected Below Quantitation Limits
- ND Not Detected at the Reporting Limit

LCRA Environmental Laboratory Services

Date: *19-Feb-09*

CLIENT: CITY OF WICHITA FALLS
Client Sample ID: 002
Lab ID: 0901296-009
Project: WS 2430001 UCMR2
Collection Date: 1/13/2009 2:50:00 PM
Matrix: DRINKING WATER
TCEQ Sample ID: 0940763

Analyses	Result	Qual	MCL	PQL	Units	DF	BatchID	Date Analyzed
NITROSOAMINES IN DRINKING WATER				**E521**		**(E521)**		Analyst: **KRD**
N-Nitrosodiethylamine (NDEA)	ND	A	0	0.0054	µg/L	1	62354	2/17/2009 2:05:43 AM
N-Nitrosodimethylamine (NDMA)	0.0043	A	0	0.0022	µg/L	1	62354	2/17/2009 2:05:43 AM
N-Nitroso-di-n-butylamine (NDBA)	ND	A	0	0.0043	µg/L	1	62354	2/17/2009 2:05:43 AM
N-nitrosodi-n-propylamine (NDPA)	ND	A	0	0.0075	µg/L	1	62354	2/17/2009 2:05:43 AM
N-Nitrosomethylethylamine (NMEA)	ND	A	0	0.0032	µg/L	1	62354	2/17/2009 2:05:43 AM
N-Nitrosopyrollidine (NPYR)	ND	A	0	0.0022	µg/L	1	62354	2/17/2009 2:05:43 AM
Surr: N-Nitrosodimethylamine-d6	100		0	70-130	%REC	1	62354	2/17/2009 2:05:43 AM

Qualifiers:

- * or X Value exceeds Maximum Contaminant Level
- B Analyte Detected in Method Blank
- H Holding Time Exceeded
- N Not Accredited
- S Spike Recovery Outside Recovery Limits
- A Not Available for Accreditation
- E Value Above Quantitation Range
- J Analyte Detected Below Quantitation Limits
- ND Not Detected at the Reporting Limit

LCRA Environmental Laboratory Services

Date: *19-Feb-09*

CLIENT: CITY OF WICHITA FALLS
Client Sample ID: 002
Lab ID: 0901296-007
Project: WS 2430001 UCMR2
Collection Date: 1/13/2009 2:28:00 PM
Matrix: DRINKING WATER
TCEQ Sample ID: 0940758

Analyses	Result	Qual	MCL	PQL	Units	DF	BatchID	Date Analyzed
ORGANIC COMPOUNDS				**E525.2**		**(E525.2)**		Analyst: **SB**
Acetochlor	UNSAT	A	0	2.04	µg/L	1	62072	2/4/2009
Alachlor	UNSAT		2	2.04	µg/L	1	62072	2/4/2009
Metolachlor	UNSAT	A	40	1.02	µg/L	1	62072	2/4/2009
Surr: 1,3-Dimethyl-2-nitrobenzene	0	S		70-130	%REC	1	62072	2/4/2009
Surr: Perylene-d12	0	S	0	70-130	%REC	1	62072	2/4/2009
Surr: Pyrene-d10	0	S		70-130	%REC	1	62072	2/4/2009
Surr: Triphenyl Phosphate	0	S		70-130	%REC	1	62072	2/4/2009

Qualifiers:

- * or X Value exceeds Maximum Contaminant Level
- B Analyte Detected in Method Blank
- H Holding Time Exceeded
- N Not Accredited
- S Spike Recovery Outside Recovery Limits
- A Not Available for Accreditation
- E Value Above Quantitation Range
- J Analyte Detected Below Quantitation Limits
- ND Not Detected at the Reporting Limit

CLIENT: CITY OF WICHITA FALLS
Project: WS 2430001 UCMR2
Lab Order: 0901296

CASE NARRATIVE

Analytical Comments for METHOD 525.2, SAMPLE 0901296-007A: Sample rejected based on quality control issue (QC). Rejection notification sent to TCEQ; a result of "UNSAT" entered for tracking purposes only.

Analytical Comments for METHOD 535, SAMPLE 0901296-005A: Sample rejected based on quality control issue (QC) with 525.2 Herbicide analysis. Rejection notification sent to TCEQ; a result of "UNSAT" entered for tracking purposes only.

CLIENT: CITY OF WICHITA FALLS
Work Order: 0901296
Project: WS 2430001 UCMR2

ANALYTICAL QC SUMMARY REPORT

BatchID: 18155

Sample ID **LRB-18155**	SampType: **LRB**	TestCode: **529_DW**	Units: **µg/L**	Prep Date: **1/20/2009**	RunNo: **61757**
Client ID: **ZZZZZZ**	Batch ID: **18155**	TestNo: **E529**	**E529**	Analysis Date: **1/22/2009**	SeqNo: **1889147**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,3-Dinitrobenzene	ND	0.80									A
Hexahydro-1,3,5-trinitro-1,3,5-triazine (	ND	1.00									A
2,4,6-Trinitrotoluene (TNT)	ND	0.80									A
Surr: 1,2,4-trimethyl-5-nitrobenzene	2.43		2.000		122	70	130				
Surr: 1,3,5-trimethyl-2-nitrobenzene	2.59		2.000		129	70	130				
Surr: Nitrobenzene-d5	2.44		2.000		122	70	130				

Sample ID **LFB-18155**	SampType: **LFB**	TestCode: **529_DW**	Units: **µg/L**	Prep Date: **1/20/2009**	RunNo: **61757**
Client ID: **ZZZZZZ**	Batch ID: **18155**	TestNo: **E529**	**E529**	Analysis Date: **1/22/2009**	SeqNo: **1889148**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,3-Dinitrobenzene	0.70	0.80	0.7500	0	93.1	50	150				A
Hexahydro-1,3,5-trinitro-1,3,5-triazine (	0.64	1.00	0.7500	0	85.4	50	150				A
2,4,6-Trinitrotoluene (TNT)	0.74	0.80	0.7500	0	98.6	50	150				A
Surr: 1,2,4-trimethyl-5-nitrobenzene	2.37		2.000		118	70	130				
Surr: 1,3,5-trimethyl-2-nitrobenzene	2.56		2.000		128	70	130				
Surr: Nitrobenzene-d5	2.37		2.000		118	70	130				

Qualifiers:

A	Not Available for Accreditation	E	Value Above Quantitation Range	H	Holding Time Exceeded
N	Not Accredited	ND	Not Detected at Reporting Limit	R	RPD Outside Recovery Limits
S	Spike Recovery Outside Recovery Limits				

CLIENT: CITY OF WICHITA FALLS
Work Order: 0901296
Project: WS 2430001 UCMR2

ANALYTICAL QC SUMMARY REPORT

BatchID: 18167

Sample ID LRB-18167	SampType: LRB	TestCode: 521_DW	Units: µg/L	Prep Date: 1/21/2009	RunNo: 62354
Client ID: ZZZZZZ	Batch ID: 18167	TestNo: E521	E521	Analysis Date: 2/16/2009	SeqNo: 1905028

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
N-Nitrosodiethylamine (NDEA)	ND	0.0050									A
N-Nitrosodimethylamine (NDMA)	ND	0.0020									A
N-Nitroso-di-n-butylamine (NDBA)	ND	0.0040									A
N-nitrosodi-n-propylamine (NDPA)	ND	0.0070									A
N-Nitrosomethylethylamine (NMEA)	ND	0.0030									A
N-Nitrosopyrollidine (NPYR)	ND	0.0020									A
Surr: N-Nitrosodimethylamine-d6	0.0221		0.02000		111	70	130				

Sample ID LFB-18167	SampType: LFB	TestCode: 521_DW	Units: µg/L	Prep Date: 1/21/2009	RunNo: 62354
Client ID: ZZZZZZ	Batch ID: 18167	TestNo: E521	E521	Analysis Date: 2/16/2009	SeqNo: 1905029

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
N-Nitrosodiethylamine (NDEA)	0.0014	0.0050	0.002000	0	67.6	50	150				A
N-Nitrosodimethylamine (NDMA)	0.0023	0.0020	0.002000	0	117	50	150				A
N-Nitroso-di-n-butylamine (NDBA)	0.0015	0.0040	0.002000	0	75.4	50	150				A
N-nitrosodi-n-propylamine (NDPA)	0.0032	0.0070	0.004000	0	78.9	50	150				A
N-Nitrosomethylethylamine (NMEA)	0.0014	0.0030	0.002000	0	71.9	50	150				A
N-Nitrosopyrollidine (NPYR)	0.0017	0.0020	0.002000	0	83.0	50	150				A
Surr: N-Nitrosodimethylamine-d6	0.0200		0.02000		99.9	70	130				

Qualifiers:
A Not Available for Accreditation
N Not Accredited
S Spike Recovery Outside Recovery Limits
E Value Above Quantitation Range
ND Not Detected at Reporting Limit
H Holding Time Exceeded
R RPD Outside Recovery Limits

CLIENT: CITY OF WICHITA FALLS
Work Order: 0901296
Project: WS 2430001 UCMR2

ANALYTICAL QC SUMMARY REPORT

BatchID: 18189

Sample ID **LRB-18189**	SampType: **LRB**	TestCode: **535_DW**	Units: **µg/L**	Prep Date: **1/22/2009**	RunNo: **61795**
Client ID: **ZZZZZZ**	Batch ID: **18189**	TestNo: **E535**	**E535**	Analysis Date: **1/26/2009**	SeqNo: **1889826**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acetochlor ESA	ND	1.0									A
Acetochlor OA	ND	2.0									A
Alachlor ESA	ND	1.0									A
Alachlor OA	ND	2.0									A
Metolachlor ESA	ND	1.0									A
Metolachlor OA	ND	2.0									A
Surr: Dimethachlor ESA	4.4		4.000		110	70	130				

Sample ID **LFB-18189**	SampType: **LFB**	TestCode: **535_DW**	Units: **µg/L**	Prep Date: **1/22/2009**	RunNo: **61795**
Client ID: **ZZZZZZ**	Batch ID: **18189**	TestNo: **E535**	**E535**	Analysis Date: **1/26/2009**	SeqNo: **1889827**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acetochlor ESA	0.9	1.0	1.000	0	85.2	50	150				A
Acetochlor OA	0.7	2.0	1.000	0	70.0	50	150				A
Alachlor ESA	0.9	1.0	1.000	0	85.2	50	150				A
Alachlor OA	0.6	2.0	1.000	0	62.4	50	150				A
Metolachlor ESA	0.9	1.0	1.000	0	85.2	50	150				A
Metolachlor OA	0.8	2.0	1.000	0	82.0	50	150				A
Surr: Dimethachlor ESA	4.2		4.000		106	70	130				

Qualifiers:

A	Not Available for Accreditation	E	Value Above Quantitation Range	H	Holding Time Exceeded
N	Not Accredited	ND	Not Detected at Reporting Limit	R	RPD Outside Recovery Limits
S	Spike Recovery Outside Recovery Limits				

CLIENT: CITY OF WICHITA FALLS
Work Order: 0901296
Project: WS 2430001 UCMR2

ANALYTICAL QC SUMMARY REPORT

BatchID: 18196

Sample ID **LRB-18196**	SampType: **LRB**	TestCode: **527_DW**	Units: **µg/L**	Prep Date: **1/22/2009**	RunNo: **61811**
Client ID: **ZZZZZZ**	Batch ID: **18196**	TestNo: **E527**	**E527**	Analysis Date: **1/23/2009**	SeqNo: **1890587**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dimethoate	ND	0.70									A
Terbufos Sulfone	ND	0.40									A
2,2',4,4'-Tetrabromodiphenyl ether (BD	ND	0.30									A
2,2',4,4',6-Pentabromodiphenyl ether (	ND	0.50									A
2,2',4,4',5-Pentabromodiphenyl ether (	ND	0.90									A
2,2',4,4',5,5'-Hexabromobiphenyl (BDE-	ND	0.70									A
2,2',4,4',5,5'-Hexabromodiphenyl ether	ND	0.80									A
Surr: 1,3-Dimethyl-2-nitrobenzene	3.81		5.000		76.2	70	130				
Surr: Triphenyl Phosphate	4.79		5.000		95.8	70	130				
Surr: Perylene-d12	5.09		5.000		102	70	130				

Sample ID **LFB-18196**	SampType: **LFB**	TestCode: **527_DW**	Units: **µg/L**	Prep Date: **1/22/2009**	RunNo: **61811**
Client ID: **ZZZZZZ**	Batch ID: **18196**	TestNo: **E527**	**E527**	Analysis Date: **1/23/2009**	SeqNo: **1890588**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dimethoate	0.18	0.70	0.2500	0	73.2	50	150				A
Terbufos Sulfone	0.33	0.40	0.2500	0	134	50	150				A
2,2',4,4'-Tetrabromodiphenyl ether (BD	0.19	0.30	0.2500	0	76.2	50	150				A
2,2',4,4',6-Pentabromodiphenyl ether (	0.19	0.50	0.2500	0	75.9	50	150				A
2,2',4,4',5-Pentabromodiphenyl ether (	0.23	0.90	0.2500	0	92.1	50	150				A
2,2',4,4',5,5'-Hexabromobiphenyl (BDE-	0.25	0.70	0.2500	0	101	50	150				A
2,2',4,4',5,5'-Hexabromodiphenyl ether	0.24	0.80	0.2500	0	94.3	50	150				A
Surr: 1,3-Dimethyl-2-nitrobenzene	4.04		5.000		80.7	70	130				
Surr: Triphenyl Phosphate	5.25		5.000		105	70	130				
Surr: Perylene-d12	5.43		5.000		109	70	130				

Qualifiers:

A	Not Available for Accreditation	E	Value Above Quantitation Range	H	Holding Time Exceeded
N	Not Accredited	ND	Not Detected at Reporting Limit	R	RPD Outside Recovery Limits
S	Spike Recovery Outside Recovery Limits				

CLIENT: CITY OF WICHITA FALLS
Work Order: 0901296
Project: WS 2430001 UCMR2

ANALYTICAL QC SUMMARY REPORT

BatchID: 18200

Sample ID **LRB-18200**	SampType: **LRB**	TestCode: **521_DW**	Units: **µg/L**	Prep Date: **1/23/2009**	RunNo: **62388**
Client ID: **ZZZZZZ**	Batch ID: **18200**	TestNo: **E521**	**E521**	Analysis Date: **2/18/2009**	SeqNo: **1911826**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
N-Nitrosodiethylamine (NDEA)	ND	0.0050									A
N-Nitrosodimethylamine (NDMA)	ND	0.0020									A
N-Nitroso-di-n-butylamine (NDBA)	ND	0.0040									A
N-nitrosodi-n-propylamine (NDPA)	ND	0.0070									A
N-Nitrosomethylethylamine (NMEA)	ND	0.0030									A
N-Nitrosopyrollidine (NPYR)	ND	0.0020									A
Surr: N-Nitrosodimethylamine-d6	0.0156		0.02000		77.8	70	130				

Sample ID **LFB-18200**	SampType: **LFB**	TestCode: **521_DW**	Units: **µg/L**	Prep Date: **1/23/2009**	RunNo: **62388**
Client ID: **ZZZZZZ**	Batch ID: **18200**	TestNo: **E521**	**E521**	Analysis Date: **2/18/2009**	SeqNo: **1911827**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
N-Nitrosodiethylamine (NDEA)	0.0015	0.0050	0.002000	0	74.8	50	150				A
N-Nitrosodimethylamine (NDMA)	0.0020	0.0020	0.002000	0	101	50	150				A
N-Nitroso-di-n-butylamine (NDBA)	0.0015	0.0040	0.002000	0	76.5	50	150				A
N-nitrosodi-n-propylamine (NDPA)	0.0031	0.0070	0.004000	0	78.1	50	150				A
N-Nitrosomethylethylamine (NMEA)	0.0014	0.0030	0.002000	0	69.6	50	150				A
N-Nitrosopyrollidine (NPYR)	0.0015	0.0020	0.002000	0	75.3	50	150				A
Surr: N-Nitrosodimethylamine-d6	0.0191		0.02000		95.5	70	130				

Qualifiers:
A Not Available for Accreditation
N Not Accredited
S Spike Recovery Outside Recovery Limits
E Value Above Quantitation Range
ND Not Detected at Reporting Limit
H Holding Time Exceeded
R RPD Outside Recovery Limits

CLIENT: CITY OF WICHITA FALLS
Work Order: 0901296
Project: WS 2430001 UCMR2

ANALYTICAL QC SUMMARY REPORT

BatchID: 18217

Sample ID **LRB-18217**	SampType: **LRB**	TestCode: **529_DW**	Units: **µg/L**	Prep Date: **1/26/2009**	RunNo: **61870**
Client ID: **ZZZZZZ**	Batch ID: **18217**	TestNo: **E529**	**E529**	Analysis Date: **1/27/2009**	SeqNo: **1891558**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,3-Dinitrobenzene	ND	0.80									A
Hexahydro-1,3,5-trinitro-1,3,5-triazine (	ND	1.00									A
2,4,6-Trinitrotoluene (TNT)	ND	0.80									A
Surr: 1,2,4-trimethyl-5-nitrobenzene	2.57		2.000		128	70	130				
Surr: 1,3,5-trimethyl-2-nitrobenzene	2.32		2.000		116	70	130				
Surr: Nitrobenzene-d5	2.47		2.000		123	70	130				

Sample ID **LFB-18217**	SampType: **LFB**	TestCode: **529_DW**	Units: **µg/L**	Prep Date: **1/26/2009**	RunNo: **61870**
Client ID: **ZZZZZZ**	Batch ID: **18217**	TestNo: **E529**	**E529**	Analysis Date: **1/27/2009**	SeqNo: **1891559**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,3-Dinitrobenzene	0.44	0.80	0.7500	0	58.8	50	150				A
Hexahydro-1,3,5-trinitro-1,3,5-triazine (	0.49	1.00	0.7500	0	65.0	50	150				A
2,4,6-Trinitrotoluene (TNT)	0.69	0.80	0.7500	0	91.9	50	150				A
Surr: 1,2,4-trimethyl-5-nitrobenzene	2.13		2.000		106	70	130				
Surr: 1,3,5-trimethyl-2-nitrobenzene	2.22		2.000		111	70	130				
Surr: Nitrobenzene-d5	2.13		2.000		106	70	130				

Qualifiers:

- A Not Available for Accreditation
- N Not Accredited
- S Spike Recovery Outside Recovery Limits
- E Value Above Quantitation Range
- ND Not Detected at Reporting Limit
- H Holding Time Exceeded
- R RPD Outside Recovery Limits

CLIENT: CITY OF WICHITA FALLS
Work Order: 0901296
Project: WS 2430001 UCMR2

ANALYTICAL QC SUMMARY REPORT

BatchID: 18228

Sample ID **LRB-18228**	SampType: **LRB**	TestCode: **525_UCMR**	Units: **µg/L**	Prep Date: **1/26/2009**	RunNo: **61881**
Client ID: **ZZZZZZ**	Batch ID: **18228**	TestNo: **E525.2**	**E525.2**	Analysis Date: **1/29/2009**	SeqNo: **1891684**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acetochlor	ND	2.00									A
Alachlor	ND	2.00									
Metolachlor	ND	1.00									A
Surr: 1,3-Dimethyl-2-nitrobenzene	9.00		10.00		90.0	70	130				
Surr: Perylene-d12	9.10		10.00		91.0	70	130				
Surr: Pyrene-d10	9.40		10.00		94.0	70	130				
Surr: Triphenyl Phosphate	9.70		10.00		97.0	70	130				

Sample ID **LFB-18228**	SampType: **LFB**	TestCode: **525_UCMR**	Units: **µg/L**	Prep Date: **1/26/2009**	RunNo: **61881**
Client ID: **ZZZZZZ**	Batch ID: **18228**	TestNo: **E525.2**	**E525.2**	Analysis Date: **1/29/2009**	SeqNo: **1891685**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acetochlor	0.80	2.00	1.000	0	80.0	70	130				A
Alachlor	0.90	2.00	1.000	0	90.0	70	130				
Metolachlor	0.90	1.00	1.000	0	90.0	70	130				A
Surr: 1,3-Dimethyl-2-nitrobenzene	8.70		10.00		87.0	70	130				
Surr: Perylene-d12	9.20		10.00		92.0	70	130				
Surr: Pyrene-d10	9.70		10.00		97.0	70	130				
Surr: Triphenyl Phosphate	10.0		10.00		100	70	130				

Qualifiers:

- A Not Available for Accreditation
- N Not Accredited
- S Spike Recovery Outside Recovery Limits
- E Value Above Quantitation Range
- ND Not Detected at Reporting Limit
- H Holding Time Exceeded
- R RPD Outside Recovery Limits

Final Analysis Report

LCRA Environmental Laboratory Services

Date: *17-Mar-09*

CLIENT: CITY OF WICHITA FALLS/ CYPRESS W
Client Sample ID: 002
Lab ID: 0902878-001
Project: WS 2430001 UCMR2
Collection Date: 2/24/2009 9:38:00 AM
Matrix: DRINKING WATER
TCEQ Sample ID: 0992606

Analyses	Result	Qual	MCL	PQL	Units	DF	BatchID	Date Analyzed
HERBICIDE DEGRADATES IN DRINKING WATER				**E535**		**(E535)**		Analyst: **BR**
Acetochlor ESA	ND	A	0	1.1	µg/L	1	62906	3/9/2009 2:17:54 PM
Acetochlor OA	ND	A	0	2.2	µg/L	1	62906	3/9/2009 2:17:54 PM
Alachlor ESA	ND	A	0	1.1	µg/L	1	62906	3/9/2009 2:17:54 PM
Alachlor OA	ND	A	0	2.2	µg/L	1	62906	3/9/2009 2:17:54 PM
Metolachlor ESA	ND	A	0	1.1	µg/L	1	62906	3/9/2009 2:17:54 PM
Metolachlor OA	ND	A	0	2.2	µg/L	1	62906	3/9/2009 2:17:54 PM
Surr: Dimethachlor ESA	90.8		0	70-130	%REC	1	62906	3/9/2009 2:17:54 PM

Qualifiers:

- * or X Value exceeds Maximum Contaminant Level
- B Analyte Detected in Method Blank
- H Holding Time Exceeded
- N Not Accredited
- S Spike Recovery Outside Recovery Limits
- A Not Available for Accreditation
- E Value Above Quantitation Range
- J Analyte Detected Below Quantitation Limits
- ND Not Detected at the Reporting Limit

LCRA Environmental Laboratory Services

Date: *17-Mar-09*

CLIENT: CITY OF WICHITA FALLS/ CYPRESS W
Client Sample ID: 002
Lab ID: 0902878-002
Project: WS 2430001 UCMR2
Collection Date: 2/24/2009 9:34:00 AM
Matrix: DRINKING WATER
TCEQ Sample ID: 0992605

Analyses	Result	Qual	MCL	PQL	Units	DF	BatchID	Date Analyzed
ORGANIC COMPOUNDS				**E525.2**		**(E525.2)**		Analyst: **BR**
Acetochlor	ND	A	0	1.96	µg/L	1	62965	3/12/2009 9:10:00 PM
Alachlor	ND		2	1.96	µg/L	1	62965	3/12/2009 9:10:00 PM
Metolachlor	ND	A	40	0.98	µg/L	1	62965	3/12/2009 9:10:00 PM
Surr: 1,3-Dimethyl-2-nitrobenzene	94.0			70-130	%REC	1	62965	3/12/2009 9:10:00 PM
Surr: Perylene-d12	127		0	70-130	%REC	1	62965	3/12/2009 9:10:00 PM
Surr: Pyrene-d10	93.0			70-130	%REC	1	62965	3/12/2009 9:10:00 PM
Surr: Triphenyl Phosphate	127			70-130	%REC	1	62965	3/12/2009 9:10:00 PM

Qualifiers:

- * or X Value exceeds Maximum Contaminant Level
- B Analyte Detected in Method Blank
- H Holding Time Exceeded
- N Not Accredited
- S Spike Recovery Outside Recovery Limits
- A Not Available for Accreditation
- E Value Above Quantitation Range
- J Analyte Detected Below Quantitation Limits
- ND Not Detected at the Reporting Limit

CLIENT: CITY OF WICHITA FALLS/ CYPRESS W
Work Order: 0902878
Project: WS 2430001 UCMR2

ANALYTICAL QC SUMMARY REPORT

BatchID: 18654

Sample ID: **LRB-18654**	SampType: **LRB**	TestCode: **535_DW**	Units: **µg/L**	Prep Date: **3/5/2009**	RunNo: **62906**
Client ID: **ZZZZZZ**	Batch ID: **18654**	TestNo: **E535**	**E535**	Analysis Date: **3/9/2009**	SeqNo: **1928545**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acetochlor ESA	ND	1.0									A
Acetochlor OA	ND	2.0									A
Alachlor ESA	ND	1.0									A
Alachlor OA	ND	2.0									A
Metolachlor ESA	ND	1.0									A
Metolachlor OA	ND	2.0									A
Surr: Dimethachlor ESA	4.1		4.000		102	70	130				

Sample ID: **LFB-18654**	SampType: **LFB**	TestCode: **535_DW**	Units: **µg/L**	Prep Date: **3/5/2009**	RunNo: **62906**
Client ID: **ZZZZZZ**	Batch ID: **18654**	TestNo: **E535**	**E535**	Analysis Date: **3/9/2009**	SeqNo: **1928546**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acetochlor ESA	0.6	1.0	1.000	0	59.1	50	150				A
Acetochlor OA	0.6	2.0	1.000	0	62.5	50	150				A
Alachlor ESA	0.6	1.0	1.000	0	60.2	50	150				A
Alachlor OA	0.6	2.0	1.000	0	59.2	50	150				A
Metolachlor ESA	0.6	1.0	1.000	0	59.5	50	150				A
Metolachlor OA	0.7	2.0	1.000	0	70.4	50	150				A
Surr: Dimethachlor ESA	4.2		4.000		105	70	130				

Qualifiers:

A	Not Available for Accreditation	E	Value Above Quantitation Range	H	Holding Time Exceeded
N	Not Accredited	ND	Not Detected at Reporting Limit	R	RPD Outside Recovery Limits
S	Spike Recovery Outside RecoveryLimits				

CLIENT: CITY OF WICHITA FALLS/ CYPRESS W
Work Order: 0902878
Project: WS 2430001 UCMR2

ANALYTICAL QC SUMMARY REPORT

BatchID: 18677

Sample ID: LRB-18677	SampType: LRB	TestCode: 525_UCMR	Units: µg/L	Prep Date: 3/9/2009	RunNo: 62965
Client ID: ZZZZZZ	Batch ID: 18677	TestNo: E525.2	E525.2	Analysis Date: 3/12/2009	SeqNo: 1929715

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acetochlor	ND	2.00									A
Alachlor	ND	2.00									
Metolachlor	ND	1.00									A
Surr: 1,3-Dimethyl-2-nitrobenzene	8.70		10.00		87.0	70	130				
Surr: Perylene-d12	8.70		10.00		87.0	70	130				
Surr: Pyrene-d10	10.0		10.00		100	70	130				
Surr: Triphenyl Phosphate	9.40		10.00		94.0	70	130				

Sample ID: LFB-18677	SampType: LFB	TestCode: 525_UCMR	Units: µg/L	Prep Date: 3/9/2009	RunNo: 62965
Client ID: ZZZZZZ	Batch ID: 18677	TestNo: E525.2	E525.2	Analysis Date: 3/12/2009	SeqNo: 1929716

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acetochlor	0.80	2.00	1.000	0	80.0	70	130				A
Alachlor	0.70	2.00	1.000	0	70.0	70	130				
Metolachlor	0.70	1.00	1.000	0	70.0	70	130				A
Surr: 1,3-Dimethyl-2-nitrobenzene	9.20		10.00		92.0	70	130				
Surr: Perylene-d12	7.40		10.00		74.0	70	130				
Surr: Pyrene-d10	10.1		10.00		101	70	130				
Surr: Triphenyl Phosphate	8.10		10.00		81.0	70	130				

Qualifiers:

A	Not Available for Accreditation	E	Value Above Quantitation Range	H	Holding Time Exceeded
N	Not Accredited	ND	Not Detected at Reporting Limit	R	RPD Outside Recovery Limits
S	Spike Recovery Outside RecoveryLimits				

Final Analysis Report

CRA Environmental Laboratory Services

Date: *24-Apr-09*

CLIENT: CITY OF WICHITA FALLS/ CYPRESS W
Client Sample ID: 002
Lab ID: 0904281-001
Project: WS 2430001
Collection Date: 4/7/2009 1:05:00 PM
Matrix: DRINKING WATER
TCEQ Sample ID: 0943676

Analyses	Result	Qual	MCL	MDL	PQL	Units	DF	BatchID	Date Analyzed
ICP METALS IN DRINKING WATER				**E200.7**					Analyst: **MV**
Sodium	67.5		20000	0.510	0.510	mg/L	1	63833	4/15/2009 1:00:12 PM

alifiers:

* or X	Value exceeds Maximum Contaminant Level
B	Analyte Detected in Method Blank
H	Holding Time Exceeded
N	Not Accredited
S	Spike Recovery Outside Recovery Limits
A	Not Available for Accreditation
E	Value Above Quantitation Range
J	Analyte Detected Below Quantitation Limits
ND	Not Detected at the Reporting Limit

LCRA Environmental Laboratory Services

Date: *04-May-09*

CLIENT: CITY OF WICHITA FALLS/ CYPRESS W
Client Sample ID: 002
Lab ID: 0904277-002
Project: WS 2430001 UCMR2
Collection Date: 4/7/2009 1:12:00 PM
Matrix: DRINKING WATER
TCEQ Sample ID: 0940766

Analyses	Result	Qual	MCL	PQL	Units	DF	BatchID	Date Analyzed
FLAME RETARDANTS IN DRINKING WATER				**E527**		**(E527)**		Analyst: **CO**
Dimethoate	ND	A	0	0.70	µg/L	1	64145	4/24/2009 10:43:00 PM
Terbufos Sulfone	ND	A	0	0.40	µg/L	1	64145	4/24/2009 10:43:00 PM
2,2',4,4'-Tetrabromodiphenyl ether (BDE-47)	ND	A	0	0.30	µg/L	1	64145	4/24/2009 10:43:00 PM
2,2',4,4',6-Pentabromodiphenyl ether (BDE-100)	ND	A	0	0.50	µg/L	1	64145	4/24/2009 10:43:00 PM
2,2',4,4',5-Pentabromodiphenyl ether (BDE-99)	ND	A	0	0.91	µg/L	1	64145	4/24/2009 10:43:00 PM
2,2',4,4',5,5'-Hexabromobiphenyl (BDE-153)	ND	A	0	0.70	µg/L	1	64145	4/24/2009 10:43:00 PM
2,2',4,4',5,5'-Hexabromodiphenyl ether (HBB-245)	ND	A	0	0.81	µg/L	1	64145	4/24/2009 10:43:00 PM
Surr: 1,3-Dimethyl-2-nitrobenzene	102		0	70-130	%REC	1	64145	4/24/2009 10:43:00 PM
Surr: Triphenyl Phosphate	126		0	70-130	%REC	1	64145	4/24/2009 10:43:00 PM
Surr: Perylene-d12	127		0	70-130	%REC	1	64145	4/24/2009 10:43:00 PM

Qualifiers:

- * or X Value exceeds Maximum Contaminant Level
- B Analyte Detected in Method Blank
- H Holding Time Exceeded
- N Not Accredited
- S Spike Recovery Outside Recovery Limits
- A Not Available for Accreditation
- E Value Above Quantitation Range
- J Analyte Detected Below Quantitation Limits
- ND Not Detected at the Reporting Limit

LCRA Environmental Laboratory Services

Date: *04-May-09*

CLIENT: CITY OF WICHITA FALLS/ CYPRESS W
Client Sample ID: 002
Lab ID: 0904277-004
Project: WS 2430001 UCMR2
Collection Date: 4/7/2009 1:10:00 PM
Matrix: DRINKING WATER
TCEQ Sample ID: 0940753

Analyses	Result	Qual	MCL	PQL	Units	DF	BatchID	Date Analyzed
EXPLOSIVES IN DRINKING WATER				**E529**		**(E529)**		Analyst: **CO**
1,3-Dinitrobenzene	ND	A	0	0.84	µg/L	1	64017	4/17/2009 8:49:00 PM
Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	ND	A	0	1.04	µg/L	1	64017	4/17/2009 8:49:00 PM
2,4,6-Trinitrotoluene (TNT)	ND	A	0	0.84	µg/L	1	64017	4/17/2009 8:49:00 PM
Surr: 1,2,4-trimethyl-5-nitrobenzene	105		0	70-130	%REC	1	64017	4/17/2009 8:49:00 PM
Surr: 1,3,5-trimethyl-2-nitrobenzene	121		0	70-130	%REC	1	64017	4/17/2009 8:49:00 PM
Surr: Nitrobenzene-d5	102		0	70-130	%REC	1	64017	4/17/2009 8:49:00 PM

Qualifiers:

* or X	Value exceeds Maximum Contaminant Level
B	Analyte Detected in Method Blank
H	Holding Time Exceeded
N	Not Accredited
S	Spike Recovery Outside Recovery Limits
A	Not Available for Accreditation
E	Value Above Quantitation Range
J	Analyte Detected Below Quantitation Limits
ND	Not Detected at the Reporting Limit

LCRA Environmental Laboratory Services

Date: *04-May-09*

CLIENT: CITY OF WICHITA FALLS/ CYPRESS W
Client Sample ID: 002
Lab ID: 0904277-006
Project: WS 2430001 UCMR2
Collection Date: 4/7/2009 1:06:00 PM
Matrix: DRINKING WATER
TCEQ Sample ID: 0940749

Analyses	Result	Qual	MCL	PQL	Units	DF	BatchID	Date Analyzed
HERBICIDE DEGRADATES IN DRINKING WATER				**E535**		**(E535)**		Analyst: **BR**
Acetochlor ESA	ND	A	0	1.1	µg/L	1	64003	4/21/2009 6:01:05 PM
Acetochlor OA	ND	A	0	2.1	µg/L	1	64003	4/21/2009 6:01:05 PM
Alachlor ESA	ND	A	0	1.1	µg/L	1	64003	4/21/2009 6:01:05 PM
Alachlor OA	ND	A	0	2.1	µg/L	1	64003	4/21/2009 6:01:05 PM
Metolachlor ESA	ND	A	0	1.1	µg/L	1	64003	4/21/2009 6:01:05 PM
Metolachlor OA	ND	A	0	2.1	µg/L	1	64003	4/21/2009 6:01:05 PM
Surr: Dimethachlor ESA	85.2		0	70-130	%REC	1	64003	4/21/2009 6:01:05 PM

Qualifiers:

- * or X Value exceeds Maximum Contaminant Level
- B Analyte Detected in Method Blank
- H Holding Time Exceeded
- N Not Accredited
- S Spike Recovery Outside Recovery Limits
- A Not Available for Accreditation
- E Value Above Quantitation Range
- J Analyte Detected Below Quantitation Limits
- ND Not Detected at the Reporting Limit

LCRA Environmental Laboratory Services

Date: *04-May-09*

CLIENT: CITY OF WICHITA FALLS/ CYPRESS W
Client Sample ID: 002
Lab ID: 0904277-008
Project: WS 2430001 UCMR2
Collection Date: 4/7/2009 1:16:00 PM
Matrix: DRINKING WATER
TCEQ Sample ID: 0940757

Analyses	Result	Qual	MCL	PQL	Units	DF	BatchID	Date Analyzed
ORGANIC COMPOUNDS				**E525.2**		**(E525.2)**		Analyst: **BR**
Acetochlor	ND	A	0	2.00	µg/L	1	64141	4/24/2009 4:01:00 PM
Alachlor	ND		2	2.00	µg/L	1	64141	4/24/2009 4:01:00 PM
Metolachlor	ND	A	40	1.00	µg/L	1	64141	4/24/2009 4:01:00 PM
Surr: 1,3-Dimethyl-2-nitrobenzene	110			70-130	%REC	1	64141	4/24/2009 4:01:00 PM
Surr: Perylene-d12	127		0	70-130	%REC	1	64141	4/24/2009 4:01:00 PM
Surr: Pyrene-d10	105			70-130	%REC	1	64141	4/24/2009 4:01:00 PM
Surr: Triphenyl Phosphate	124			70-130	%REC	1	64141	4/24/2009 4:01:00 PM

Qualifiers:

- * or X Value exceeds Maximum Contaminant Level
- B Analyte Detected in Method Blank
- H Holding Time Exceeded
- N Not Accredited
- S Spike Recovery Outside Recovery Limits
- A Not Available for Accreditation
- E Value Above Quantitation Range
- J Analyte Detected Below Quantitation Limits
- ND Not Detected at the Reporting Limit

LCRA Environmental Laboratory Services

Date: *04-May-09*

CLIENT: CITY OF WICHITA FALLS/ CYPRESS W
Client Sample ID: 002
Lab ID: 0904277-010
Project: WS 2430001 UCMR2
Collection Date: 4/7/2009 1:08:00 PM
Matrix: DRINKING WATER
TCEQ Sample ID: 0940762

Analyses	Result	Qual	MCL	PQL	Units	DF	BatchID	Date Analyzed
NITROSOAMINES IN DRINKING WATER				**E521**		**(E521)**		Analyst: **KRD**
N-Nitrosodiethylamine (NDEA)	ND	A	0	0.0056	µg/L	1	64247	4/30/2009 5:25:07 AM
N-Nitrosodimethylamine (NDMA)	0.0052	A	0	0.0022	µg/L	1	64247	4/30/2009 5:25:07 AM
N-Nitroso-di-n-butylamine (NDBA)	ND	A	0	0.0045	µg/L	1	64247	4/30/2009 5:25:07 AM
N-nitrosodi-n-propylamine (NDPA)	ND	A	0	0.0079	µg/L	1	64247	4/30/2009 5:25:07 AM
N-Nitrosomethylethylamine (NMEA)	ND	A	0	0.0034	µg/L	1	64247	4/30/2009 5:25:07 AM
N-Nitrosopyrollidine (NPYR)	ND	A	0	0.0022	µg/L	1	64247	4/30/2009 5:25:07 AM
Surr: N-Nitrosodimethylamine-d6	92.8		0	70-130	%REC	1	64247	4/30/2009 5:25:07 AM

Qualifiers:

- * or X Value exceeds Maximum Contaminant Level
- B Analyte Detected in Method Blank
- H Holding Time Exceeded
- N Not Accredited
- S Spike Recovery Outside Recovery Limits
- A Not Available for Accreditation
- E Value Above Quantitation Range
- J Analyte Detected Below Quantitation Limits
- ND Not Detected at the Reporting Limit

CASE NARRATIVE

Analytical Comments for METHOD 535, SAMPLE 0904277-005A: Sample rejected based on QC for the 525.2 samples failed to meet the sample QC requirements (code). Rejection notification sent to TCEQ; a result of "UNSAT" entered for tracking purposes only.

Analytical Comments for METHOD 525.2, SAMPLE 0904277-007A: Sample rejected based on QC for the 525.2 samples failed to meet the sample QC requirements (code). Rejection notification sent to TCEQ; a result of "UNSAT" entered for tracking purposes only.

CLIENT: CITY OF WICHITA FALLS/ CYPRESS W
Work Order: 0904277
Project: WS 2430001 UCMR2

ANALYTICAL QC SUMMARY REPORT

BatchID: 19080

Sample ID: **LRB-19080**	SampType: **LRB**	TestCode: **521_DW**	Units: **µg/L**	Prep Date: **4/14/2009**	RunNo: **64247**
Client ID: **ZZZZZZ**	Batch ID: **19080**	TestNo: **E521**	**E521**	Analysis Date: **4/30/2009**	SeqNo: **1977973**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
N-Nitrosodiethylamine (NDEA)	ND	0.0050									A
N-Nitrosodimethylamine (NDMA)	ND	0.0020									A
N-Nitroso-di-n-butylamine (NDBA)	ND	0.0040									A
N-nitrosodi-n-propylamine (NDPA)	ND	0.0070									A
N-Nitrosomethylethylamine (NMEA)	ND	0.0030									A
N-Nitrosopyrollidine (NPYR)	ND	0.0020									A
Surr: N-Nitrosodimethylamine-d6	0.0168		0.02000		83.9	70	130				

Sample ID: **LFB-19080**	SampType: **LFB**	TestCode: **521_DW**	Units: **µg/L**	Prep Date: **4/14/2009**	RunNo: **64247**
Client ID: **ZZZZZZ**	Batch ID: **19080**	TestNo: **E521**	**E521**	Analysis Date: **4/30/2009**	SeqNo: **1977974**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
N-Nitrosodiethylamine (NDEA)	0.0014	0.0050	0.002000	0	71.7	50	150				A
N-Nitrosodimethylamine (NDMA)	0.0017	0.0020	0.002000	0	83.3	50	150				A
N-Nitroso-di-n-butylamine (NDBA)	0.0015	0.0040	0.002000	0	75.9	50	150				A
N-nitrosodi-n-propylamine (NDPA)	0.0025	0.0070	0.004000	0	63.2	50	150				A
N-Nitrosomethylethylamine (NMEA)	0.0015	0.0030	0.002000	0	74.9	50	150				A
N-Nitrosopyrollidine (NPYR)	0.0014	0.0020	0.002000	0	71.4	50	150				A
Surr: N-Nitrosodimethylamine-d6	0.0173		0.02000		86.3	70	130				

Qualifiers:

A	Not Available for Accreditation	E	Value Above Quantitation Range	H	Holding Time Exceeded
N	Not Accredited	ND	Not Detected at Reporting Limit	R	RPD Outside Recovery Limits
S	Spike Recovery Outside RecoveryLimits				

CLIENT: CITY OF WICHITA FALLS/ CYPRESS W
Work Order: 0904277
Project: WS 2430001 UCMR2

ANALYTICAL QC SUMMARY REPORT

BatchID: 19089

Sample ID: LRB-19089	SampType: LRB	TestCode: 525_UCMR	Units: µg/L	Prep Date: 4/14/2009	RunNo: 63928
Client ID: ZZZZZZ	Batch ID: 19089	TestNo: E525.2	E525.2	Analysis Date: 4/18/2009	SeqNo: 1963714

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acetochlor	ND	2.00									A
Alachlor	ND	2.00									
Metolachlor	ND	1.00									A
Surr: 1,3-Dimethyl-2-nitrobenzene	10.3		10.00		103	70	130				
Surr: Perylene-d12	10.1		10.00		101	70	130				
Surr: Pyrene-d10	11.2		10.00		112	70	130				
Surr: Triphenyl Phosphate	10.5		10.00		105	70	130				

Sample ID: LFB-19089	SampType: LFB	TestCode: 525_UCMR	Units: µg/L	Prep Date: 4/14/2009	RunNo: 63928
Client ID: ZZZZZZ	Batch ID: 19089	TestNo: E525.2	E525.2	Analysis Date: 4/18/2009	SeqNo: 1963715

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acetochlor	0.80	2.00	1.000	0	80.0	70	130				A
Alachlor	0.80	2.00	1.000	0	80.0	70	130				
Metolachlor	0.80	1.00	1.000	0	80.0	70	130				A
Surr: 1,3-Dimethyl-2-nitrobenzene	10.1		10.00		101	70	130				
Surr: Perylene-d12	9.90		10.00		99.0	70	130				
Surr: Pyrene-d10	10.9		10.00		109	70	130				
Surr: Triphenyl Phosphate	10.6		10.00		106	70	130				

Qualifiers:

A	Not Available for Accreditation	E	Value Above Quantitation Range	H	Holding Time Exceeded
N	Not Accredited	ND	Not Detected at Reporting Limit	R	RPD Outside Recovery Limits
S	Spike Recovery Outside RecoveryLimits				

CLIENT: CITY OF WICHITA FALLS/ CYPRESS W
Work Order: 0904277
Project: WS 2430001 UCMR2

ANALYTICAL QC SUMMARY REPORT

BatchID: 19096

Sample ID: **LRB-19096**	SampType: **LRB**	TestCode: **527_DW**	Units: **µg/L**	Prep Date: **4/14/2009**	RunNo: **64145**
Client ID: **ZZZZZZ**	Batch ID: **19096**	TestNo: **E527**	**E527**	Analysis Date: **4/24/2009**	SeqNo: **1975203**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dimethoate	ND	0.70									A
Terbufos Sulfone	ND	0.40									A
2,2',4,4'-Tetrabromodiphenyl ether (BD	ND	0.30									A
2,2',4,4',6-Pentabromodiphenyl ether (B	ND	0.50									A
2,2',4,4',5-Pentabromodiphenyl ether (B	ND	0.90									A
2,2',4,4',5,5'-Hexabromobiphenyl (BDE-	ND	0.70									A
2,2',4,4',5,5'-Hexabromodiphenyl ether	ND	0.80									A
Surr: 1,3-Dimethyl-2-nitrobenzene	4.54		5.000		90.7	70	130				
Surr: Triphenyl Phosphate	5.25		5.000		105	70	130				
Surr: Perylene-d12	5.66		5.000		113	70	130				

Sample ID: **LFB-19096**	SampType: **LFB**	TestCode: **527_DW**	Units: **µg/L**	Prep Date: **4/14/2009**	RunNo: **64145**
Client ID: **ZZZZZZ**	Batch ID: **19096**	TestNo: **E527**	**E527**	Analysis Date: **4/24/2009**	SeqNo: **1975204**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dimethoate	0.23	0.70	0.2500	0	91.5	50	150				A
Terbufos Sulfone	0.20	0.40	0.2500	0	81.3	50	150				A
2,2',4,4'-Tetrabromodiphenyl ether (BD	0.20	0.30	0.2500	0	79.4	50	150				A
2,2',4,4',6-Pentabromodiphenyl ether (B	0.22	0.50	0.2500	0	87.8	50	150				A
2,2',4,4',5-Pentabromodiphenyl ether (B	0.22	0.90	0.2500	0	86.0	50	150				A
2,2',4,4',5,5'-Hexabromobiphenyl (BDE-	0.19	0.70	0.2500	0	77.8	50	150				A
2,2',4,4',5,5'-Hexabromodiphenyl ether	0.18	0.80	0.2500	0	71.5	50	150				A
Surr: 1,3-Dimethyl-2-nitrobenzene	3.64		5.000		72.9	70	130				
Surr: Triphenyl Phosphate	4.16		5.000		83.1	70	130				
Surr: Perylene-d12	5.11		5.000		102	70	130				

Qualifiers:
A Not Available for Accreditation
N Not Accredited
S Spike Recovery Outside RecoveryLimits
E Value Above Quantitation Range
ND Not Detected at Reporting Limit
H Holding Time Exceeded
R RPD Outside Recovery Limits

CLIENT: CITY OF WICHITA FALLS/ CYPRESS W
Work Order: 0904277
Project: WS 2430001 UCMR2

ANALYTICAL QC SUMMARY REPORT

BatchID: 19097

Sample ID: LRB-19097	SampType: LRB	TestCode: 535_DW	Units: µg/L	Prep Date: 4/14/2009	RunNo: 64003
Client ID: ZZZZZZ	Batch ID: 19097	TestNo: E535	E535	Analysis Date: 4/21/2009	SeqNo: 1965284

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acetochlor ESA	ND	1.0									A
Acetochlor OA	ND	2.0									A
Alachlor ESA	ND	1.0									A
Alachlor OA	ND	2.0									A
Metolachlor ESA	ND	1.0									A
Metolachlor OA	ND	2.0									A
Surr: Dimethachlor ESA	3.7		4.000		93.3	70	130				

Sample ID: LFB-19097	SampType: LFB	TestCode: 535_DW	Units: µg/L	Prep Date: 4/14/2009	RunNo: 64003
Client ID: ZZZZZZ	Batch ID: 19097	TestNo: E535	E535	Analysis Date: 4/21/2009	SeqNo: 1965285

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acetochlor ESA	0.8	1.0	1.000	0	84.0	50	150				A
Acetochlor OA	0.8	2.0	1.000	0	80.0	50	150				A
Alachlor ESA	0.9	1.0	1.000	0	90.4	50	150				A
Alachlor OA	0.8	2.0	1.000	0	80.0	50	150				A
Metolachlor ESA	0.8	1.0	1.000	0	82.0	50	150				A
Metolachlor OA	0.8	2.0	1.000	0	82.8	50	150				A
Surr: Dimethachlor ESA	3.9		4.000		97.6	70	130				

Qualifiers:

- A Not Available for Accreditation
- E Value Above Quantitation Range
- H Holding Time Exceeded
- N Not Accredited
- ND Not Detected at Reporting Limit
- R RPD Outside Recovery Limits
- S Spike Recovery Outside RecoveryLimits

CLIENT: CITY OF WICHITA FALLS/ CYPRESS W
Work Order: 0904277
Project: WS 2430001 UCMR2

ANALYTICAL QC SUMMARY REPORT

BatchID: 19099

Sample ID: LRB-19099	SampType: LRB	TestCode: 529_DW	Units: µg/L	Prep Date: 4/15/2009	RunNo: 64017
Client ID: ZZZZZZ	Batch ID: 19099	TestNo: E529	E529	Analysis Date: 4/17/2009	SeqNo: 1967235

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,3-Dinitrobenzene	ND	0.80									A
Hexahydro-1,3,5-trinitro-1,3,5-triazine (	ND	1.00									A
2,4,6-Trinitrotoluene (TNT)	ND	0.80									A
Surr: 1,2,4-trimethyl-5-nitrobenzene	2.37		2.000		119	70	130				
Surr: 1,3,5-trimethyl-2-nitrobenzene	2.39		2.000		119	70	130				
Surr: Nitrobenzene-d5	1.68		2.000		84.1	70	130				

Sample ID: LFB-19099	SampType: LFB	TestCode: 529_DW	Units: µg/L	Prep Date: 4/15/2009	RunNo: 64017
Client ID: ZZZZZZ	Batch ID: 19099	TestNo: E529	E529	Analysis Date: 4/17/2009	SeqNo: 1967236

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,3-Dinitrobenzene	0.63	0.80	0.7500	0	83.7	50	150				A
Hexahydro-1,3,5-trinitro-1,3,5-triazine (	0.41	1.00	0.7500	0	54.9	50	150				A
2,4,6-Trinitrotoluene (TNT)	0.73	0.80	0.7500	0	97.5	50	150				A
Surr: 1,2,4-trimethyl-5-nitrobenzene	2.11		2.000		105	70	130				
Surr: 1,3,5-trimethyl-2-nitrobenzene	1.75		2.000		87.6	70	130				
Surr: Nitrobenzene-d5	1.56		2.000		78.2	70	130				

Qualifiers:

- A Not Available for Accreditation
- E Value Above Quantitation Range
- H Holding Time Exceeded
- N Not Accredited
- ND Not Detected at Reporting Limit
- R RPD Outside Recovery Limits
- S Spike Recovery Outside RecoveryLimits

CLIENT: CITY OF WICHITA FALLS/ CYPRESS W
Work Order: 0904277
Project: WS 2430001 UCMR2

ANALYTICAL QC SUMMARY REPORT

BatchID: 19142

Sample ID: **LRB-19142**	SampType: **LRB**	TestCode: **525_UCMR**	Units: **µg/L**	Prep Date: **4/21/2009**	RunNo: **64141**
Client ID: **ZZZZZZ**	Batch ID: **19142**	TestNo: **E525.2**	**E525.2**	Analysis Date: **4/24/2009**	SeqNo: **1975123**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acetochlor	ND	2.00									A
Alachlor	ND	2.00									
Metolachlor	ND	1.00									A
Surr: 1,3-Dimethyl-2-nitrobenzene	10.8		10.00		108	70	130				
Surr: Perylene-d12	12.3		10.00		123	70	130				
Surr: Pyrene-d10	10.6		10.00		106	70	130				
Surr: Triphenyl Phosphate	11.4		10.00		114	70	130				

Sample ID: **LFB-19142**	SampType: **LFB**	TestCode: **525_UCMR**	Units: **µg/L**	Prep Date: **4/21/2009**	RunNo: **64141**
Client ID: **ZZZZZZ**	Batch ID: **19142**	TestNo: **E525.2**	**E525.2**	Analysis Date: **4/24/2009**	SeqNo: **1975124**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acetochlor	0.70	2.00	1.000	0	70.0	70	130				A
Alachlor	0.80	2.00	1.000	0	80.0	70	130				
Metolachlor	0.80	1.00	1.000	0	80.0	70	130				A
Surr: 1,3-Dimethyl-2-nitrobenzene	10.4		10.00		104	70	130				
Surr: Perylene-d12	10.7		10.00		107	70	130				
Surr: Pyrene-d10	10.9		10.00		109	70	130				
Surr: Triphenyl Phosphate	11.0		10.00		110	70	130				

Qualifiers:
A Not Available for Accreditation
N Not Accredited
S Spike Recovery Outside RecoveryLimits
E Value Above Quantitation Range
ND Not Detected at Reporting Limit
H Holding Time Exceeded
R RPD Outside Recovery Limits

LCRA Environmental Laboratory Services

Date: *17-Jul-09*

CLIENT: CITY OF WICHITA FALLS/ CYPRESS W
Client Sample ID: 002
ID: 0907355-003
Project: WS 2430001
Collection Date: 7/7/2009 10:41:00 AM
Matrix: DRINKING WATER
TCEQ Sample ID: 0940771

Analyses	Result	Qual	MCL	MDL	PQL	Units	DF	BatchID	Date Analyzed
VOLATILES BY GCMS			E524.2					Analyst: SG	
Regulated Compounds [40 CFR §141.61(a) - 7/1/1999]									
Benzene	ND		5	0.50	0.50	µg/L	1	65997	7/10/2009 12:06:00 AM
Carbon Tetrachloride	ND		5	0.50	0.50	µg/L	1	65997	7/10/2009 12:06:00 AM
Monochlorobenzene	ND		100	0.50	0.50	µg/L	1	65997	7/10/2009 12:06:00 AM
o-Dichlorobenzene	ND		600	0.50	0.50	µg/L	1	65997	7/10/2009 12:06:00 AM
para-Dichlorobenzene	ND		75	0.50	0.50	µg/L	1	65997	7/10/2009 12:06:00 AM
1,2-Dichloroethane	ND		5	0.50	0.50	µg/L	1	65997	7/10/2009 12:06:00 AM
1,1-Dichloroethylene	ND		7	0.50	0.50	µg/L	1	65997	7/10/2009 12:06:00 AM
cis-1,2-Dichloroethylene	ND		70	0.50	0.50	µg/L	1	65997	7/10/2009 12:06:00 AM
trans-1,2-Dichloroethylene	ND		100	0.50	0.50	µg/L	1	65997	7/10/2009 12:06:00 AM
1,2-Dichloropropane	ND		5	0.50	0.50	µg/L	1	65997	7/10/2009 12:06:00 AM
Ethylbenzene	ND		700	0.50	0.50	µg/L	1	65997	7/10/2009 12:06:00 AM
Dichloromethane	ND		5	0.50	0.50	µg/L	1	65997	7/10/2009 12:06:00 AM
Styrene	ND		100	0.50	0.50	µg/L	1	65997	7/10/2009 12:06:00 AM
Tetrachloroethylene	ND		5	0.50	0.50	µg/L	1	65997	7/10/2009 12:06:00 AM
Toluene	ND		1000	0.50	0.50	µg/L	1	65997	7/10/2009 12:06:00 AM
1,2,4-Trichlorobenzene	ND		70	0.50	0.50	µg/L	1	65997	7/10/2009 12:06:00 AM
1,1,1-Trichloroethane	ND		200	0.50	0.50	µg/L	1	65997	7/10/2009 12:06:00 AM
1,2-Trichloroethane	ND		5	0.50	0.50	µg/L	1	65997	7/10/2009 12:06:00 AM
Trichloroethylene	ND		5	0.50	0.50	µg/L	1	65997	7/10/2009 12:06:00 AM
Vinyl chloride	ND		2	0.50	0.50	µg/L	1	65997	7/10/2009 12:06:00 AM
m,p-Xylene	ND			0.50	0.50	µg/L	1	65997	7/10/2009 12:06:00 AM
o-Xylene	ND			0.50	0.50	µg/L	1	65997	7/10/2009 12:06:00 AM
Xylenes, Total	ND		10000	0.50	0.50	µg/L	1	65997	7/10/2009 12:06:00 AM
Monitored Compounds [40 CFR §141.40(e) -7/1/1999]									
Chloroform	5.33	A		1.00	1.00	µg/L	1	65997	7/10/2009 12:06:00 AM
Bromodichloromethane	9.80	A		1.00	1.00	µg/L	1	65997	7/10/2009 12:06:00 AM
Dibromochloromethane	12.57	A		1.00	1.00	µg/L	1	65997	7/10/2009 12:06:00 AM
Bromoform	4.49	A		1.00	1.00	µg/L	1	65997	7/10/2009 12:06:00 AM
Dibromomethane	ND	A		0.50	0.50	µg/L	1	65997	7/10/2009 12:06:00 AM
1,3-Dichlorobenzene	ND	A		0.50	0.50	µg/L	1	65997	7/10/2009 12:06:00 AM
1,1-Dichloropropene	ND	A		0.50	0.50	µg/L	1	65997	7/10/2009 12:06:00 AM
1,1-Dichloroethane	ND	A		0.50	0.50	µg/L	1	65997	7/10/2009 12:06:00 AM
1,1,2,2-Tetrachloroethane	ND	A		0.50	0.50	µg/L	1	65997	7/10/2009 12:06:00 AM
1,3-Dichloropropane	ND	A		0.50	0.50	µg/L	1	65997	7/10/2009 12:06:00 AM
Chloromethane	ND	A		0.50	0.50	µg/L	1	65997	7/10/2009 12:06:00 AM
Bromomethane	ND	A		1.00	1.00	µg/L	1	65997	7/10/2009 12:06:00 AM
1,2,3-Trichloropropane	ND	A		1.00	1.00	µg/L	1	65997	7/10/2009 12:06:00 AM
1,1,1,2-Tetrachloroethane	ND	A		0.50	0.50	µg/L	1	65997	7/10/2009 12:06:00 AM
Chloroethane	ND	A		1.00	1.00	µg/L	1	65997	7/10/2009 12:06:00 AM
2,2-Dichloropropane	ND	A		0.50	0.50	µg/L	1	65997	7/10/2009 12:06:00 AM
2-Chlorotoluene	ND	A		0.50	0.50	µg/L	1	65997	7/10/2009 12:06:00 AM
4-Chlorotoluene	ND	A		0.50	0.50	µg/L	1	65997	7/10/2009 12:06:00 AM

Qualifiers:

- * or X Value exceeds Maximum Contaminant Level
- B Analyte Detected in Method Blank
- H Holding Time Exceeded
- N Not Accredited
- S Spike Recovery Outside Recovery Limits
- A Not Available for Accreditation
- E Value Above Quantitation Range
- J Analyte Detected Below Quantitation Limits
- ND Not Detected at the Reporting Limit

LCRA Environmental Laboratory Services

Date: *17-Jul-09*

CLIENT: CITY OF WICHITA FALLS/ CYPRESS W
Client Sample ID: 002
ID: 0907355-003
Project: WS 2430001
Collection Date: 7/7/2009 10:41:00 AM
Matrix: DRINKING WATER
TCEQ Sample ID: 0940771

Analyses	Result	Qual	MCL	MDL	PQL	Units	DF	BatchID	Date Analyzed
Monitored Compounds [40 CFR §141.40(e) -7/1/1999]									
Bromobenzene	ND	A		0.50	0.50	µg/L	1	65997	7/10/2009 12:06:00 AM
cis-1,3-Dichloropropene	ND	A		0.50	0.50	µg/L	1	65997	7/10/2009 12:06:00 AM
trans-1,3-Dichloropropene	ND	A		0.50	0.50	µg/L	1	65997	7/10/2009 12:06:00 AM
Screened Compounds									
1,2-Dibromo-3-chloropropane	ND	A	0.2	0.25	1.00	µg/L	1	65997	7/10/2009 12:06:00 AM
1,2-Dibromoethane	ND	A	0.05	0.06	1.00	µg/L	1	65997	7/10/2009 12:06:00 AM
Monitored Compounds [40 CFR §141.40(j) -7/1/1999]									
1,2,4-Trimethylbenzene	ND	A		0.50	0.50	µg/L	1	65997	7/10/2009 12:06:00 AM
1,2,3-Trichlorobenzene	ND	A		0.50	0.50	µg/L	1	65997	7/10/2009 12:06:00 AM
n-Propylbenzene	ND	A		0.50	0.50	µg/L	1	65997	7/10/2009 12:06:00 AM
Butyl benzene	ND	A		0.50	0.50	µg/L	1	65997	7/10/2009 12:06:00 AM
Naphthalene	ND	A		0.50	0.50	µg/L	1	65997	7/10/2009 12:06:00 AM
Hexachlorobutadiene	ND	A		0.50	0.50	µg/L	1	65997	7/10/2009 12:06:00 AM
1,3,5-Trimethylbenzene	ND	A		0.50	0.50	µg/L	1	65997	7/10/2009 12:06:00 AM
'-Isopropyltoluene	ND	A		0.50	0.50	µg/L	1	65997	7/10/2009 12:06:00 AM
.sopropylbenzene	ND	A		0.50	0.50	µg/L	1	65997	7/10/2009 12:06:00 AM
tert-Butylbenzene	ND	A		0.50	0.50	µg/L	1	65997	7/10/2009 12:06:00 AM
sec-Butylbenzene	ND	A		0.50	0.50	µg/L	1	65997	7/10/2009 12:06:00 AM
Trichlorofluoromethane	ND	A		0.50	0.50	µg/L	1	65997	7/10/2009 12:06:00 AM
Dichlorodifluoromethane	ND	A		1.00	1.00	µg/L	1	65997	7/10/2009 12:06:00 AM
Bromochloromethane	ND	A		0.50	0.50	µg/L	1	65997	7/10/2009 12:06:00 AM
Other Compounds									
Acetone	ND	A		5.00	5.00	µg/L	1	65997	7/10/2009 12:06:00 AM
Acrylonitrile	ND	A		5.00	5.00	µg/L	1	65997	7/10/2009 12:06:00 AM
2-Butanone (MEK)	ND	A		5.00	5.00	µg/L	1	65997	7/10/2009 12:06:00 AM
Carbon Disulfide	ND	A		0.50	0.50	µg/L	1	65997	7/10/2009 12:06:00 AM
Ethyl methacrylate	ND	A		5.00	5.00	µg/L	1	65997	7/10/2009 12:06:00 AM
2-Hexanone	ND	A		5.00	5.00	µg/L	1	65997	7/10/2009 12:06:00 AM
Iodomethane	ND	A		0.50	0.50	µg/L	1	65997	7/10/2009 12:06:00 AM
Methyl methacrylate	ND	A		5.00	5.00	µg/L	1	65997	7/10/2009 12:06:00 AM
4-Methyl-2-pentanone (MIBK)	ND	A		5.00	5.00	µg/L	1	65997	7/10/2009 12:06:00 AM
Methyl tert-butyl ether (MTBE)	ND	A		0.50	0.50	µg/L	1	65997	7/10/2009 12:06:00 AM
Tetrahydrofuran	ND	A		5.00	5.00	µg/L	1	65997	7/10/2009 12:06:00 AM
Vinyl Acetate	ND	A		5.00	5.00	µg/L	1	65997	7/10/2009 12:06:00 AM

Qualifiers:

- * or X Value exceeds Maximum Contaminant Level
- B Analyte Detected in Method Blank
- H Holding Time Exceeded
- N Not Accredited
- S Spike Recovery Outside Recovery Limits
- A Not Available for Accreditation
- E Value Above Quantitation Range
- J Analyte Detected Below Quantitation Limits
- ND Not Detected at the Reporting Limit

LCRA Environmental Laboratory Services

Date: *18-Aug-09*

CLIENT: CITY OF WICHITA FALLS/ CYPRESS W
Client Sample ID: 002
Lab ID: 0907361-002
Project: WS 2430001
Collection Date: 7/7/2009 10:14:00 AM
Matrix: DRINKING WATER
TCEQ Sample ID: 0940768

Analyses	Result	Qual	MCL	PQL	Units	DF	BatchID	Date Analyzed
FLAME RETARDANTS IN DRINKING WATER				**E527**		**(E527)**		Analyst: CO
Dimethoate	ND	A	0	0.70	µg/L	1	66307	7/23/2009 6:47:00 AM
Terbufos Sulfone	ND	A	0	0.40	µg/L	1	66307	7/23/2009 6:47:00 AM
2,2',4,4'-Tetrabromodiphenyl ether (BDE-47)	ND	A	0	0.30	µg/L	1	66307	7/23/2009 6:47:00 AM
2,2',4,4',6-Pentabromodiphenyl ether (BDE-100)	ND	A	0	0.50	µg/L	1	66307	7/23/2009 6:47:00 AM
2,2',4,4',5-Pentabromodiphenyl ether (BDE-99)	ND	A	0	0.89	µg/L	1	66307	7/23/2009 6:47:00 AM
2,2',4,4',5,5'-Hexabromobiphenyl (BDE-153)	ND	A	0	0.70	µg/L	1	66307	7/23/2009 6:47:00 AM
2,2',4,4',5,5'-Hexabromodiphenyl ether (HBB-245)	ND	A	0	0.79	µg/L	1	66307	7/23/2009 6:47:00 AM
Surr: 1,3-Dimethyl-2-nitrobenzene	83.0		0	70-130	%REC	1	66307	7/23/2009 6:47:00 AM
Surr: Triphenyl Phosphate	104		0	70-130	%REC	1	66307	7/23/2009 6:47:00 AM
Surr: Perylene-d12	102		0	70-130	%REC	1	66307	7/23/2009 6:47:00 AM

Qualifiers:

- * or X Value exceeds Maximum Contaminant Level
- B Analyte Detected in Method Blank
- H Holding Time Exceeded
- N Not Accredited
- S Spike Recovery Outside Recovery Limits
- A Not Available for Accreditation
- E Value Above Quantitation Range
- J Analyte Detected Below Quantitation Limits
- ND Not Detected at the Reporting Limit

LCRA Environmental Laboratory Services

Date: *18-Aug-09*

CLIENT: CITY OF WICHITA FALLS/ CYPRESS W
Client Sample ID: 002
ab ID: 0907361-004
Project: WS 2430001
Collection Date: 7/7/2009 10:43:00 AM
Matrix: DRINKING WATER
TCEQ Sample ID: 0940755

Analyses	Result	Qual	MCL	PQL	Units	DF	BatchID	Date Analyzed
EXPLOSIVES IN DRINKING WATER				**E529**		**(E529)**		Analyst: **CO**
1,3-Dinitrobenzene	ND	A	0	0.79	µg/L	1	66305	7/22/2009 9:53:00 PM
Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	ND	A	0	0.99	µg/L	1	66305	7/22/2009 9:53:00 PM
2,4,6-Trinitrotoluene (TNT)	ND	A	0	0.79	µg/L	1	66305	7/22/2009 9:53:00 PM
Surr: 1,2,4-trimethyl-5-nitrobenzene	86.3		0	70-130	%REC	1	66305	7/22/2009 9:53:00 PM
Surr: 1,3,5-trimethyl-2-nitrobenzene	85.6		0	70-130	%REC	1	66305	7/22/2009 9:53:00 PM
Surr: Nitrobenzene-d5	74.0		0	70-130	%REC	1	66305	7/22/2009 9:53:00 PM

Qualifiers:

- * or X Value exceeds Maximum Contaminant Level
- B Analyte Detected in Method Blank
- H Holding Time Exceeded
- N Not Accredited
- S Spike Recovery Outside Recovery Limits
- A Not Available for Accreditation
- E Value Above Quantitation Range
- J Analyte Detected Below Quantitation Limits
- ND Not Detected at the Reporting Limit

LCRA Environmental Laboratory Services

Date: *18-Aug-09*

CLIENT: CITY OF WICHITA FALLS/ CYPRESS W
Client Sample ID: 002
Lab ID: 0907361-006
Project: WS 2430001
Collection Date: 7/7/2009 10:34:00 AM
Matrix: DRINKING WATER
TCEQ Sample ID: 0940751

Analyses	Result	Qual	MCL	PQL	Units	DF	BatchID	Date Analyzed
HERBICIDE DEGRADATES IN DRINKING WATER				**E535**		**(E535)**		Analyst: **BC**
Acetochlor ESA	ND	A	0	1.0	µg/L	1	66106	7/15/2009 10:53:26 PM
Acetochlor OA	ND	A	0	2.1	µg/L	1	66106	7/15/2009 10:53:26 PM
Alachlor ESA	ND	A	0	1.0	µg/L	1	66106	7/15/2009 10:53:26 PM
Alachlor OA	ND	A	0	2.1	µg/L	1	66106	7/15/2009 10:53:26 PM
Metolachlor ESA	ND	A	0	1.0	µg/L	1	66106	7/15/2009 10:53:26 PM
Metolachlor OA	ND	A	0	2.1	µg/L	1	66106	7/15/2009 10:53:26 PM
Surr: Dimethachlor ESA	81.5		0	70-130	%REC	1	66106	7/15/2009 10:53:26 PM

Qualifiers:

- * or X Value exceeds Maximum Contaminant Level
- B Analyte Detected in Method Blank
- H Holding Time Exceeded
- N Not Accredited
- S Spike Recovery Outside Recovery Limits
- A Not Available for Accreditation
- E Value Above Quantitation Range
- J Analyte Detected Below Quantitation Limits
- ND Not Detected at the Reporting Limit

LCRA Environmental Laboratory Services

Date: *18-Aug-09*

CLIENT: CITY OF WICHITA FALLS/ CYPRESS W
Client Sample ID: 002
Lab ID: 0907361-008
Project: WS 2430001
Collection Date: 7/7/2009 10:47:00 AM
Matrix: DRINKING WATER
TCEQ Sample ID: 0940759

Analyses	Result	Qual	MCL	PQL	Units	DF	BatchID	Date Analyzed
ORGANIC COMPOUNDS				**E525.2**		**(E525.2)**		Analyst: **SG**
Acetochlor	ND	A	0	2.04	µg/L	1	66176	7/16/2009 9:29:00 PM
Alachlor	ND		2	2.04	µg/L	1	66176	7/16/2009 9:29:00 PM
Metolachlor	ND	A	40	1.02	µg/L	1	66176	7/16/2009 9:29:00 PM
Surr: 1,3-Dimethyl-2-nitrobenzene	99.0			70-130	%REC	1	66176	7/16/2009 9:29:00 PM
Surr: Perylene-d12	100		0	70-130	%REC	1	66176	7/16/2009 9:29:00 PM
Surr: Pyrene-d10	106			70-130	%REC	1	66176	7/16/2009 9:29:00 PM
Surr: Triphenyl Phosphate	118			70-130	%REC	1	66176	7/16/2009 9:29:00 PM

Qualifiers:

- * or X Value exceeds Maximum Contaminant Level
- B Analyte Detected in Method Blank
- H Holding Time Exceeded
- N Not Accredited
- S Spike Recovery Outside Recovery Limits
- A Not Available for Accreditation
- E Value Above Quantitation Range
- J Analyte Detected Below Quantitation Limits
- ND Not Detected at the Reporting Limit

LCRA Environmental Laboratory Services

Date: *18-Aug-09*

CLIENT: CITY OF WICHITA FALLS/ CYPRESS W
Client Sample ID: 002
Lab ID: 0907361-010
Project: WS 2430001
Collection Date: 7/7/2009 10:27:00 AM
Matrix: DRINKING WATER
TCEQ Sample ID: 0940764

Analyses	Result	Qual	MCL	PQL	Units	DF	BatchID	Date Analyzed
NITROSOAMINES IN DRINKING WATER				**E521**		**(E521)**		Analyst: **KRD**
N-Nitrosodiethylamine (NDEA)	ND	A	0	0.0057	µg/L	1	66874	8/14/2009 8:57:42 PM
N-Nitrosodimethylamine (NDMA)	0.0036	A	0	0.0023	µg/L	1	66874	8/14/2009 8:57:42 PM
N-Nitroso-di-n-butylamine (NDBA)	ND	A	0	0.0046	µg/L	1	66874	8/14/2009 8:57:42 PM
N-nitrosodi-n-propylamine (NDPA)	ND	A	0	0.0080	µg/L	1	66874	8/14/2009 8:57:42 PM
N-Nitrosomethylethylamine (NMEA)	ND	A	0	0.0034	µg/L	1	66874	8/14/2009 8:57:42 PM
N-Nitrosopyrollidine (NPYR)	ND	A	0	0.0023	µg/L	1	66874	8/14/2009 8:57:42 PM
Surr: N-Nitrosodimethylamine-d6	99.3		0	70-130	%REC	1	66874	8/14/2009 8:57:42 PM

Qualifiers:

- * or X Value exceeds Maximum Contaminant Level
- B Analyte Detected in Method Blank
- H Holding Time Exceeded
- N Not Accredited
- S Spike Recovery Outside Recovery Limits
- A Not Available for Accreditation
- E Value Above Quantitation Range
- J Analyte Detected Below Quantitation Limits
- ND Not Detected at the Reporting Limit

CLIENT: CITY OF WICHITA FALLS/ CYPRESS W
Work Order: 0907361
Project: WS 2430001

ANALYTICAL QC SUMMARY REPORT

BatchID: 20129

Sample ID: **LRB-20129**	SampType: **LRB**	TestCode: **535_DW**	Units: **µg/L**	Prep Date: **7/14/2009**	RunNo: **66106**
Client ID: **ZZZZZZ**	Batch ID: **20129**	TestNo: **E535**	**E535**	Analysis Date: **7/15/2009**	SeqNo: **2064337**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acetochlor ESA	ND	1.0									A
Acetochlor OA	ND	2.0									A
Alachlor ESA	ND	1.0									A
Alachlor OA	ND	2.0									A
Metolachlor ESA	ND	1.0									A
Metolachlor OA	ND	2.0									A
Surr: Dimethachlor ESA	19.0		20.00		95.1	70	130				

Sample ID: **LFB-20129**	SampType: **LFB**	TestCode: **535_DW**	Units: **µg/L**	Prep Date: **7/14/2009**	RunNo: **66106**
Client ID: **ZZZZZZ**	Batch ID: **20129**	TestNo: **E535**	**E535**	Analysis Date: **7/15/2009**	SeqNo: **2064339**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acetochlor ESA	0.8	1.0	1.000	0	79.2	50	150				A
Acetochlor OA	0.8	2.0	1.000	0	77.2	50	150				A
Alachlor ESA	0.8	1.0	1.000	0	83.6	50	150				A
Alachlor OA	0.7	2.0	1.000	0	74.0	50	150				A
Metolachlor ESA	0.8	1.0	1.000	0	79.2	50	150				A
Metolachlor OA	0.9	2.0	1.000	0	86.4	50	150				A
Surr: Dimethachlor ESA	18.5		20.00		92.4	70	130				

Qualifiers:
E Value Above Quantitation Range
H Holding Time Exceeded
ND Not Detected at Reporting Limit
R RPD Outside Recovery Limits
S Spike Recovery Outside Recovery Limits

CLIENT: CITY OF WICHITA FALLS/ CYPRESS W
Work Order: 0907361
Project: WS 2430001

ANALYTICAL QC SUMMARY REPORT

BatchID: 20146

Sample ID: LRB-20146	SampType: LRB	TestCode: 521_DW	Units: µg/L	Prep Date: 7/20/2009	RunNo: 66874
Client ID: ZZZZZZ	Batch ID: 20146	TestNo: E521	E521	Analysis Date: 8/14/2009	SeqNo: 2093418

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
N-Nitrosodiethylamine (NDEA)	ND	0.0050									A
N-Nitrosodimethylamine (NDMA)	ND	0.0020									A
N-Nitroso-di-n-butylamine (NDBA)	ND	0.0040									A
N-nitrosodi-n-propylamine (NDPA)	ND	0.0070									A
N-Nitrosomethylethylamine (NMEA)	ND	0.0030									A
N-Nitrosopyrollidine (NPYR)	ND	0.0020									A
Surr: N-Nitrosodimethylamine-d6	0.0202		0.02000		101	70	130				

Sample ID: LFB-20146	SampType: LFB	TestCode: 521_DW	Units: µg/L	Prep Date: 7/20/2009	RunNo: 66874
Client ID: ZZZZZZ	Batch ID: 20146	TestNo: E521	E521	Analysis Date: 8/14/2009	SeqNo: 2093419

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
N-Nitrosodiethylamine (NDEA)	0.0013	0.0050	0.002000	0	67.3	50	150				A
N-Nitrosodimethylamine (NDMA)	0.0012	0.0020	0.002000	0	61.5	50	150				A
N-Nitroso-di-n-butylamine (NDBA)	0.0015	0.0040	0.002000	0	74.9	50	150				A
N-nitrosodi-n-propylamine (NDPA)	0.0026	0.0070	0.004000	0	64.2	50	150				A
N-Nitrosomethylethylamine (NMEA)	0.0012	0.0030	0.002000	0	59.0	50	150				A
N-Nitrosopyrollidine (NPYR)	0.0014	0.0020	0.002000	0	69.6	50	150				A
Surr: N-Nitrosodimethylamine-d6	0.0180		0.02000		90.2	70	130				

Qualifiers:
E Value Above Quantitation Range
H Holding Time Exceeded
ND Not Detected at Reporting Limit
R RPD Outside Recovery Limits
S Spike Recovery Outside Recovery Limits

CLIENT: CITY OF WICHITA FALLS/ CYPRESS W
Work Order: 0907361
Project: WS 2430001

ANALYTICAL QC SUMMARY REPORT

BatchID: 20186

Sample ID: LRB-20186	SampType: LRB	TestCode: 527_DW	Units: µg/L	Prep Date: 7/15/2009	RunNo: 66307
Client ID: ZZZZZZ	Batch ID: 20186	TestNo: E527	E527	Analysis Date: 7/22/2009	SeqNo: 2070720

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dimethoate	ND	0.70									A
Terbufos Sulfone	ND	0.40									A
2,2',4,4'-Tetrabromodiphenyl ether (BD	ND	0.30									A
2,2',4,4',6-Pentabromodiphenyl ether (B	ND	0.50									A
2,2',4,4',5-Pentabromodiphenyl ether (B	ND	0.90									A
2,2',4,4',5,5'-Hexabromobiphenyl (BDE-	ND	0.70									A
2,2',4,4',5,5'-Hexabromodiphenyl ether	ND	0.80									A
Surr: 1,3-Dimethyl-2-nitrobenzene	4.18		5.000		83.6	70	130				
Surr: Triphenyl Phosphate	4.55		5.000		91.1	70	130				
Surr: Perylene-d12	5.22		5.000		104	70	130				

Sample ID: LFB-20186	SampType: LFB	TestCode: 527_DW	Units: µg/L	Prep Date: 7/15/2009	RunNo: 66307
Client ID: ZZZZZZ	Batch ID: 20186	TestNo: E527	E527	Analysis Date: 7/22/2009	SeqNo: 2070721

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dimethoate	0.20	0.70	0.2500	0	81.9	50	150				A
Terbufos Sulfone	0.22	0.40	0.2500	0	88.0	50	150				A
2,2',4,4'-Tetrabromodiphenyl ether (BD	0.22	0.30	0.2500	0	86.4	50	150				A
2,2',4,4',6-Pentabromodiphenyl ether (B	0.23	0.50	0.2500	0	90.2	50	150				A
2,2',4,4',5-Pentabromodiphenyl ether (B	0.27	0.90	0.2500	0	109	50	150				A
2,2',4,4',5,5'-Hexabromobiphenyl (BDE-	0.27	0.70	0.2500	0	108	50	150				A
2,2',4,4',5,5'-Hexabromodiphenyl ether	0.20	0.80	0.2500	0	81.5	50	150				A
Surr: 1,3-Dimethyl-2-nitrobenzene	4.43		5.000		88.7	70	130				
Surr: Triphenyl Phosphate	4.47		5.000		89.4	70	130				
Surr: Perylene-d12	4.88		5.000		97.5	70	130				

Qualifiers:
E Value Above Quantitation Range
H Holding Time Exceeded
ND Not Detected at Reporting Limit
R RPD Outside Recovery Limits
S Spike Recovery Outside Recovery Limits

CLIENT: CITY OF WICHITA FALLS/ CYPRESS W
Work Order: 0907361
Project: WS 2430001

ANALYTICAL QC SUMMARY REPORT

BatchID: 20195

Sample ID: **LRB-20195**	SampType: **LRB**	TestCode: **525_UCMR**	Units: **µg/L**	Prep Date: **7/16/2009**	RunNo: **66176**
Client ID: **ZZZZZZ**	Batch ID: **20195**	TestNo: **E525.2**	**E525.2**	Analysis Date: **7/16/2009**	SeqNo: **2066300**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acetochlor	ND	2.00									A
Alachlor	ND	2.00									
Metolachlor	ND	1.00									A
Surr: 1,3-Dimethyl-2-nitrobenzene	9.60		10.00		96.0	70	130				
Surr: Perylene-d12	10.2		10.00		102	70	130				
Surr: Pyrene-d10	10.1		10.00		101	70	130				
Surr: Triphenyl Phosphate	10.6		10.00		106	70	130				

Sample ID: **LFB-20195**	SampType: **LFB**	TestCode: **525_UCMR**	Units: **µg/L**	Prep Date: **7/16/2009**	RunNo: **66176**
Client ID: **ZZZZZZ**	Batch ID: **20195**	TestNo: **E525.2**	**E525.2**	Analysis Date: **7/16/2009**	SeqNo: **2066301**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acetochlor	0.80	2.00	1.000	0	80.0	70	130				A
Alachlor	0.80	2.00	1.000	0	80.0	70	130				
Metolachlor	0.80	1.00	1.000	0	80.0	70	130				A
Surr: 1,3-Dimethyl-2-nitrobenzene	9.60		10.00		96.0	70	130				
Surr: Perylene-d12	9.80		10.00		98.0	70	130				
Surr: Pyrene-d10	10.2		10.00		102	70	130				
Surr: Triphenyl Phosphate	11.3		10.00		113	70	130				

Qualifiers:
E Value Above Quantitation Range
H Holding Time Exceeded
ND Not Detected at Reporting Limit
R RPD Outside Recovery Limits
S Spike Recovery Outside Recovery Limits

CLIENT: CITY OF WICHITA FALLS/ CYPRESS W
Work Order: 0907361
Project: WS 2430001

ANALYTICAL QC SUMMARY REPORT

BatchID: 20229

Sample ID: LRB-20229	SampType: LRB	TestCode: 529_DW	Units: µg/L	Prep Date: 7/17/2009	RunNo: 66305
Client ID: ZZZZZZ	Batch ID: 20229	TestNo: E529	E529	Analysis Date: 7/22/2009	SeqNo: 2070686

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,3-Dinitrobenzene	ND	0.80									A
Hexahydro-1,3,5-trinitro-1,3,5-triazine (	ND	1.00									A
2,4,6-Trinitrotoluene (TNT)	ND	0.80									A
Surr: 1,2,4-trimethyl-5-nitrobenzene	2.59		2.000		129	70	130				
Surr: 1,3,5-trimethyl-2-nitrobenzene	2.05		2.000		103	70	130				
Surr: Nitrobenzene-d5	1.92		2.000		96.0	70	130				

Sample ID: LFB-20229	SampType: LFB	TestCode: 529_DW	Units: µg/L	Prep Date: 7/17/2009	RunNo: 66305
Client ID: ZZZZZZ	Batch ID: 20229	TestNo: E529	E529	Analysis Date: 7/22/2009	SeqNo: 2070687

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,3-Dinitrobenzene	0.68	0.80	0.7500	0	90.1	50	150				A
Hexahydro-1,3,5-trinitro-1,3,5-triazine (	0.64	1.00	0.7500	0	85.9	50	150				A
2,4,6-Trinitrotoluene (TNT)	0.75	0.80	0.7500	0	100	50	150				A
Surr: 1,2,4-trimethyl-5-nitrobenzene	2.34		2.000		117	70	130				
Surr: 1,3,5-trimethyl-2-nitrobenzene	2.09		2.000		105	70	130				
Surr: Nitrobenzene-d5	2.02		2.000		101	70	130				

Qualifiers:
E Value Above Quantitation Range
H Holding Time Exceeded
ND Not Detected at Reporting Limit
R RPD Outside Recovery Limits
S Spike Recovery Outside Recovery Limits

LCRA Environmental Laboratory Services

Date: *11-Dec-09*

CLIENT: CITY OF WICHITA FALLS/ CYPRESS W
Client Sample ID: 002
Lab ID: 0910A15-002
Project: WS 2430001 UCMR2
Collection Date: 10/28/2009 12:01:00 PM
Matrix: DRINKING WATER
TCEQ Sample ID: 0940769

Analyses	Result	Qual	MCL	PQL	Units	DF	BatchID	Date Analyzed
FLAME RETARDANTS IN DRINKING WATER				**E527**		**(E527)**		Analyst: **CO**
Dimethoate	< 0.70	A	0	0.70	µg/L	1	69071	11/18/2009 12:13:00 AM
Terbufos Sulfone	< 0.40	A	0	0.40	µg/L	1	69071	11/18/2009 12:13:00 AM
2,2',4,4'-Tetrabromodiphenyl ether (BDE-47)	< 0.30	A	0	0.30	µg/L	1	69071	11/18/2009 12:13:00 AM
2,2',4,4',6-Pentabromodiphenyl ether (BDE-100)	< 0.50	A	0	0.50	µg/L	1	69071	11/18/2009 12:13:00 AM
2,2',4,4',5-Pentabromodiphenyl ether (BDE-99)	< 0.90	A	0	0.90	µg/L	1	69071	11/18/2009 12:13:00 AM
2,2',4,4',5,5'-Hexabromobiphenyl (BDE-153)	< 0.70	A	0	0.70	µg/L	1	69071	11/18/2009 12:13:00 AM
2,2',4,4',5,5'-Hexabromodiphenyl ether (HBB-245)	< 0.80	A	0	0.80	µg/L	1	69071	11/18/2009 12:13:00 AM
Surr: 1,3-Dimethyl-2-nitrobenzene	78.3		0	70-130	%REC	1	69071	11/18/2009 12:13:00 AM
Surr: Triphenyl Phosphate	112		0	70-130	%REC	1	69071	11/18/2009 12:13:00 AM
Surr: Perylene-d12	99.3		0	70-130	%REC	1	69071	11/18/2009 12:13:00 AM

Qualifiers:

A Not Available for Accreditation
B Analyte Detected in Method Blank
E Value Above Quantitation Range
H Holding Time Exceeded
N Not Accredited
S Spike Recovery Outside Recovery Limits
X Value Exceeds Maximum Contaminant Level (MCL)

PQL: Practical Quantitation Limit

LCRA Environmental Laboratory Services

Date: *11-Dec-09*

CLIENT: CITY OF WICHITA FALLS/ CYPRESS W
Client Sample ID: 002
Lab ID: 0910A15-004
Project: WS 2430001 UCMR2
Collection Date: 10/28/2009 11:46:00 AM
Matrix: DRINKING WATER
TCEQ Sample ID: 0940756

Analyses	Result	Qual	MCL	PQL	Units	DF	BatchID	Date Analyzed
EXPLOSIVES IN DRINKING WATER				**E529**		**(E529)**		Analyst: **CO**
1,3-Dinitrobenzene	< 0.82	A	0	0.82	µg/L	1	69068	11/13/2009 2:07:00 AM
Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	< 1.02	A	0	1.02	µg/L	1	69068	11/13/2009 2:07:00 AM
2,4,6-Trinitrotoluene (TNT)	< 0.82	A	0	0.82	µg/L	1	69068	11/13/2009 2:07:00 AM
Surr: 1,2,4-trimethyl-5-nitrobenzene	74.7		0	70-130	%REC	1	69068	11/13/2009 2:07:00 AM
Surr: 1,3,5-trimethyl-2-nitrobenzene	74.5		0	70-130	%REC	1	69068	11/13/2009 2:07:00 AM
Surr: Nitrobenzene-d5	74.1		0	70-130	%REC	1	69068	11/13/2009 2:07:00 AM

Qualifiers:

A Not Available for Accreditation
B Analyte Detected in Method Blank
E Value Above Quantitation Range
H Holding Time Exceeded
N Not Accredited
S Spike Recovery Outside Recovery Limits
X Value Exceeds Maximum Contaminant Level (MCL)

PQL: Practical Quantitation Limit

LCRA Environmental Laboratory Services

Date: *11-Dec-09*

CLIENT: CITY OF WICHITA FALLS/ CYPRESS W
Client Sample ID: 002
Lab ID: 0910A15-006
Project: WS 2430001 UCMR2
Collection Date: 10/28/2009 12:07:00 PM
Matrix: DRINKING WATER
TCEQ Sample ID: 0940752

Analyses	Result	Qual	MCL	PQL	Units	DF	BatchID	Date Analyzed
HERBICIDE DEGRADATES IN DRINKING WATER				**E535**		**(E535)**		Analyst: **BC**
Acetochlor ESA	< 1.0	A	0	1.0	µg/L	1	68930	11/10/2009 9:58:12 PM
Acetochlor OA	< 2.0	A	0	2.0	µg/L	1	68930	11/10/2009 9:58:12 PM
Alachlor ESA	< 1.0	A	0	1.0	µg/L	1	68930	11/10/2009 9:58:12 PM
Alachlor OA	< 2.0	A	0	2.0	µg/L	1	68930	11/10/2009 9:58:12 PM
Metolachlor ESA	< 1.0	A	0	1.0	µg/L	1	68930	11/10/2009 9:58:12 PM
Metolachlor OA	< 2.0	A	0	2.0	µg/L	1	68930	11/10/2009 9:58:12 PM
Surr: Dimethachlor ESA	77.3		0	70-130	%REC	1	68930	11/10/2009 9:58:12 PM

Qualifiers:

A Not Available for Accreditation
B Analyte Detected in Method Blank
E Value Above Quantitation Range
H Holding Time Exceeded
N Not Accredited
S Spike Recovery Outside Recovery Limits
X Value Exceeds Maximum Contaminant Level (MCL)

PQL: Practical Quantitation Limit

LCRA Environmental Laboratory Services

Date: *11-Dec-09*

CLIENT: CITY OF WICHITA FALLS/ CYPRESS W
Client Sample ID: 002
Lab ID: 0910A15-008
Project: WS 2430001 UCMR2
Collection Date: 10/28/2009 11:54:00 AM
Matrix: DRINKING WATER
TCEQ Sample ID: 0940760

Analyses	Result	Qual	MCL	PQL	Units	DF	BatchID	Date Analyzed
ORGANIC COMPOUNDS				**E525.2**		**(E525.2)**		Analyst: **BC**
Acetochlor	< 2.00	A	0	2.00	µg/L	1	68824	11/6/2009 6:57:00 AM
Alachlor	< 2.00		2	2.00	µg/L	1	68824	11/6/2009 6:57:00 AM
Metolachlor	< 1.00	A	40	1.00	µg/L	1	68824	11/6/2009 6:57:00 AM
Surr: 1,3-Dimethyl-2-nitrobenzene	96.0			70-130	%REC	1	68824	11/6/2009 6:57:00 AM
Surr: Perylene-d12	100		0	70-130	%REC	1	68824	11/6/2009 6:57:00 AM
Surr: Pyrene-d10	102			70-130	%REC	1	68824	11/6/2009 6:57:00 AM
Surr: Triphenyl Phosphate	119			70-130	%REC	1	68824	11/6/2009 6:57:00 AM

Qualifiers:

A Not Available for Accreditation
B Analyte Detected in Method Blank
E Value Above Quantitation Range
H Holding Time Exceeded
N Not Accredited
S Spike Recovery Outside Recovery Limits
X Value Exceeds Maximum Contaminant Level (MCL)

PQL: Practical Quantitation Limit

LCRA Environmental Laboratory Services

Date: *11-Dec-09*

CLIENT: CITY OF WICHITA FALLS/ CYPRESS W
Client Sample ID: 002
Lab ID: 0910A15-010
Project: WS 2430001 UCMR2
Collection Date: 10/28/2009 12:05:00 PM
Matrix: DRINKING WATER
TCEQ Sample ID: 0940765

Analyses	Result	Qual	MCL	PQL	Units	DF	BatchID	Date Analyzed
NITROSOAMINES IN DRINKING WATER				**E521**		**(E521)**		Analyst: **KRD**
N-Nitrosodiethylamine (NDEA)	< 0.0054	A	0	0.0054	µg/L	1	69584	12/4/2009 3:00:25 AM
N-Nitrosodimethylamine (NDMA)	0.0046	A	0	0.0022	µg/L	1	69584	12/4/2009 3:00:25 AM
N-Nitroso-di-n-butylamine (NDBA)	< 0.0043	A	0	0.0043	µg/L	1	69584	12/4/2009 3:00:25 AM
N-nitrosodi-n-propylamine (NDPA)	< 0.0076	A	0	0.0076	µg/L	1	69584	12/4/2009 3:00:25 AM
N-Nitrosomethylethylamine (NMEA)	< 0.0033	A	0	0.0033	µg/L	1	69584	12/4/2009 3:00:25 AM
N-Nitrosopyrollidine (NPYR)	< 0.0022	A	0	0.0022	µg/L	1	69584	12/4/2009 3:00:25 AM
Surr: N-Nitrosodimethylamine-d6	78.0		0	70-130	%REC	1	69584	12/4/2009 3:00:25 AM

Qualifiers:

A Not Available for Accreditation
B Analyte Detected in Method Blank
E Value Above Quantitation Range
H Holding Time Exceeded
N Not Accredited
S Spike Recovery Outside Recovery Limits
X Value Exceeds Maximum Contaminant Level (MCL)

PQL: Practical Quantitation Limit

CLIENT: CITY OF WICHITA FALLS/ CYPRESS W
Work Order: 0910A15
Project: WS 2430001 UCMR2

ANALYTICAL QC SUMMARY REPORT

BatchID: 21686

Sample ID: **LRB-21686**	SampType: **LRB**	TestCode: **535_DW**	Units: **µg/L**	Prep Date: **11/9/2009**	RunNo: **68930**
Client ID: **ZZZZZZ**	Batch ID: **21686**	TestNo: **E535**	**E535**	Analysis Date: **11/10/2009**	SeqNo: **2190615**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acetochlor ESA	< 1.0	1.0									A
Acetochlor OA	< 2.0	2.0									A
Alachlor ESA	< 1.0	1.0									A
Alachlor OA	< 2.0	2.0									A
Metolachlor ESA	< 1.0	1.0									A
Metolachlor OA	< 2.0	2.0									A
Surr: Dimethachlor ESA	32.7		40.00		81.6	70	130				

Sample ID: **LFB-21686**	SampType: **LFB**	TestCode: **535_DW**	Units: **µg/L**	Prep Date: **11/9/2009**	RunNo: **68930**
Client ID: **ZZZZZZ**	Batch ID: **21686**	TestNo: **E535**	**E535**	Analysis Date: **11/10/2009**	SeqNo: **2190616**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acetochlor ESA	0.7	1.0	1.000	0	69.2	50	150				A
Acetochlor OA	0.6	2.0	1.000	0	58.8	50	150				A
Alachlor ESA	0.6	1.0	1.000	0	64.9	50	150				A
Alachlor OA	0.5	2.0	1.000	0	52.5	50	150				A
Metolachlor ESA	0.7	1.0	1.000	0	70.9	50	150				A
Metolachlor OA	0.6	2.0	1.000	0	61.6	50	150				A
Surr: Dimethachlor ESA	35.1		40.00		87.8	70	130				

Qualifiers:

A	Not Available for Accreditation	B	Analyte Detected in Method Blank	E	Value Above Quantitation Range
H	Holding Time Exceeded	N	Not Accredited	R	RPD Outside Recovery Limits
S	Spike Recovery Outside Recovery Limits	X	Value Exceeds Maximum Contaminant Level (MCL)		

CLIENT: CITY OF WICHITA FALLS/ CYPRESS W
Work Order: 0910A15
Project: WS 2430001 UCMR2

ANALYTICAL QC SUMMARY REPORT

BatchID: 21627

Sample ID: **LRB-21627**	SampType: **LRB**	TestCode: **525_UCMR**	Units: **µg/L**	Prep Date: **11/2/2009**	RunNo: **68824**
Client ID: **ZZZZZZ**	Batch ID: **21627**	TestNo: **E525.2**	**E525.2**	Analysis Date: **11/5/2009**	SeqNo: **2187520**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acetochlor	< 2.00	2.00									A
Alachlor	< 2.00	2.00									
Metolachlor	< 1.00	1.00									A
Surr: 1,3-Dimethyl-2-nitrobenzene	10.2		10.00		102	70	130				
Surr: Perylene-d12	9.90		10.00		99.0	70	130				
Surr: Pyrene-d10	10.0		10.00		100	70	130				
Surr: Triphenyl Phosphate	10.3		10.00		103	70	130				

Sample ID: **LFB-21627**	SampType: **LFB**	TestCode: **525_UCMR**	Units: **µg/L**	Prep Date: **11/2/2009**	RunNo: **68824**
Client ID: **ZZZZZZ**	Batch ID: **21627**	TestNo: **E525.2**	**E525.2**	Analysis Date: **11/5/2009**	SeqNo: **2187521**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acetochlor	0.70	2.00	1.000	0	70.0	70	130				A
Alachlor	0.70	2.00	1.000	0	70.0	70	130				
Metolachlor	0.80	1.00	1.000	0	80.0	70	130				A
Surr: 1,3-Dimethyl-2-nitrobenzene	10.1		10.00		101	70	130				
Surr: Perylene-d12	9.90		10.00		99.0	70	130				
Surr: Pyrene-d10	9.90		10.00		99.0	70	130				
Surr: Triphenyl Phosphate	9.70		10.00		97.0	70	130				

Qualifiers:

A	Not Available for Accreditation	B	Analyte Detected in Method Blank	E	Value Above Quantitation Range
H	Holding Time Exceeded	N	Not Accredited	R	RPD Outside Recovery Limits
S	Spike Recovery Outside Recovery Limits	X	Value Exceeds Maximum Contaminant Level (MCL)		

CLIENT: CITY OF WICHITA FALLS/ CYPRESS W
Work Order: 0910A15
Project: WS 2430001 UCMR2

ANALYTICAL QC SUMMARY REPORT

BatchID: 21711

Sample ID: LRB-21711	SampType: LRB	TestCode: 521_DW	Units: µg/L	Prep Date: 11/11/2009	RunNo: 69584
Client ID: ZZZZZZ	Batch ID: 21711	TestNo: E521	E521	Analysis Date: 12/3/2009	SeqNo: 2215114

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
N-Nitrosodiethylamine (NDEA)	< 0.0050	0.0050									A
N-Nitrosodimethylamine (NDMA)	< 0.0020	0.0020									A
N-Nitroso-di-n-butylamine (NDBA)	< 0.0040	0.0040									A
N-nitrosodi-n-propylamine (NDPA)	< 0.0070	0.0070									A
N-Nitrosomethylethylamine (NMEA)	< 0.0030	0.0030									A
N-Nitrosopyrollidine (NPYR)	< 0.0020	0.0020									A
Surr: N-Nitrosodimethylamine-d6	0.0211		0.02000		106	70	130				

Sample ID: LFB-21711	SampType: LFB	TestCode: 521_DW	Units: µg/L	Prep Date: 11/11/2009	RunNo: 69584
Client ID: ZZZZZZ	Batch ID: 21711	TestNo: E521	E521	Analysis Date: 12/3/2009	SeqNo: 2215115

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
N-Nitrosodiethylamine (NDEA)	0.0016	0.0050	0.002000	0	81.6	50	150				A
N-Nitrosodimethylamine (NDMA)	0.0025	0.0020	0.002000	0	127	50	150				A
N-Nitroso-di-n-butylamine (NDBA)	0.0021	0.0040	0.002000	0	106	50	150				A
N-nitrosodi-n-propylamine (NDPA)	0.0045	0.0070	0.004000	0	114	50	150				A
N-Nitrosomethylethylamine (NMEA)	0.0018	0.0030	0.002000	0	89.4	50	150				A
N-Nitrosopyrollidine (NPYR)	0.0016	0.0020	0.002000	0	80.0	50	150				A
Surr: N-Nitrosodimethylamine-d6	0.0234		0.02000		117	70	130				

Qualifiers:

A	Not Available for Accreditation	B	Analyte Detected in Method Blank	E	Value Above Quantitation Range
H	Holding Time Exceeded	N	Not Accredited	R	RPD Outside Recovery Limits
S	Spike Recovery Outside Recovery Limits	X	Value Exceeds Maximum Contaminant Level (MCL)		

CLIENT: CITY OF WICHITA FALLS/ CYPRESS W
Work Order: 0910A15
Project: WS 2430001 UCMR2

ANALYTICAL QC SUMMARY REPORT

BatchID: 21681

Sample ID: LRB-21681	SampType: LRB	TestCode: 529_DW	Units: µg/L	Prep Date: 11/6/2009	RunNo: 69068
Client ID: ZZZZZZ	Batch ID: 21681	TestNo: E529	E529	Analysis Date: 11/12/2009	SeqNo: 2193777

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,3-Dinitrobenzene	< 0.80	0.80									A
Hexahydro-1,3,5-trinitro-1,3,5-triazine (	< 1.00	1.00									A
2,4,6-Trinitrotoluene (TNT)	< 0.80	0.80									A
Surr: 1,2,4-trimethyl-5-nitrobenzene	2.06		2.000		103	70	130				
Surr: 1,3,5-trimethyl-2-nitrobenzene	2.02		2.000		101	70	130				
Surr: Nitrobenzene-d5	2.09		2.000		104	70	130				

Sample ID: LFB-21681	SampType: LFB	TestCode: 529_DW	Units: µg/L	Prep Date: 11/6/2009	RunNo: 69068
Client ID: ZZZZZZ	Batch ID: 21681	TestNo: E529	E529	Analysis Date: 11/12/2009	SeqNo: 2193778

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,3-Dinitrobenzene	0.45	0.80	0.7500	0	59.8	50	150				A
Hexahydro-1,3,5-trinitro-1,3,5-triazine (	0.47	1.00	0.7500	0	62.6	50	150				A
2,4,6-Trinitrotoluene (TNT)	0.65	0.80	0.7500	0	86.2	50	150				A
Surr: 1,2,4-trimethyl-5-nitrobenzene	2.00		2.000		99.8	70	130				
Surr: 1,3,5-trimethyl-2-nitrobenzene	1.84		2.000		92.0	70	130				
Surr: Nitrobenzene-d5	1.80		2.000		90.0	70	130				

Qualifiers:

A	Not Available for Accreditation	B	Analyte Detected in Method Blank	E	Value Above Quantitation Range
H	Holding Time Exceeded	N	Not Accredited	R	RPD Outside Recovery Limits
S	Spike Recovery Outside Recovery Limits	X	Value Exceeds Maximum Contaminant Level (MCL)		

CLIENT: CITY OF WICHITA FALLS/ CYPRESS W
Work Order: 0910A15
Project: WS 2430001 UCMR2

ANALYTICAL QC SUMMARY REPORT

BatchID: 21684

Sample ID: LRB-21684	SampType: LRB	TestCode: 527_DW	Units: µg/L	Prep Date: 11/6/2009	RunNo: 69071
Client ID: ZZZZZZ	Batch ID: 21684	TestNo: E527	E527	Analysis Date: 11/17/2009	SeqNo: 2193813

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dimethoate	< 0.70	0.70									A
Terbufos Sulfone	< 0.40	0.40									A
2,2',4,4'-Tetrabromodiphenyl ether (BD	< 0.30	0.30									A
2,2',4,4',6-Pentabromodiphenyl ether (B	< 0.50	0.50									A
2,2',4,4',5-Pentabromodiphenyl ether (B	< 0.90	0.90									A
2,2',4,4',5,5'-Hexabromobiphenyl (BDE-	< 0.70	0.70									A
2,2',4,4',5,5'-Hexabromodiphenyl ether	< 0.80	0.80									A
Surr: 1,3-Dimethyl-2-nitrobenzene	4.13		5.000		82.6	70	130				
Surr: Triphenyl Phosphate	5.14		5.000		103	70	130				
Surr: Perylene-d12	5.12		5.000		102	70	130				

Sample ID: LFB-21684	SampType: LFB	TestCode: 527_DW	Units: µg/L	Prep Date: 11/6/2009	RunNo: 69071
Client ID: ZZZZZZ	Batch ID: 21684	TestNo: E527	E527	Analysis Date: 11/17/2009	SeqNo: 2193814

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dimethoate	0.21	0.70	0.2500	0	82.4	50	150				A
Terbufos Sulfone	0.33	0.40	0.2500	0	132	50	150				A
2,2',4,4'-Tetrabromodiphenyl ether (BD	0.24	0.30	0.2500	0	96.3	50	150				A
2,2',4,4',6-Pentabromodiphenyl ether (B	0.23	0.50	0.2500	0	93.2	50	150				A
2,2',4,4',5-Pentabromodiphenyl ether (B	0.29	0.90	0.2500	0	116	50	150				A
2,2',4,4',5,5'-Hexabromobiphenyl (BDE-	0.28	0.70	0.2500	0	111	50	150				A
2,2',4,4',5,5'-Hexabromodiphenyl ether	0.18	0.80	0.2500	0	70.3	50	150				A
Surr: 1,3-Dimethyl-2-nitrobenzene	4.08		5.000		81.5	70	130				
Surr: Triphenyl Phosphate	4.42		5.000		88.3	70	130				
Surr: Perylene-d12	4.80		5.000		96.0	70	130				

Qualifiers:

A	Not Available for Accreditation	B	Analyte Detected in Method Blank	E	Value Above Quantitation Range
H	Holding Time Exceeded	N	Not Accredited	R	RPD Outside Recovery Limits
S	Spike Recovery Outside Recovery Limits	X	Value Exceeds Maximum Contaminant Level (MCL)		

LCRA Environmental Laboratory Services

Date: *05-Mar-10*

JENT:	CITY OF WICHITA FALLS/ CYPRESS W	**Client Sample ID:**	EP002
ɔ ID:	1002327-013		@LAB SINK;MULTIPLE PLA
ɹ roject:	WS 2430001	**Collection Date:**	2/9/2010 1:25:00 PM
Matrix:	DRINKING WATER	**TCEQ Sample ID:**	1038841

Analyses	Result	Qual	MCL	MDL	PQL	Units	DF	BatchID	Date Analyzed
EDB, DBCP, AND 123TCP				**E504.1**		**(E504.1)**			Analyst: **MS**
REGULATED									
Dibromochloropropane (DBCP)	< 0.02		0.2	0.02	0.02	µg/L	1	71043	2/16/2010 1:36:25 AM
Ethylene dibromide (EDB)	< 0.01		0.05	0.01	0.02	µg/L	1	71043	2/16/2010 1:36:25 AM
MONITORED - UNREGULATED									
1,2,3-Trichloropropane	< 0.01	A		0.01	0.02	µg/L	1	71043	2/16/2010 1:36:25 AM

alifiers:

A Not Available for Accreditation
E Value Above Quantitation Range
J Analyte Detected Below Quantitation Limits
S Spike Recovery Outside Recovery Limits
B Analyte Detected in Method Blank
H Holding Time Exceeded
N Not Accredited
X Value Exceeds Maximum Contaminant Level (MCL)

PQL: Practical Quantitation Limit

LCRA Environmental Laboratory Services

Date: *05-Mar-10*

CLIENT: CITY OF WICHITA FALLS/ CYPRESS W
Client Sample ID: EP002
ID: 1002327-002 @LAB SINK;MULTIPLE PLA
Project: WS 2430001
Collection Date: 2/9/2010 1:15:00 PM
Matrix: DRINKING WATER
TCEQ Sample ID: 1038837

Analyses	Result	Qual	MCL	MDL	PQL	Units	DF	BatchID	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY				**E300.0**					Analyst: **JB**
Chloride	41.5		300	5.00	5.00	mg/L	5	71007	2/12/2010 6:14:00 PM
Fluoride	0.58		4	0.05	0.05	mg/L	5	71007	2/12/2010 6:14:00 PM
Nitrogen, Nitrate (As N)	0.12		10	0.05	0.05	mg/L	5	71007	2/12/2010 6:14:00 PM
Sulfate	42.5		300	5.00	5.00	mg/L	5	71007	2/12/2010 6:14:00 PM
ALKALINITY				**SM2320 B**					Analyst: **JB**
Alkalinity, Bicarbonate (As CaCO3)	51	A		2	2	mg/L CaCO3	1	71198	2/22/2010
Alkalinity, Carbonate (As CaCO3)	< 2	A		2	2	mg/L CaCO3	1	71198	2/22/2010
Alkalinity, Hydroxide (As CaCO3)	< 2	A		2	2	mg/L CaCO3	1	71198	2/22/2010
Alkalinity, Phenolphthalein	< 2	A		2	2	mg/L CaCO3	1	71198	2/22/2010
Alkalinity, Total (As CaCO3)	51	A		2	2	mg/L CaCO3	1	71198	2/22/2010
CONDUCTANCE				**SM2510B**					Analyst: **KK**
Specific Conductance @ 25°C	379			0	0	µmhos/cm	1	71053	2/16/2010
PH				**SM4500-H+-B**					Analyst: **JB**
pH @ 25°C [for information only]	8.6	XA	8.5	0	0	pH Units	1	71129	2/17/2010
TOTAL DISSOLVED SOLIDS				**SM2540C**					Analyst: **ZP**
Total Dissolved Solids (Residue, Filterable)	198		1000	10.0	25.0	mg/L	10	70973	2/12/2010

Qualifiers:

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H Holding Time Exceeded
J Analyte Detected Below Quantitation Limits
N Not Accredited
S Spike Recovery Outside Recovery Limits
X Value Exceeds Maximum Contaminant Level (MCL)

PQL: Practical Quantitation Limit

LCRA Environmental Laboratory Services

Date: *05-Mar-10*

CLIENT: CITY OF WICHITA FALLS/ CYPRESS W
Client Sample ID: EP002
ID: 1002327-004 @LAB SINK;MULTIPLE PLA
Project: WS 2430001
Collection Date: 2/9/2010 1:21:00 PM
Matrix: DRINKING WATER
TCEQ Sample ID: 1038836

Analyses	Result	Qual	MCL	MDL	PQL	Units	DF	BatchID	Date Analyzed
ICP METALS IN DRINKING WATER				**E200.7**					Analyst: **MV**
Sodium	41.7		20000	0.510	0.510	mg/L	1	71202	2/22/2010 1:11:23 PM

Qualifiers:

A Not Available for Accreditation
B Analyte Detected in Method Blank
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H Holding Time Exceeded
J Analyte Detected Below Quantitation Limits
N Not Accredited
S Spike Recovery Outside Recovery Limits
X Value Exceeds Maximum Contaminant Level (MCL)

PQL: Practical Quantitation Limit

LCRA Environmental Laboratory Services

Date: *05-Mar-10*

CLIENT: CITY OF WICHITA FALLS/ CYPRESS W
Client Sample ID: EP002
ID: 1002327-018 @LAB SINK;MULTIPLE PLA
Project: WS 2430001
Collection Date: 2/9/2010 1:19:00 PM
Matrix: DRINKING WATER
TCEQ Sample ID: 1038840

Analyses	Result	Qual	MCL	MDL	PQL	Units	DF	BatchID	Date Analyzed
CARBAMATES				**E531.1**					Analyst: **BC**
REGULATED									
Aldicarb	< 0.50		3	0.50	1.00	µg/L	1	71050	2/16/2010 3:08:03 AM
Aldicarb sulfone	< 0.80		2	0.80	1.00	µg/L	1	71050	2/16/2010 3:08:03 AM
Aldicarb sulfoxide	< 0.50		4	0.50	1.00	µg/L	1	71050	2/16/2010 3:08:03 AM
Carbofuran	< 0.90		40	0.90	1.00	µg/L	1	71050	2/16/2010 3:08:03 AM
Oxamyl	< 2.00		200	2.00	1.00	µg/L	1	71050	2/16/2010 3:08:03 AM
MONITORED - UNREGULATED									
3-Hydroxycarbofuran	< 0.30			0.30	1.00	µg/L	1	71050	2/16/2010 3:08:03 AM
Baygon	< 0.30			0.30	1.00	µg/L	1	71050	2/16/2010 3:08:03 AM
Carbaryl	< 0.30			0.30	1.00	µg/L	1	71050	2/16/2010 3:08:03 AM
Methiocarb	< 0.30			0.30	1.00	µg/L	1	71050	2/16/2010 3:08:03 AM
Methomyl	< 0.30			0.30	1.00	µg/L	1	71050	2/16/2010 3:08:03 AM

Qualifiers:

A Not Available for Accreditation
B Analyte Detected in Method Blank
E Value Above Quantitation Range
H Holding Time Exceeded
J Analyte Detected Below Quantitation Limits
N Not Accredited
S Spike Recovery Outside Recovery Limits
X Value Exceeds Maximum Contaminant Level (MCL)

PQL: Practical Quantitation Limit

LCRA Environmental Laboratory Services

Date: *05-Mar-10*

LIENT: CITY OF WICHITA FALLS/ CYPRESS W
Client Sample ID: EP002
ID: 1002327-016 @LAB SINK;MULTIPLE PLA
oject: WS 2430001
Collection Date: 2/9/2010 1:18:00 PM
Matrix: DRINKING WATER
TCEQ Sample ID: 1038839

Analyses	Result	Qual	MCL	MDL	PQL	Units	DF	BatchID	Date Analyzed
HERBICIDES, DW				E515.4		(E515.4)			Analyst: SM
REGULATED									
2,4,5-TP (Silvex)	< 0.20		50	0.20	1.00	µg/L	1	71326	2/26/2010 4:28:00 AM
2,4-D	< 0.10		70	0.10	1.00	µg/L	1	71326	2/26/2010 4:28:00 AM
Dalapon	< 1.00		200	1.00	1.00	µg/L	1	71326	2/26/2010 4:28:00 AM
Dinoseb	< 0.20		7	0.20	1.00	µg/L	1	71326	2/26/2010 4:28:00 AM
Pentachlorophenol	< 0.04		1	0.04	1.00	µg/L	1	71326	2/26/2010 4:28:00 AM
Picloram	< 0.10		500	0.10	1.00	µg/L	1	71326	2/26/2010 4:28:00 AM
MONITORED - UNREGULATED									
2,4,5-T	< 0.30			0.30	1.00	µg/L	1	71326	2/26/2010 4:28:00 AM
2,4-DB	< 2.90			2.90	5.00	µg/L	1	71326	2/26/2010 4:28:00 AM
3,5-Dichlorobenzoic acid	< 0.50			0.50	1.00	µg/L	1	71326	2/26/2010 4:28:00 AM
Acifluorfen	Not Measured			0.80	5.00	µg/L	1	71326	2/26/2010 4:28:00 AM
Bentazon	< 1.70			1.70	5.00	µg/L	1	71326	2/26/2010 4:28:00 AM
Chloramben	< 1.70			1.70	5.00	µg/L	1	71326	2/26/2010 4:28:00 AM
Dicamba	< 0.40			0.40	1.00	µg/L	1	71326	2/26/2010 4:28:00 AM
Dichlorprop	< 0.70			0.70	2.00	µg/L	1	71326	2/26/2010 4:28:00 AM

lifiers:

A Not Available for Accreditation
B Analyte Detected in Method Blank
E Value Above Quantitation Range
H Holding Time Exceeded
J Analyte Detected Below Quantitation Limits
N Not Accredited
S Spike Recovery Outside Recovery Limits
X Value Exceeds Maximum Contaminant Level (MCL)

PQL: Practical Quantitation Limit

LCRA Environmental Laboratory Services

Date: *05-Mar-10*

CLIENT: CITY OF WICHITA FALLS/ CYPRESS W
Client Sample ID: EP002
ID: 1002327-006 @LAB SINK;MULTIPLE PLA
Project: WS 2430001
Collection Date: 2/9/2010 1:17:00 PM
Matrix: DRINKING WATER
TCEQ Sample ID: 1038838

Analyses	Result	Qual	MCL	MDL	PQL	Units	DF	BatchID	Date Analyzed
CHLORINATED PESTICIDES				**E508.1**		**(E508)**			Analyst: **BC**
PESTICIDES									
Chlordane	< 0.21		2	0.21	0.54	µg/L	1	71127	2/18/2010 12:51:36 AM
Toxaphene	< 1.1		3	1.1	0.54	µg/L	1	71127	2/18/2010 12:51:36 AM
PCBS									
Aroclor 1016	< 0.09		0.5	0.09	0.27	µg/L	1	71127	2/18/2010 12:51:36 AM
Aroclor 1221	< 0.27		0.5	0.27	0.27	µg/L	1	71127	2/18/2010 12:51:36 AM
Aroclor 1232	< 0.27		0.5	0.27	0.27	µg/L	1	71127	2/18/2010 12:51:36 AM
Aroclor 1242	< 0.27		0.5	0.27	0.27	µg/L	1	71127	2/18/2010 12:51:36 AM
Aroclor 1248	< 0.11		0.5	0.11	0.27	µg/L	1	71127	2/18/2010 12:51:36 AM
Aroclor 1254	< 0.11		0.5	0.11	0.27	µg/L	1	71127	2/18/2010 12:51:36 AM
Aroclor 1260	< 0.21		0.5	0.21	0.27	µg/L	1	71127	2/18/2010 12:51:36 AM
ORGANIC COMPOUNDS				**E525.2**		**(E525.2)**			Analyst: **SG**
PESTICIDES									
Alachlor	< 0.11		2	0.11	0.11	µg/L	1	71124	2/18/2010 4:47:00 AM
Aldrin	< 0.11	A		0.11	0.11	µg/L	1	71124	2/18/2010 4:47:00 AM
Atrazine	< 0.11		3	0.11	0.11	µg/L	1	71124	2/18/2010 4:47:00 AM
Bromacil	< 0.21	A		0.21	0.21	µg/L	1	71124	2/18/2010 4:47:00 AM
Butachlor	< 0.11	A		0.11	0.11	µg/L	1	71124	2/18/2010 4:47:00 AM
ans-Nonachlor	< 0.11	A		0.11	0.11	µg/L	1	71124	2/18/2010 4:47:00 AM
Dieldrin	< 0.11	A		0.11	0.11	µg/L	1	71124	2/18/2010 4:47:00 AM
Endrin	< 0.01		2	0.01	0.11	µg/L	1	71124	2/18/2010 4:47:00 AM
Heptachlor	< 0.04		0.4	0.04	0.11	µg/L	1	71124	2/18/2010 4:47:00 AM
Heptachlor epoxide	< 0.02		0.2	0.02	0.11	µg/L	1	71124	2/18/2010 4:47:00 AM
Hexachlorobenzene	< 0.11		1	0.11	0.11	µg/L	1	71124	2/18/2010 4:47:00 AM
Hexachlorocyclopentadiene	< 0.11		50	0.11	0.11	µg/L	1	71124	2/18/2010 4:47:00 AM
Lindane	< 0.02		0.2	0.02	0.11	µg/L	1	71124	2/18/2010 4:47:00 AM
Methoxychlor	< 0.11		40	0.11	0.11	µg/L	1	71124	2/18/2010 4:47:00 AM
Metolachlor	< 0.11	A		0.11	0.11	µg/L	1	71124	2/18/2010 4:47:00 AM
Metribuzin	< 0.11	A		0.11	0.11	µg/L	1	71124	2/18/2010 4:47:00 AM
Pentachlorophenol	< 0.04		1	0.04	1.07	µg/L	1	71124	2/18/2010 4:47:00 AM
Propachlor	< 0.11	A		0.11	0.11	µg/L	1	71124	2/18/2010 4:47:00 AM
Simazine	< 0.07		4	0.07	0.11	µg/L	1	71124	2/18/2010 4:47:00 AM
PAHS									
Benzo(a)pyrene	< 0.02		0.2	0.02	0.11	µg/L	1	71124	2/18/2010 4:47:00 AM
PHTHALATES									
Di(2-ethylhexyl)adipate	< 0.64		400	0.64	2.14	µg/L	1	71124	2/18/2010 4:47:00 AM
Di(2-ethylhexyl)phthalate	< 0.64		6	0.64	2.14	µg/L	1	71124	2/18/2010 4:47:00 AM

ılifiers:

A Not Available for Accreditation
B Analyte Detected in Method Blank
E Value Above Quantitation Range
H Holding Time Exceeded
J Analyte Detected Below Quantitation Limits
N Not Accredited
S Spike Recovery Outside Recovery Limits
X Value Exceeds Maximum Contaminant Level (MCL)

PQL: Practical Quantitation Limit

LCRA Environmental Laboratory Services

Date: *07-Sep-10*

CLIENT: CITY OF WICHITA FALLS/ CYPRESS W
Client Sample ID: EP002
ID: 1008B96-003
LAB SINK
Project: WS 2430001
Collection Date: 8/24/2010 2:15:00 PM
Matrix: DRINKING WATER
TCEQ Sample ID: 1038842

Analyses	Result	Qual	MCL	MDL	PQL	Units	DF	BatchID	Date Analyzed
VOLATILES BY GCMS				**E524.2**					Analyst: **SG**
REGULATED COMPOUNDS [40 CFR §141.61(A) - 7/1/1999]									
Benzene	< 0.50		5	0.50	0.50	µg/L	1	76134	9/1/2010 3:28:00 PM
Carbon Tetrachloride	< 0.50		5	0.50	0.50	µg/L	1	76134	9/1/2010 3:28:00 PM
Monochlorobenzene	< 0.50		100	0.50	0.50	µg/L	1	76134	9/1/2010 3:28:00 PM
o-Dichlorobenzene	< 0.50		600	0.50	0.50	µg/L	1	76134	9/1/2010 3:28:00 PM
para-Dichlorobenzene	< 0.50		75	0.50	0.50	µg/L	1	76134	9/1/2010 3:28:00 PM
1,2-Dichloroethane	< 0.50		5	0.50	0.50	µg/L	1	76134	9/1/2010 3:28:00 PM
1,1-Dichloroethylene	< 0.50		7	0.50	0.50	µg/L	1	76134	9/1/2010 3:28:00 PM
cis-1,2-Dichloroethylene	< 0.50		70	0.50	0.50	µg/L	1	76134	9/1/2010 3:28:00 PM
trans-1,2-Dichloroethylene	< 0.50		100	0.50	0.50	µg/L	1	76134	9/1/2010 3:28:00 PM
1,2-Dichloropropane	< 0.50		5	0.50	0.50	µg/L	1	76134	9/1/2010 3:28:00 PM
Ethylbenzene	< 0.50		700	0.50	0.50	µg/L	1	76134	9/1/2010 3:28:00 PM
Dichloromethane	< 0.50		5	0.50	0.50	µg/L	1	76134	9/1/2010 3:28:00 PM
Styrene	< 0.50		100	0.50	0.50	µg/L	1	76134	9/1/2010 3:28:00 PM
Tetrachloroethylene	< 0.50		5	0.50	0.50	µg/L	1	76134	9/1/2010 3:28:00 PM
Toluene	< 0.50		1000	0.50	0.50	µg/L	1	76134	9/1/2010 3:28:00 PM
1,2,4-Trichlorobenzene	< 0.50		70	0.50	0.50	µg/L	1	76134	9/1/2010 3:28:00 PM
1,1,1-Trichloroethane	< 0.50		200	0.50	0.50	µg/L	1	76134	9/1/2010 3:28:00 PM
',1,2-Trichloroethane	< 0.50		5	0.50	0.50	µg/L	1	76134	9/1/2010 3:28:00 PM
Trichloroethylene	< 0.50		5	0.50	0.50	µg/L	1	76134	9/1/2010 3:28:00 PM
Vinyl chloride	< 0.50		2	0.50	0.50	µg/L	1	76134	9/1/2010 3:28:00 PM
m,p-Xylene	< 0.50			0.50	0.50	µg/L	1	76134	9/1/2010 3:28:00 PM
o-Xylene	< 0.50			0.50	0.50	µg/L	1	76134	9/1/2010 3:28:00 PM
Xylenes, Total	< 0.50		10000	0.50	0.50	µg/L	1	76134	9/1/2010 3:28:00 PM
MONITORED COMPOUNDS [40 CFR §141.40(E) -7/1/1999]									
Chloroform	4.93	A		1.00	1.00	µg/L	1	76134	9/1/2010 3:28:00 PM
Bromodichloromethane	6.71	A		1.00	1.00	µg/L	1	76134	9/1/2010 3:28:00 PM
Dibromochloromethane	6.64	A		1.00	1.00	µg/L	1	76134	9/1/2010 3:28:00 PM
Bromoform	1.45	A		1.00	1.00	µg/L	1	76134	9/1/2010 3:28:00 PM
Dibromomethane	< 0.50	A		0.50	0.50	µg/L	1	76134	9/1/2010 3:28:00 PM
1,3-Dichlorobenzene	< 0.50	A		0.50	0.50	µg/L	1	76134	9/1/2010 3:28:00 PM
1,1-Dichloropropene	< 0.50	A		0.50	0.50	µg/L	1	76134	9/1/2010 3:28:00 PM
1,1-Dichloroethane	< 0.50	A		0.50	0.50	µg/L	1	76134	9/1/2010 3:28:00 PM
1,1,2,2-Tetrachloroethane	< 0.50	A		0.50	0.50	µg/L	1	76134	9/1/2010 3:28:00 PM
1,3-Dichloropropane	< 0.50	A		0.50	0.50	µg/L	1	76134	9/1/2010 3:28:00 PM
Chloromethane	< 0.50	A		0.50	0.50	µg/L	1	76134	9/1/2010 3:28:00 PM
Bromomethane	< 1.00	A		1.00	1.00	µg/L	1	76134	9/1/2010 3:28:00 PM
1,2,3-Trichloropropane	< 1.00	A		1.00	1.00	µg/L	1	76134	9/1/2010 3:28:00 PM
1,1,1,2-Tetrachloroethane	< 0.50	A		0.50	0.50	µg/L	1	76134	9/1/2010 3:28:00 PM
Chloroethane	< 1.00	A		1.00	1.00	µg/L	1	76134	9/1/2010 3:28:00 PM
2,2-Dichloropropane	< 0.50	A		0.50	0.50	µg/L	1	76134	9/1/2010 3:28:00 PM
2-Chlorotoluene	< 0.50	A		0.50	0.50	µg/L	1	76134	9/1/2010 3:28:00 PM
4-Chlorotoluene	< 0.50	A		0.50	0.50	µg/L	1	76134	9/1/2010 3:28:00 PM

alifiers:

A Not Available for Accreditation
B Analyte Detected in Method Blank
E Value Above Quantitation Range
H Holding Time Exceeded
J Analyte Detected Below Quantitation Limits
N Not Accredited
S Spike Recovery Outside Recovery Limits
X Value Exceeds Maximum Contaminant Level (MCL)

PQL: Practical Quantitation Limit

LCRA Environmental Laboratory Services

Date: *07-Sep-10*

CLIENT: CITY OF WICHITA FALLS/ CYPRESS W
Client Sample ID: EP002
Lab ID: 1008B96-003
LAB SINK
Project: WS 2430001
Collection Date: 8/24/2010 2:15:00 PM
Matrix: DRINKING WATER
TCEQ Sample ID: 1038842

Analyses	Result	Qual	MCL	MDL	PQL	Units	DF	BatchID	Date Analyzed
VOLATILES BY GCMS				**E524.2**					Analyst: **SG**
MONITORED COMPOUNDS [40 CFR §141.40(E) -7/1/1999]									
Bromobenzene	< 0.50	A		0.50	0.50	µg/L	1	76134	9/1/2010 3:28:00 PM
cis-1,3-Dichloropropene	< 0.50	A		0.50	0.50	µg/L	1	76134	9/1/2010 3:28:00 PM
trans-1,3-Dichloropropene	< 0.50	A		0.50	0.50	µg/L	1	76134	9/1/2010 3:28:00 PM
SCREENED COMPOUNDS									
1,2-Dibromo-3-chloropropane	< 0.25	A	0.2	0.25	1.00	µg/L	1	76134	9/1/2010 3:28:00 PM
1,2-Dibromoethane	< 0.06	A	0.05	0.06	1.00	µg/L	1	76134	9/1/2010 3:28:00 PM
MONITORED COMPOUNDS [40 CFR §141.40(J) -7/1/1999]									
1,2,4-Trimethylbenzene	< 0.50	A		0.50	0.50	µg/L	1	76134	9/1/2010 3:28:00 PM
1,2,3-Trichlorobenzene	< 0.50	A		0.50	0.50	µg/L	1	76134	9/1/2010 3:28:00 PM
n-Propylbenzene	< 0.50	A		0.50	0.50	µg/L	1	76134	9/1/2010 3:28:00 PM
Butyl benzene	< 0.50	A		0.50	0.50	µg/L	1	76134	9/1/2010 3:28:00 PM
Naphthalene	< 0.50	A		0.50	0.50	µg/L	1	76134	9/1/2010 3:28:00 PM
Hexachlorobutadiene	< 0.50	A		0.50	0.50	µg/L	1	76134	9/1/2010 3:28:00 PM
1,3,5-Trimethylbenzene	< 0.50	A		0.50	0.50	µg/L	1	76134	9/1/2010 3:28:00 PM
4-Isopropyltoluene	< 0.50	A		0.50	0.50	µg/L	1	76134	9/1/2010 3:28:00 PM
Isopropylbenzene	< 0.50	A		0.50	0.50	µg/L	1	76134	9/1/2010 3:28:00 PM
tert-Butylbenzene	< 0.50	A		0.50	0.50	µg/L	1	76134	9/1/2010 3:28:00 PM
ec-Butylbenzene	< 0.50	A		0.50	0.50	µg/L	1	76134	9/1/2010 3:28:00 PM
richlorofluoromethane	< 0.50	A		0.50	0.50	µg/L	1	76134	9/1/2010 3:28:00 PM
Dichlorodifluoromethane	< 1.00	A		1.00	1.00	µg/L	1	76134	9/1/2010 3:28:00 PM
Bromochloromethane	< 0.50	A		0.50	0.50	µg/L	1	76134	9/1/2010 3:28:00 PM
OTHER COMPOUNDS									
Acetone	< 5.00	A		5.00	5.00	µg/L	1	76134	9/1/2010 3:28:00 PM
Acrylonitrile	< 5.00	A		5.00	5.00	µg/L	1	76134	9/1/2010 3:28:00 PM
2-Butanone (MEK)	< 5.00	A		5.00	5.00	µg/L	1	76134	9/1/2010 3:28:00 PM
Carbon Disulfide	< 0.50	A		0.50	0.50	µg/L	1	76134	9/1/2010 3:28:00 PM
Ethyl methacrylate	< 5.00	A		5.00	5.00	µg/L	1	76134	9/1/2010 3:28:00 PM
2-Hexanone	< 5.00	A		5.00	5.00	µg/L	1	76134	9/1/2010 3:28:00 PM
Iodomethane	< 0.50	A		0.50	0.50	µg/L	1	76134	9/1/2010 3:28:00 PM
Methyl methacrylate	< 5.00	A		5.00	5.00	µg/L	1	76134	9/1/2010 3:28:00 PM
4-Methyl-2-pentanone (MIBK)	< 5.00	A		5.00	5.00	µg/L	1	76134	9/1/2010 3:28:00 PM
Methyl tert-butyl ether (MTBE)	< 0.50	A		0.50	0.50	µg/L	1	76134	9/1/2010 3:28:00 PM
Tetrahydrofuran	< 5.00	A		5.00	5.00	µg/L	1	76134	9/1/2010 3:28:00 PM
Vinyl Acetate	< 5.00	A		5.00	5.00	µg/L	1	76134	9/1/2010 3:28:00 PM

alifiers:

A Not Available for Accreditation
B Analyte Detected in Method Blank
E Value Above Quantitation Range
H Holding Time Exceeded
J Analyte Detected Below Quantitation Limits
N Not Accredited
S Spike Recovery Outside Recovery Limits
X Value Exceeds Maximum Contaminant Level (MCL)

PQL: Practical Quantitation Limit

Environmental Laboratory Services
The Solution Lab

March 18, 2011

MARK SOTHERARD
CITY OF WICHITA FALLS/ CYPRESS WATER PLANT
PO BOX 1431
WICHITA FALLS, TX 76307

TEL: (940) 691-1153
FAX

RE: WS 2430001

COC ID.: 99704
Order No.: 1102676

Dear MARK SOTHERARD:

On 2/25/2011, LCRA Environmental Laboratory Services (ELS) received 11 sample(s) for analyses under Lab Order No. 1102676. This final report provides results related only to the sample(s) as received for the above referenced lab order number.

ELS is accredited under the National Environmental Laboratory Accreditation Program (NELAP) and certifies that all reported results meet NELAP requirements, unless otherwise noted. The Case Narrative provides explanations for any deviations, additions to, or exclusions from the method requirements.

This report contains a total of 13 pages (including the cover letter) and may not be reproduced, except in full, without written approval from ELS.

Thank you for selecting ELS for your analytical needs. If you have questions regarding this report, please contact us at (512) 356-6022. We look forward to assisting you again.

Sincerely,

Sandra Green
Project Manager

Certificate: T104704218-10-4

ACCREDITED IN ACCORDANCE WITH nelac

Final Analysis Report

CRA Environmental Laboratory Services

Date: *18-Mar-11*

CLIENT: CITY OF WICHITA FALLS/ CYPRESS W
Lab ID: 1102676-001
Project: WS 2430001
Matrix: DRINKING WATER
Collection Date: 2/22/2011 11:35:00 AM

Facility: EP002
Sample Point: TRT-TAP
Sample Location: LAB SINK
TCEQ Sample ID: 1135950

Analyses	Result	Qual	MCL	LOD	PQL	Units	DF	BatchID	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY				**E300.0**					Analyst: **WR**
Chloride	64.4		300	5.00	5.00	mg/L	5	79968	2/28/2011 10:33:00 PM
Fluoride	0.69		4	0.05	0.05	mg/L	5	79968	2/28/2011 10:33:00 PM
Nitrogen, Nitrate (As N)	0.08		10	0.05	0.05	mg/L	5	79968	2/28/2011 10:33:00 PM
Sulfate	34.6		300	5.00	5.00	mg/L	5	79968	2/28/2011 10:33:00 PM
ALKALINITY				**SM2320 B**					Analyst: **KH**
Alkalinity, Bicarbonate (As CaCO3)	45	A		2	2	mg/L CaCO3	1	79997	3/1/2011
Alkalinity, Carbonate (As CaCO3)	4	A		2	2	mg/L CaCO3	1	79997	3/1/2011
Alkalinity, Hydroxide (As CaCO3)	< 2	A		2	2	mg/L CaCO3	1	79997	3/1/2011
Alkalinity, Phenolphthalein	2	A		2	2	mg/L CaCO3	1	79997	3/1/2011
Alkalinity, Total (As CaCO3)	49	A		2	2	mg/L CaCO3	1	79997	3/1/2011
CONDUCTANCE				**SM2510B**					Analyst: **KH**
Specific Conductance @ 25°C	438			0	0	µmhos/cm	1	79984	3/1/2011
				SM4500-H+-B					Analyst: **KH**
pH @ 25°C [for information only]	7.3	A	8.5	0	0	pH Units	1	79994	3/1/2011
TOTAL DISSOLVED SOLIDS				**SM2540C**					Analyst: **ZP**
Total Dissolved Solids (Residue, Filterable)	235		1000	10.0	25.0	mg/L	10	79965	3/1/2011

ılifiers:

A Not Available for Accreditation
E Value Above Quantitation Range
J Analyte Detected Below Quantitation Limits
S Spike Recovery Outside Recovery Limits
B Analyte Detected in Method Blank
H Holding Time Exceeded
N Not Accredited
X Value Exceeds Maximum Contaminant Level (MCL)

PQL: Practical Quantitation Limit
Values Below PQL Considered Estimated
LOD: Limit of Detection

LCRA Environmental Laboratory Services

Date: *18-Mar-11*

CLIENT: CITY OF WICHITA FALLS/ CYPRESS W
Facility: EP002
ID: 1102676-002
Sample Point: TRT-TAP
Project: WS 2430001
Sample Location: LAB SINK
Matrix: DRINKING WATER
TCEQ Sample ID: 1135945
Collection Date: 2/22/2011 11:34:00 AM

Analyses	Result	Qual	MCL	LOD	PQL	Units	DF	BatchID	Date Analyzed
ICP METALS IN DRINKING WATER				**E200.7**					Analyst: **MV**
Calcium	19.3	A		0.204	0.204	mg/L	1	80315	3/11/2011 11:50:39 AM
Iron	< 0.0510		0.3	0.0510	0.0510	mg/L	1	80315	3/11/2011 11:50:39 AM
Magnesium	6.38			0.204	0.204	mg/L	1	80315	3/11/2011 11:50:39 AM
Sodium	46.9		20000	0.510	0.510	mg/L	1	80315	3/11/2011 11:50:39 AM
ICPMS METALS IN DRINKING WATER				**E200.8**					Analyst: **SW**
Aluminum	0.0214		0.2	0.00130	0.0102	mg/L	1	80289	3/10/2011 3:07:13 PM
Antimony	< 0.000199	J	0.006	0.000199	0.00102	mg/L	1	80289	3/10/2011 3:07:13 PM
Arsenic	0.000299	J	0.01	0.000226	0.00204	mg/L	1	80289	3/10/2011 3:07:13 PM
Barium	0.0252		2	0.000058	0.00204	mg/L	1	80289	3/10/2011 3:07:13 PM
Beryllium	< 0.000043	J	0.004	0.000043	0.00102	mg/L	1	80289	3/10/2011 3:07:13 PM
Cadmium	< 0.000092	J	0.005	0.000092	0.00102	mg/L	1	80289	3/10/2011 3:07:13 PM
Chromium	0.00129		0.1	0.000148	0.00102	mg/L	1	80289	3/10/2011 3:07:13 PM
Copper	0.0108		1.3	0.000116	0.00102	mg/L	1	80289	3/10/2011 3:07:13 PM
Lead	< 0.000055	J	0.015	0.000055	0.00102	mg/L	1	80289	3/10/2011 3:07:13 PM
Manganese	0.000234	J	0.05	0.000028	0.00102	mg/L	1	80289	3/10/2011 3:07:13 PM
Nickel	0.000470	J	0.1	0.000133	0.00102	mg/L	1	80289	3/10/2011 3:07:13 PM
Selenium	< 0.000491	J	0.05	0.000491	0.00408	mg/L	1	80289	3/10/2011 3:07:13 PM
ilver	< 0.000005	J	0.1	0.000005	0.00102	mg/L	1	80289	3/10/2011 3:07:13 PM
Thallium	0.000064	J	0.002	0.000004	0.00102	mg/L	1	80289	3/10/2011 3:07:13 PM
Zinc	0.00708		5	0.000745	0.00408	mg/L	1	80289	3/10/2011 3:07:13 PM
HARDNESS				**SM2340 B**					Analyst: **MV**
Hardness, Calcium/Magnesium (As CaCO3)	74.5	N		1.35	1.35	mg/L	1	80317	3/11/2011
MERCURY IN DW				**E245.1**					Analyst: **AE**
Mercury	< 0.000200		0.002	0.000200	0.000200	mg/L	1	80084	3/3/2011 12:39:00 PM

lifiers:

A Not Available for Accreditation
B Analyte Detected in Method Blank
E Value Above Quantitation Range
H Holding Time Exceeded
J Analyte Detected Below Quantitation Limits
N Not Accredited
S Spike Recovery Outside Recovery Limits
X Value Exceeds Maximum Contaminant Level (MCL)

PQL: Practical Quantitation Limit
Values Below PQL Considered Estimated
LOD: Limit of Detection

LCRA Environmental Laboratory Services

Date: *18-Mar-11*

CLIENT: CITY OF WICHITA FALLS/ CYPRESS W
Facility: EP002
ID: 1102676-003
Sample Point: TRT-TAP
Project: WS 2430001
Sample Location: LAB SINK
Matrix: DRINKING WATER
TCEQ Sample ID: 1135951
Collection Date: 2/22/2011 11:33:00 AM

Analyses	Result	Qual	MCL	LOD	PQL	Units	DF	BatchID	Date Analyzed
CHLORINATED PESTICIDES				**E508.1**		**(E508)**			Analyst: **MS**
PESTICIDES									
Chlordane	< 0.21	J	2	0.21	0.53	µg/L	1	80152	3/5/2011 3:00:48 AM
Toxaphene	< 1.1	J	3	1.1	0.53	µg/L	1	80152	3/5/2011 3:00:48 AM
PCBS									
Aroclor 1016	< 0.08	J	0.5	0.08	0.27	µg/L	1	80152	3/5/2011 3:00:48 AM
Aroclor 1221	< 0.27		0.5	0.27	0.27	µg/L	1	80152	3/5/2011 3:00:48 AM
Aroclor 1232	< 0.27		0.5	0.27	0.27	µg/L	1	80152	3/5/2011 3:00:48 AM
Aroclor 1242	< 0.27		0.5	0.27	0.27	µg/L	1	80152	3/5/2011 3:00:48 AM
Aroclor 1248	< 0.11	J	0.5	0.11	0.27	µg/L	1	80152	3/5/2011 3:00:48 AM
Aroclor 1254	< 0.11	J	0.5	0.11	0.27	µg/L	1	80152	3/5/2011 3:00:48 AM
Aroclor 1260	< 0.21	J	0.5	0.21	0.27	µg/L	1	80152	3/5/2011 3:00:48 AM
ORGANIC COMPOUNDS				**E525.2**		**(E525.2)**			Analyst: **SG**
PESTICIDES									
Alachlor	< 0.11		2	0.11	0.11	µg/L	1	80285	3/3/2011 8:41:00 PM
Aldrin	< 0.11	A		0.11	0.11	µg/L	1	80285	3/3/2011 8:41:00 PM
Atrazine	< 0.11		3	0.11	0.11	µg/L	1	80285	3/3/2011 8:41:00 PM
Bromacil	< 0.21	A		0.21	0.21	µg/L	1	80285	3/3/2011 8:41:00 PM
utachlor	< 0.11	A		0.11	0.11	µg/L	1	80285	3/3/2011 8:41:00 PM
trans-Nonachlor	< 0.11	A		0.11	0.11	µg/L	1	80285	3/3/2011 8:41:00 PM
Dieldrin	< 0.11	A		0.11	0.11	µg/L	1	80285	3/3/2011 8:41:00 PM
Endrin	< 0.01	J	2	0.01	0.11	µg/L	1	80285	3/3/2011 8:41:00 PM
Heptachlor	< 0.04	J	0.4	0.04	0.11	µg/L	1	80285	3/3/2011 8:41:00 PM
Heptachlor epoxide	< 0.02	J	0.2	0.02	0.11	µg/L	1	80285	3/3/2011 8:41:00 PM
Hexachlorobenzene	< 0.11		1	0.11	0.11	µg/L	1	80285	3/3/2011 8:41:00 PM
Hexachlorocyclopentadiene	< 0.11		50	0.11	0.11	µg/L	1	80285	3/3/2011 8:41:00 PM
Lindane	< 0.02	J	0.2	0.02	0.11	µg/L	1	80285	3/3/2011 8:41:00 PM
Methoxychlor	< 0.11		40	0.11	0.11	µg/L	1	80285	3/3/2011 8:41:00 PM
Metolachlor	< 0.11	A		0.11	0.11	µg/L	1	80285	3/3/2011 8:41:00 PM
Metribuzin	< 0.11	A		0.11	0.11	µg/L	1	80285	3/3/2011 8:41:00 PM
Pentachlorophenol	< 0.04	J	1	0.04	1.06	µg/L	1	80285	3/3/2011 8:41:00 PM
Propachlor	< 0.11	A		0.11	0.11	µg/L	1	80285	3/3/2011 8:41:00 PM
Simazine	< 0.07	J	4	0.07	0.11	µg/L	1	80285	3/3/2011 8:41:00 PM
PAHS									
Benzo(a)pyrene	< 0.02	J	0.2	0.02	0.11	µg/L	1	80285	3/3/2011 8:41:00 PM
PHTHALATES									
Di(2-ethylhexyl)adipate	< 0.64	J	400	0.64	2.12	µg/L	1	80285	3/3/2011 8:41:00 PM
Di(2-ethylhexyl)phthalate	< 0.64	J	6	0.64	2.12	µg/L	1	80285	3/3/2011 8:41:00 PM

Qualifiers:

A Not Available for Accreditation
B Analyte Detected in Method Blank
E Value Above Quantitation Range
H Holding Time Exceeded
J Analyte Detected Below Quantitation Limits
N Not Accredited
S Spike Recovery Outside Recovery Limits
X Value Exceeds Maximum Contaminant Level (MCL)

PQL: Practical Quantitation Limit
Values Below PQL Considered Estimated
LOD: Limit of Detection

LCRA Environmental Laboratory Services

Date: *18-Mar-11*

CLIENT: CITY OF WICHITA FALLS/ CYPRESS W
Facility: EP002
Client ID: 1102676-004
Sample Point: TRT-TAP
Project: WS 2430001
Sample Location: LAB SINK
Matrix: DRINKING WATER
TCEQ Sample ID: 1135947
Collection Date: 2/22/2011 11:30:00 AM

Analyses	Result	Qual	MCL	LOD	PQL	Units	DF	BatchID	Date Analyzed
EDB, DBCP, AND 123TCP				**E504.1**		**(E504.1)**		Analyst: **MS**	
REGULATED									
Dibromochloropropane (DBCP)	< 0.02		0.2	0.02	0.02	µg/L	1	79971	3/1/2011 6:48:00 AM
Ethylene dibromide (EDB)	< 0.01	J	0.05	0.01	0.02	µg/L	1	79971	3/1/2011 6:48:00 AM
MONITORED - UNREGULATED									
1,2,3-Trichloropropane	< 0.01	AJ		0.01	0.02	µg/L	1	79971	3/1/2011 6:48:00 AM

Qualifiers:

A Not Available for Accreditation
B Analyte Detected in Method Blank
E Value Above Quantitation Range
H Holding Time Exceeded
J Analyte Detected Below Quantitation Limits
N Not Accredited
S Spike Recovery Outside Recovery Limits
X Value Exceeds Maximum Contaminant Level (MCL)

PQL: Practical Quantitation Limit
Values Below PQL Considered Estimated
LOD: Limit of Detection

LCRA Environmental Laboratory Services

Date: *18-Mar-11*

CLIENT: CITY OF WICHITA FALLS/ CYPRESS W
Facility: EP002
ID: 1102676-011
Sample Point: TRT-TAP
Project: WS 2430001
Sample Location: LAB SINK
Matrix: DRINKING WATER
TCEQ Sample ID: 1135949
Collection Date: 2/22/2011 11:32:00 AM

Analyses	Result	Qual	MCL	LOD	PQL	Units	DF	BatchID	Date Analyzed
CARBAMATES				**E531.1**					Analyst: **BC**
REGULATED									
Aldicarb	< 0.50	J	3	0.50	1.00	µg/L	1	80157	3/7/2011 7:45:58 PM
Aldicarb sulfone	< 0.80	J	2	0.80	1.00	µg/L	1	80157	3/7/2011 7:45:58 PM
Aldicarb sulfoxide	< 0.50	J	4	0.50	1.00	µg/L	1	80157	3/7/2011 7:45:58 PM
Carbofuran	< 0.90	J	40	0.90	1.00	µg/L	1	80157	3/7/2011 7:45:58 PM
Oxamyl	< 1.00		200	1.00	1.00	µg/L	1	80157	3/7/2011 7:45:58 PM
MONITORED - UNREGULATED									
3-Hydroxycarbofuran	< 0.30	AJ		0.30	1.00	µg/L	1	80157	3/7/2011 7:45:58 PM
Baygon	< 0.30	AJ		0.30	1.00	µg/L	1	80157	3/7/2011 7:45:58 PM
Carbaryl	< 0.30	AJ		0.30	1.00	µg/L	1	80157	3/7/2011 7:45:58 PM
Methiocarb	< 0.30	AJ		0.30	1.00	µg/L	1	80157	3/7/2011 7:45:58 PM
Methomyl	< 0.30	AJ		0.30	1.00	µg/L	1	80157	3/7/2011 7:45:58 PM

Qualifiers:

A Not Available for Accreditation
B Analyte Detected in Method Blank
E Value Above Quantitation Range
H Holding Time Exceeded
J Analyte Detected Below Quantitation Limits
N Not Accredited
S Spike Recovery Outside Recovery Limits
X Value Exceeds Maximum Contaminant Level (MCL)

PQL: Practical Quantitation Limit
Values Below PQL Considered Estimated
LOD: Limit of Detection

LCRA Environmental Laboratory Services

Date: *04-Oct-11*

CLIENT: CITY OF WICHITA FALLS/ CYPRESS W
Facility: EP002
LAB ID: 1109A61-007
Sample Point: TRT-TAP
Project: WS 2430001
Sample Location: LAB SINK
Matrix: DRINKING WATER
TCEQ Sample ID: 1166537
Collection Date: 9/21/2011 11:41:00 AM

Analyses	Result	Qual	MCL	LOD	PQL	Units	DF	BatchID	Date Analyzed
VOLATILES BY GCMS				**E524.2**					Analyst: **BC**
REGULATED COMPOUNDS									
Benzene	< 0.50		5	0.50	0.50	µg/L	1	85373	9/28/2011 3:53:00 PM
Carbon Tetrachloride	< 0.50		5	0.50	0.50	µg/L	1	85373	9/28/2011 3:53:00 PM
Monochlorobenzene	< 0.50		100	0.50	0.50	µg/L	1	85373	9/28/2011 3:53:00 PM
o-Dichlorobenzene	< 0.50		600	0.50	0.50	µg/L	1	85373	9/28/2011 3:53:00 PM
para-Dichlorobenzene	< 0.50		75	0.50	0.50	µg/L	1	85373	9/28/2011 3:53:00 PM
1,2-Dichloroethane	< 0.50		5	0.50	0.50	µg/L	1	85373	9/28/2011 3:53:00 PM
1,1-Dichloroethylene	< 0.50		7	0.50	0.50	µg/L	1	85373	9/28/2011 3:53:00 PM
cis-1,2-Dichloroethylene	< 0.50		70	0.50	0.50	µg/L	1	85373	9/28/2011 3:53:00 PM
trans-1,2-Dichloroethylene	< 0.50		100	0.50	0.50	µg/L	1	85373	9/28/2011 3:53:00 PM
1,2-Dichloropropane	< 0.50		5	0.50	0.50	µg/L	1	85373	9/28/2011 3:53:00 PM
Ethylbenzene	< 0.50		700	0.50	0.50	µg/L	1	85373	9/28/2011 3:53:00 PM
Dichloromethane	< 0.50		5	0.50	0.50	µg/L	1	85373	9/28/2011 3:53:00 PM
Styrene	< 0.50		100	0.50	0.50	µg/L	1	85373	9/28/2011 3:53:00 PM
Tetrachloroethylene	< 0.50		5	0.50	0.50	µg/L	1	85373	9/28/2011 3:53:00 PM
Toluene	< 0.50		1000	0.50	0.50	µg/L	1	85373	9/28/2011 3:53:00 PM
?,4-Trichlorobenzene	< 0.50		70	0.50	0.50	µg/L	1	85373	9/28/2011 3:53:00 PM
,1-Trichloroethane	< 0.50		200	0.50	0.50	µg/L	1	85373	9/28/2011 3:53:00 PM
1,1,2-Trichloroethane	< 0.50		5	0.50	0.50	µg/L	1	85373	9/28/2011 3:53:00 PM
Trichloroethylene	< 0.50		5	0.50	0.50	µg/L	1	85373	9/28/2011 3:53:00 PM
Vinyl chloride	< 0.50		2	0.50	0.50	µg/L	1	85373	9/28/2011 3:53:00 PM
m,p-Xylene	< 0.50			0.50	0.50	µg/L	1	85373	9/28/2011 3:53:00 PM
o-Xylene	< 0.50			0.50	0.50	µg/L	1	85373	9/28/2011 3:53:00 PM
Xylenes, Total	< 0.50		10000	0.50	0.50	µg/L	1	85373	9/28/2011 3:53:00 PM
UNREGULATED COMPOUNDS									
Chloroform	3.34	A		1.00	1.00	µg/L	1	85373	9/28/2011 3:53:00 PM
Bromodichloromethane	5.19	A		1.00	1.00	µg/L	1	85373	9/28/2011 3:53:00 PM
Dibromochloromethane	8.53	A		1.00	1.00	µg/L	1	85373	9/28/2011 3:53:00 PM
Bromoform	5.78	A		1.00	1.00	µg/L	1	85373	9/28/2011 3:53:00 PM
Dibromomethane	< 0.50	A		0.50	0.50	µg/L	1	85373	9/28/2011 3:53:00 PM
1,3-Dichlorobenzene	< 0.50	A		0.50	0.50	µg/L	1	85373	9/28/2011 3:53:00 PM
1,1-Dichloropropene	< 0.50	A		0.50	0.50	µg/L	1	85373	9/28/2011 3:53:00 PM
1,1-Dichloroethane	< 0.50	A		0.50	0.50	µg/L	1	85373	9/28/2011 3:53:00 PM
1,1,2,2-Tetrachloroethane	< 0.50	A		0.50	0.50	µg/L	1	85373	9/28/2011 3:53:00 PM
1,3-Dichloropropane	< 0.50	A		0.50	0.50	µg/L	1	85373	9/28/2011 3:53:00 PM
Chloromethane	< 0.50	A		0.50	0.50	µg/L	1	85373	9/28/2011 3:53:00 PM
Bromomethane	< 1.00	A		1.00	1.00	µg/L	1	85373	9/28/2011 3:53:00 PM
1,2,3-Trichloropropane	< 1.00	A		1.00	1.00	µg/L	1	85373	9/28/2011 3:53:00 PM
1,1,1,2-Tetrachloroethane	< 0.50	A		0.50	0.50	µg/L	1	85373	9/28/2011 3:53:00 PM
Chloroethane	< 1.00	A		1.00	1.00	µg/L	1	85373	9/28/2011 3:53:00 PM
2,2-Dichloropropane	< 0.50	A		0.50	0.50	µg/L	1	85373	9/28/2011 3:53:00 PM
2-Chlorotoluene	< 0.50	A		0.50	0.50	µg/L	1	85373	9/28/2011 3:53:00 PM

Qualifiers:

A Not Available for Accreditation
B Analyte Detected in Method Blank
E Value Above Quantitation Range
H Holding Time Exceeded
J Analyte Detected Below Quantitation Limits
N Not Accredited
S Spike Recovery Outside Recovery Limits
X Value Exceeds Maximum Contaminant Level (MCL)

PQL: Practical Quantitation Limit
Values Below PQL Considered Estimated
LOD: Limit of Detection

LCRA Environmental Laboratory Services

Date: *04-Oct-11*

CLIENT: CITY OF WICHITA FALLS/ CYPRESS W
Facility: EP002
Lab ID: 1109A61-007
Sample Point: TRT-TAP
Project: WS 2430001
Sample Location: LAB SINK
Matrix: DRINKING WATER
TCEQ Sample ID: 1166537
Collection Date: 9/21/2011 11:41:00 AM

Analyses	Result	Qual	MCL	LOD	PQL	Units	DF	BatchID	Date Analyzed
VOLATILES BY GCMS				**E524.2**					Analyst: **BC**
UNREGULATED COMPOUNDS									
4-Chlorotoluene	< 0.50	A		0.50	0.50	µg/L	1	85373	9/28/2011 3:53:00 PM
Bromobenzene	< 0.50	A		0.50	0.50	µg/L	1	85373	9/28/2011 3:53:00 PM
cis-1,3-Dichloropropene	< 0.50	A		0.50	0.50	µg/L	1	85373	9/28/2011 3:53:00 PM
trans-1,3-Dichloropropene	< 0.50	A		0.50	0.50	µg/L	1	85373	9/28/2011 3:53:00 PM
1,2,4-Trimethylbenzene	< 0.50	A		0.50	0.50	µg/L	1	85373	9/28/2011 3:53:00 PM
1,2,3-Trichlorobenzene	< 0.50	A		0.50	0.50	µg/L	1	85373	9/28/2011 3:53:00 PM
n-Propylbenzene	< 0.50	A		0.50	0.50	µg/L	1	85373	9/28/2011 3:53:00 PM
Butyl benzene	< 0.50	A		0.50	0.50	µg/L	1	85373	9/28/2011 3:53:00 PM
Naphthalene	< 0.50	A		0.50	0.50	µg/L	1	85373	9/28/2011 3:53:00 PM
Hexachlorobutadiene	< 0.50	A		0.50	0.50	µg/L	1	85373	9/28/2011 3:53:00 PM
1,3,5-Trimethylbenzene	< 0.50	A		0.50	0.50	µg/L	1	85373	9/28/2011 3:53:00 PM
4-Isopropyltoluene	< 0.50	A		0.50	0.50	µg/L	1	85373	9/28/2011 3:53:00 PM
Isopropylbenzene	< 0.50	A		0.50	0.50	µg/L	1	85373	9/28/2011 3:53:00 PM
tert-Butylbenzene	< 0.50	A		0.50	0.50	µg/L	1	85373	9/28/2011 3:53:00 PM
sec-Butylbenzene	< 0.50	A		0.50	0.50	µg/L	1	85373	9/28/2011 3:53:00 PM
Trichlorofluoromethane	< 0.50	A		0.50	0.50	µg/L	1	85373	9/28/2011 3:53:00 PM
Dichlorodifluoromethane	< 1.00	A		1.00	1.00	µg/L	1	85373	9/28/2011 3:53:00 PM
Bromochloromethane	< 0.50	A		0.50	0.50	µg/L	1	85373	9/28/2011 3:53:00 PM
Acetone	< 5.00	A		5.00	5.00	µg/L	1	85373	9/28/2011 3:53:00 PM
Acrylonitrile	< 5.00	A		5.00	5.00	µg/L	1	85373	9/28/2011 3:53:00 PM
2-Butanone (MEK)	< 5.00	A		5.00	5.00	µg/L	1	85373	9/28/2011 3:53:00 PM
Carbon Disulfide	< 0.50	A		0.50	0.50	µg/L	1	85373	9/28/2011 3:53:00 PM
Ethyl methacrylate	< 5.00	A		5.00	5.00	µg/L	1	85373	9/28/2011 3:53:00 PM
2-Hexanone	< 5.00	A		5.00	5.00	µg/L	1	85373	9/28/2011 3:53:00 PM
Iodomethane	< 0.50	A		0.50	0.50	µg/L	1	85373	9/28/2011 3:53:00 PM
Methyl methacrylate	< 5.00	A		5.00	5.00	µg/L	1	85373	9/28/2011 3:53:00 PM
4-Methyl-2-pentanone (MIBK)	< 5.00	A		5.00	5.00	µg/L	1	85373	9/28/2011 3:53:00 PM
Methyl tert-butyl ether (MTBE)	< 0.50	A		0.50	0.50	µg/L	1	85373	9/28/2011 3:53:00 PM
Tetrahydrofuran	< 5.00	A		5.00	5.00	µg/L	1	85373	9/28/2011 3:53:00 PM
Vinyl Acetate	< 5.00	A		5.00	5.00	µg/L	1	85373	9/28/2011 3:53:00 PM

Qualifiers:

A Not Available for Accreditation
B Analyte Detected in Method Blank
E Value Above Quantitation Range
H Holding Time Exceeded
J Analyte Detected Below Quantitation Limits
N Not Accredited
S Spike Recovery Outside Recovery Limits
X Value Exceeds Maximum Contaminant Level (MCL)

PQL: Practical Quantitation Limit
Values Below PQL Considered Estimated
LOD: Limit of Detection

TEXAS Department of State Health Services

Texas Department of State Health Services

LABORATORY SERVICES SECTION, MC-1947
1100 W. 49th St., Austin, Tx. 78756 (512)458-7587

PO BOX 149347
AUSTIN, TEXAS 78714-9347
1-888-963-7111
www.dshs.state.tx.us

*RAD-GRAB
Analysis Report

Submitter Identification Number: 2430001

CITY OF WICHITA FALLS
ATTN: MARK SOUTHARD - WATER PURIFI
PO BOX 1431
WICHITA FALLS, TX 76307-1431

Date Reported : 07/28/2011
Report ID# : 20110728112958AB48914

Lab Sample ID# : AB48914
Sample Priority : NORMAL
TCEQ ID#(s) : 1135946

Water Source :
Entry Point(s) : EP002

Date Collected : 02/22/2011 11:36
Date Received : 02/25/2011

Sample Cond. : Acceptable

Analyte	Result	Uncertainty	MDA	Unit	Yield	Method	Date Analyzed	Analys
Gross Alpha [1]	<2.0		0.44	pCi/L		EPA 900.0	05/20/2011	DS
Gross Beta [1]	5.5	1.1		pCi/L		EPA 900.0	05/20/2011	DS
Radium-228 [1]	<1.0		0.52	pCi/L	0.752	SM 7500-Ra D	07/11/2011	SG

Comments:

Gross alpha activity possibly bias low due to matrix. The test results on this report relate only to the sample identified on this report. The test results for analytes noted([1]) meet all NELAC (2003 Standard) requirements.

Authorized by Team Lead JRATHBONE on 07/26/2011

Final Analysis Report

LCRA Environmental Laboratory Services

Date: *04-Jun-12*

CLIENT: CITY OF WICHITA FALLS/ CYPRESS
Lab ID: 1205609-001
Project: WS 2430001
Matrix: DRINKING WATER
Collection Date: 5/16/2012 12:24:00 PM

Facility: EP002
Sample Point: TRT-TAP
Sample Location: LAB SINK
TCEQ Sample ID: 1217209

Analyses	Result	Qual	MCL	LOD	PQL	Units	DF	BatchID	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY				**E300.0**					Analyst: **WR**
Chloride	161		300	5.00	5.00	mg/L	5	90993	5/21/2012 6:34:00 PM
Fluoride	0.85		4	0.05	0.05	mg/L	5	90993	5/21/2012 6:34:00 PM
Nitrogen, Nitrate (As N)	0.14		10	0.05	0.05	mg/L	5	90993	5/21/2012 6:34:00 PM
Sulfate	29.1		300	5.00	5.00	mg/L	5	90993	5/21/2012 6:34:00 PM
ALKALINITY				**SM2320 B**					Analyst: **KH**
Alkalinity, Bicarbonate (As CaCO3)	42	A		2	2	mg/L CaCO3	1	91100	5/24/2012
Alkalinity, Carbonate (As CaCO3)	< 2	A		2	2	mg/L CaCO3	1	91100	5/24/2012
Alkalinity, Hydroxide (As CaCO3)	< 2	A		2	2	mg/L CaCO3	1	91100	5/24/2012
Alkalinity, Phenolphthalein	< 2	A		2	2	mg/L CaCO3	1	91100	5/24/2012
Alkalinity, Total (As CaCO3)	43	A		2	2	mg/L CaCO3	1	91100	5/24/2012
CONDUCTANCE				**SM2510B**					Analyst: **KH**
Specific Conductance @ 25°C	723			0	0	µmhos/cm	1	91067	5/24/2012
PH				**SM4500-H+B**					Analyst: **KH**
pH @ 25°C [for information only]	8.8	XA	8.5	0	0	pH Units	1	90969	5/21/2012
TOTAL DISSOLVED SOLIDS				**SM2540C**					Analyst: **ZP**
Total Dissolved Solids (Residue, Filterable)	370		1000	10.0	25.0	mg/L	10	90919	5/18/2012

Qualifiers:

A Not Available for Accreditation
B Analyte Detected in Method Blank
E Value Above Quantitation Range
H Holding Time Exceeded
J Analyte Detected Below Quantitation Limits
N Not Accredited
S Spike Recovery Outside Recovery Limits
X Value Exceeds Maximum Contaminant Level (MCL)

PQL: Practical Quantitation Limit
Values Below PQL Considered Estimated
LOD: Limit of Detection

LCRA Environmental Laboratory Services

Date: *04-Jun-12*

CLIENT: CITY OF WICHITA FALLS/ CYPRESS
Lab ID: 1205609-002
Project: WS 2430001
Matrix: DRINKING WATER
Collection Date: 5/16/2012 12:25:00 PM

Facility: EP002
Sample Point: TRT-TAP
Sample Location: LAB SINK
TCEQ Sample ID: 1231229

Analyses	Result	Qual	MCL	LOD	PQL	Units	DF	BatchID	Date Analyzed
ICP METALS IN DRINKING WATER				**E200.7**					Analyst: **MV**
Sodium	96.8		20000	0.500	0.500	mg/L	1	91188	5/30/2012 1:06:18 PM

Qualifiers:

A Not Available for Accreditation
E Value Above Quantitation Range
J Analyte Detected Below Quantitation Limits
S Spike Recovery Outside Recovery Limits
B Analyte Detected in Method Blank
H Holding Time Exceeded
N Not Accredited
X Value Exceeds Maximum Contaminant Level (MCL)

PQL: Practical Quantitation Limit
Values Below PQL Considered Estimated
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LCRA Environmental Laboratory Services

Date: *04-Jun-12*

CLIENT: CITY OF WICHITA FALLS/ CYPRESS
Lab ID: 1205609-004
Project: WS 2430001
Matrix: DRINKING WATER
Collection Date: 5/16/2012 12:26:00 PM

Facility: EP002
Sample Point: TRT-TAP
Sample Location: LAB SINK
TCEQ Sample ID: 1216600

Analyses	Result	Qual	MCL	LOD	PQL	Units	DF	BatchID	Date Analyzed
CHLORINATED PESTICIDES				**E508.1**		**(E508)**			Analyst: **MS**
PCBS									
Aroclor 1016	< 0.09	J	0.5	0.09	0.27	µg/L	1	91180	5/30/2012 12:05:00 AM
Aroclor 1221	< 0.27		0.5	0.27	0.27	µg/L	1	91180	5/30/2012 12:05:00 AM
Aroclor 1232	< 0.27		0.5	0.27	0.27	µg/L	1	91180	5/30/2012 12:05:00 AM
Aroclor 1242	< 0.27		0.5	0.27	0.27	µg/L	1	91180	5/30/2012 12:05:00 AM
Aroclor 1248	< 0.11	J	0.5	0.11	0.27	µg/L	1	91180	5/30/2012 12:05:00 AM
Aroclor 1254	< 0.11	J	0.5	0.11	0.27	µg/L	1	91180	5/30/2012 12:05:00 AM
PESTICIDES									
Chlordane	< 0.21	J	2	0.21	0.54	µg/L	1	91180	5/30/2012 12:05:00 AM
PCBS									
Aroclor 1260	< 0.21	J	0.5	0.21	0.27	µg/L	1	91180	5/30/2012 12:05:00 AM
PESTICIDES									
Toxaphene	< 1.1	J	3	1.1	0.54	µg/L	1	91180	5/30/2012 12:05:00 AM
ORGANIC COMPOUNDS				**E525.2**		**(E525.2)**			Analyst: **MS**
PESTICIDES									
Alachlor	< 0.11		2	0.11	0.11	µg/L	1	91081	5/24/2012 3:04:00 PM
Aldrin	< 0.11	A		0.11	0.11	µg/L	1	91081	5/24/2012 3:04:00 PM
Atrazine	< 0.11		3	0.11	0.11	µg/L	1	91081	5/24/2012 3:04:00 PM
Bromacil	< 0.21	A		0.21	0.21	µg/L	1	91081	5/24/2012 3:04:00 PM
Butachlor	< 0.11	A		0.11	0.11	µg/L	1	91081	5/24/2012 3:04:00 PM
trans-Nonachlor	< 0.11	A		0.11	0.11	µg/L	1	91081	5/24/2012 3:04:00 PM
Dieldrin	< 0.11	A		0.11	0.11	µg/L	1	91081	5/24/2012 3:04:00 PM
Endrin	< 0.01	J	2	0.01	0.11	µg/L	1	91081	5/24/2012 3:04:00 PM
Heptachlor	< 0.04	J	0.4	0.04	0.11	µg/L	1	91081	5/24/2012 3:04:00 PM
Heptachlor epoxide	< 0.02	J	0.2	0.02	0.11	µg/L	1	91081	5/24/2012 3:04:00 PM
Hexachlorobenzene	< 0.11		1	0.11	0.11	µg/L	1	91081	5/24/2012 3:04:00 PM
Hexachlorocyclopentadiene	< 0.11		50	0.11	0.11	µg/L	1	91081	5/24/2012 3:04:00 PM
Lindane	< 0.02	J	0.2	0.02	0.11	µg/L	1	91081	5/24/2012 3:04:00 PM
Methoxychlor	< 0.11		40	0.11	0.11	µg/L	1	91081	5/24/2012 3:04:00 PM
Metolachlor	< 0.11	A		0.11	0.11	µg/L	1	91081	5/24/2012 3:04:00 PM
Metribuzin	< 0.11	A		0.11	0.11	µg/L	1	91081	5/24/2012 3:04:00 PM
Pentachlorophenol	< 0.04	J	1	0.04	0.54	µg/L	1	91081	5/24/2012 3:04:00 PM
Propachlor	< 0.11	A		0.11	0.11	µg/L	1	91081	5/24/2012 3:04:00 PM
Simazine	< 0.08	J	4	0.08	0.11	µg/L	1	91081	5/24/2012 3:04:00 PM
PAHS									
Benzo(a)pyrene	< 0.02	J	0.2	0.02	0.11	µg/L	1	91081	5/24/2012 3:04:00 PM
PHTHALATES									
Di(2-ethylhexyl)adipate	< 0.64	J	400	0.64	2.15	µg/L	1	91081	5/24/2012 3:04:00 PM
Di(2-ethylhexyl)phthalate	< 0.64	J	6	0.64	2.15	µg/L	1	91081	5/24/2012 3:04:00 PM

Qualifiers:

A Not Available for Accreditation
B Analyte Detected in Method Blank
E Value Above Quantitation Range
H Holding Time Exceeded
J Analyte Detected Below Quantitation Limits
N Not Accredited
S Spike Recovery Outside Recovery Limits
X Value Exceeds Maximum Contaminant Level (MCL)

PQL: Practical Quantitation Limit
Values Below PQL Considered Estimated
LOD: Limit of Detection

LCRA Environmental Laboratory Services

Date: *25-Sep-12*

CLIENT: CITY OF WICHITA FALLS/ CYPRESS W
Facility: EP002
Lab ID: 1209458-004
Sample Point: TRT-TAP
Project: WS 2430001
Sample Location: LAB SINK
Matrix: DRINKING WATER
TCEQ Sample ID: 1228637
Collection Date: 9/12/2012 1:35:00 PM

Analyses	Result	Qual	MCL	LOD	PQL	Units	DF	BatchID	Date Analyzed
VOLATILES BY GCMS				**E524.2**					Analyst: **BC**
REGULATED COMPOUNDS									
Benzene	< 0.50		5	0.50	0.50	µg/L	1	94133	9/17/2012 2:56:00 PM
Carbon Tetrachloride	< 0.50		5	0.50	0.50	µg/L	1	94133	9/17/2012 2:56:00 PM
Monochlorobenzene	< 0.50		100	0.50	0.50	µg/L	1	94133	9/17/2012 2:56:00 PM
o-Dichlorobenzene	< 0.50		600	0.50	0.50	µg/L	1	94133	9/17/2012 2:56:00 PM
para-Dichlorobenzene	< 0.50		75	0.50	0.50	µg/L	1	94133	9/17/2012 2:56:00 PM
1,2-Dichloroethane	< 0.50		5	0.50	0.50	µg/L	1	94133	9/17/2012 2:56:00 PM
1,1-Dichloroethylene	< 0.50		7	0.50	0.50	µg/L	1	94133	9/17/2012 2:56:00 PM
cis-1,2-Dichloroethylene	< 0.50		70	0.50	0.50	µg/L	1	94133	9/17/2012 2:56:00 PM
trans-1,2-Dichloroethylene	< 0.50		100	0.50	0.50	µg/L	1	94133	9/17/2012 2:56:00 PM
1,2-Dichloropropane	< 0.50		5	0.50	0.50	µg/L	1	94133	9/17/2012 2:56:00 PM
Ethylbenzene	< 0.50		700	0.50	0.50	µg/L	1	94133	9/17/2012 2:56:00 PM
Dichloromethane	< 0.50		5	0.50	0.50	µg/L	1	94133	9/17/2012 2:56:00 PM
Styrene	< 0.50		100	0.50	0.50	µg/L	1	94133	9/17/2012 2:56:00 PM
Tetrachloroethylene	< 0.50		5	0.50	0.50	µg/L	1	94133	9/17/2012 2:56:00 PM
Toluene	< 0.50		1000	0.50	0.50	µg/L	1	94133	9/17/2012 2:56:00 PM
1,2,4-Trichlorobenzene	< 0.50		70	0.50	0.50	µg/L	1	94133	9/17/2012 2:56:00 PM
1,1,1-Trichloroethane	< 0.50		200	0.50	0.50	µg/L	1	94133	9/17/2012 2:56:00 PM
1,1,2-Trichloroethane	< 0.50		5	0.50	0.50	µg/L	1	94133	9/17/2012 2:56:00 PM
Trichloroethylene	< 0.50		5	0.50	0.50	µg/L	1	94133	9/17/2012 2:56:00 PM
Vinyl chloride	< 0.50		2	0.50	0.50	µg/L	1	94133	9/17/2012 2:56:00 PM
m,p-Xylene	< 0.50			0.50	0.50	µg/L	1	94133	9/17/2012 2:56:00 PM
o-Xylene	< 0.50			0.50	0.50	µg/L	1	94133	9/17/2012 2:56:00 PM
Xylenes, Total	< 0.50		10000	0.50	0.50	µg/L	1	94133	9/17/2012 2:56:00 PM
UNREGULATED COMPOUNDS									
Chloroform	5.13	A		1.00	1.00	µg/L	1	94133	9/17/2012 2:56:00 PM
Bromodichloromethane	7.94	A		1.00	1.00	µg/L	1	94133	9/17/2012 2:56:00 PM
Dibromochloromethane	11.97	A		1.00	1.00	µg/L	1	94133	9/17/2012 2:56:00 PM
Bromoform	17.34	A		1.00	1.00	µg/L	1	94133	9/17/2012 2:56:00 PM
Dibromomethane	< 0.50	A		0.50	0.50	µg/L	1	94133	9/17/2012 2:56:00 PM
1,3-Dichlorobenzene	< 0.50	A		0.50	0.50	µg/L	1	94133	9/17/2012 2:56:00 PM
1,1-Dichloropropene	< 0.50	A		0.50	0.50	µg/L	1	94133	9/17/2012 2:56:00 PM
1,1-Dichloroethane	< 0.50	A		0.50	0.50	µg/L	1	94133	9/17/2012 2:56:00 PM
1,1,2,2-Tetrachloroethane	< 0.50	A		0.50	0.50	µg/L	1	94133	9/17/2012 2:56:00 PM
1,3-Dichloropropane	< 0.50	A		0.50	0.50	µg/L	1	94133	9/17/2012 2:56:00 PM
Chloromethane	< 0.50	A		0.50	0.50	µg/L	1	94133	9/17/2012 2:56:00 PM
Bromomethane	< 1.00	A		1.00	1.00	µg/L	1	94133	9/17/2012 2:56:00 PM
1,2,3-Trichloropropane	< 1.00	A		1.00	1.00	µg/L	1	94133	9/17/2012 2:56:00 PM
1,1,1,2-Tetrachloroethane	< 0.50	A		0.50	0.50	µg/L	1	94133	9/17/2012 2:56:00 PM
Chloroethane	< 1.00	A		1.00	1.00	µg/L	1	94133	9/17/2012 2:56:00 PM
2,2-Dichloropropane	< 0.50	A		0.50	0.50	µg/L	1	94133	9/17/2012 2:56:00 PM
2-Chlorotoluene	< 0.50	A		0.50	0.50	µg/L	1	94133	9/17/2012 2:56:00 PM

Qualifiers:

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H Holding Time Exceeded
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Sample Location: LAB SINK
Matrix: DRINKING WATER
TCEQ Sample ID: 1228637
Collection Date: 9/12/2012 1:35:00 PM

Analyses	Result	Qual	MCL	LOD	PQL	Units	DF	BatchID	Date Analyzed
VOLATILES BY GCMS				**E524.2**					Analyst: **BC**
UNREGULATED COMPOUNDS									
4-Chlorotoluene	< 0.50	A		0.50	0.50	µg/L	1	94133	9/17/2012 2:56:00 PM
Bromobenzene	< 0.50	A		0.50	0.50	µg/L	1	94133	9/17/2012 2:56:00 PM
cis-1,3-Dichloropropene	< 0.50	A		0.50	0.50	µg/L	1	94133	9/17/2012 2:56:00 PM
trans-1,3-Dichloropropene	< 0.50	A		0.50	0.50	µg/L	1	94133	9/17/2012 2:56:00 PM
1,2,4-Trimethylbenzene	< 0.50	A		0.50	0.50	µg/L	1	94133	9/17/2012 2:56:00 PM
1,2,3-Trichlorobenzene	< 0.50	A		0.50	0.50	µg/L	1	94133	9/17/2012 2:56:00 PM
n-Propylbenzene	< 0.50	A		0.50	0.50	µg/L	1	94133	9/17/2012 2:56:00 PM
Butyl benzene	< 0.50	A		0.50	0.50	µg/L	1	94133	9/17/2012 2:56:00 PM
Naphthalene	< 0.50	A		0.50	0.50	µg/L	1	94133	9/17/2012 2:56:00 PM
Hexachlorobutadiene	< 0.50	A		0.50	0.50	µg/L	1	94133	9/17/2012 2:56:00 PM
1,3,5-Trimethylbenzene	< 0.50	A		0.50	0.50	µg/L	1	94133	9/17/2012 2:56:00 PM
4-Isopropyltoluene	< 0.50	A		0.50	0.50	µg/L	1	94133	9/17/2012 2:56:00 PM
Isopropylbenzene	< 0.50	A		0.50	0.50	µg/L	1	94133	9/17/2012 2:56:00 PM
tert-Butylbenzene	< 0.50	A		0.50	0.50	µg/L	1	94133	9/17/2012 2:56:00 PM
sec-Butylbenzene	< 0.50	A		0.50	0.50	µg/L	1	94133	9/17/2012 2:56:00 PM
Trichlorofluoromethane	< 0.50	A		0.50	0.50	µg/L	1	94133	9/17/2012 2:56:00 PM
Dichlorodifluoromethane	< 1.00	A		1.00	1.00	µg/L	1	94133	9/17/2012 2:56:00 PM
Bromochloromethane	< 0.50	A		0.50	0.50	µg/L	1	94133	9/17/2012 2:56:00 PM
Acetone	5.11	A		5.00	5.00	µg/L	1	94133	9/17/2012 2:56:00 PM
Acrylonitrile	< 5.00	A		5.00	5.00	µg/L	1	94133	9/17/2012 2:56:00 PM
2-Butanone (MEK)	< 5.00	A		5.00	5.00	µg/L	1	94133	9/17/2012 2:56:00 PM
Carbon Disulfide	< 0.50	A		0.50	0.50	µg/L	1	94133	9/17/2012 2:56:00 PM
Ethyl methacrylate	< 5.00	A		5.00	5.00	µg/L	1	94133	9/17/2012 2:56:00 PM
2-Hexanone	< 5.00	A		5.00	5.00	µg/L	1	94133	9/17/2012 2:56:00 PM
Iodomethane	< 0.50	A		0.50	0.50	µg/L	1	94133	9/17/2012 2:56:00 PM
Methyl methacrylate	< 5.00	A		5.00	5.00	µg/L	1	94133	9/17/2012 2:56:00 PM
4-Methyl-2-pentanone (MIBK)	< 5.00	A		5.00	5.00	µg/L	1	94133	9/17/2012 2:56:00 PM
Methyl tert-butyl ether (MTBE)	< 0.50	A		0.50	0.50	µg/L	1	94133	9/17/2012 2:56:00 PM
Tetrahydrofuran	< 5.00	A		5.00	5.00	µg/L	1	94133	9/17/2012 2:56:00 PM
Vinyl Acetate	< 5.00	A		5.00	5.00	µg/L	1	94133	9/17/2012 2:56:00 PM

Qualifiers:

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Values Below PQL Considered Estimated
LOD: Limit of Detection

APPENDIX B

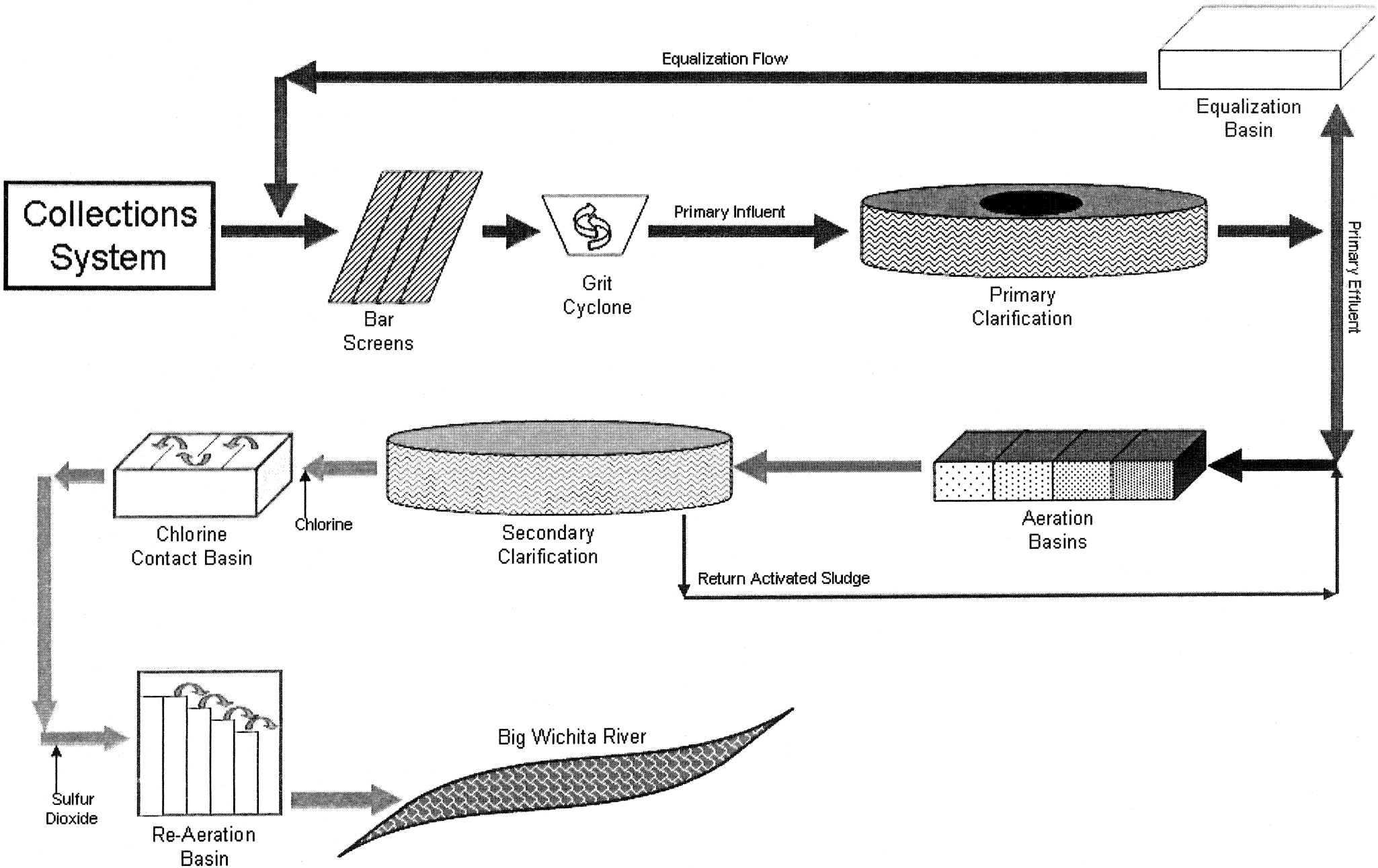
RRWWTP Flow Diagram

TPDES Permit

210 Reclaim Water Authorization

Pre-Treatment Program

River Road Wastewater Treatment Plant (RRWWTP)
Permit ID: TX0047686



Bryan W. Shaw, Ph.D., *Chairman*
Buddy Garcia, *Commissioner*
Carlos Rubinstein, *Commissioner*
Mark R. Vickery, P.G., *Executive Director*

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

December 7, 2010

Mr. Daniel K. Nix
City of Wichita Falls
P.O. Box 1431
Wichita Falls, Texas 76307

Re: City of Wichita Falls, TPDES Permit No. WQ0010509001
(RN101611275; CN600129316)

Dear Mr. Nix:

Enclosed is a copy of the above referenced permit for a wastewater treatment facility issued on behalf of the Executive Director pursuant to Chapter 26 of the Texas Water Code.

If you are receiving a Texas Pollutant Discharge Elimination System (TPDES) discharge permit and your system is a new facility or an existing facility that has been reporting to the Texas Commission on Environmental Quality (TCEQ), you may comply with self-reporting requirements by submitting discharge monitoring reports (DMR) electronically over the Web through STEERS (see enclosed flyer). Information about the electronic DMR (NetDMR) system is available at www.tceq.state.tx.us/goto/NetDMR. We encourage electronic reporting. Discharge facilities that do not use the NetDMR system will receive paper DMR forms and instructions from the TCEQ Enforcement Division or from the U.S. Environmental Protection Agency (EPA) if the facility has been submitting DMRs to EPA.

If you are receiving a land application (no discharge) permit and are required to report monitoring results, self-reporting forms and instructions will be forwarded to you by the TCEQ Enforcement Division.

Enclosed is a "Notification of Completion of Wastewater Treatment Facilities" form. Use this form when the facility begins to operate or goes into a new phase. The form notifies the agency when the proposed facility is completed or when it is placed in operation. This notification complies with the special provision incorporated into the permit. When the agency receives this form, the appropriate permit requirements will be activated in the compliance system database so that accurate monitoring and reporting can occur.

Should you have any questions, please contact Mr. Bijaya Chalise of the TCEQ's Wastewater Permitting Section at (512) 239-4671 or if by correspondence, include MC 148 in the letterhead address at the bottom of the previous page.

Sincerely,

Charles W. Maguire, Director
Water Quality Division
Texas Commission on Environmental Quality

CWM/BC/evm

Enclosures

cc: TCEQ, Region 3

Bryan W. Shaw, Ph.D., *Chairman*
Buddy Garcia, *Commissioner*
Carlos Rubinstein, *Commissioner*
Mark R. Vickery, P.G., *Executive Director*

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

December 7, 2010

Daniel K. Nix
City of Wichita Falls
P. O. Box 1431
Wichita Falls, Texas 76307

RE: City of Wichita Falls
Permit No. WQ0010509001

This letter is your notice that the Texas Commission on Environmental Quality (TCEQ) executive director (ED) has issued final approval of the above-named application. According to 30 Texas Administrative Code (TAC) Section 50.135 the approval became effective on the date the ED signed the permit or other approval. A copy of the final approval is enclosed and cites the effective date.

You may file a **motion to overturn** with the chief clerk. A motion to overturn is a request for the commission to review the TCEQ executive director's approval of the application. Any motion must explain why the commission should review the TCEQ executive director's action. According to 30 TAC Section 50.139 an action by the ED is not affected by a motion to overturn filed under this section unless expressly ordered by the commission.

A motion to overturn must be received by the chief clerk within 23 days after the date of this letter. An original and 7 copies of a motion must be filed with the chief clerk in person or by mail. The Chief Clerk's mailing address is Office of the Chief Clerk (MC 105), TCEQ, P.O. Box 13087, Austin, Texas 78711-3087. On the same day the motion is transmitted to the chief clerk, please provide copies to Robert Martinez, Environmental Law Division Director (MC 173), and Blas Coy, Public Interest Counsel (MC 103), both at the same TCEQ address listed above. If a motion is not acted on by the commission within 45 days after the date of this letter, then the motion shall be deemed overruled.

You may also request **judicial review** of the ED's approval. According to Texas Water Code Section 5.351 a person affected by the ED's approval must file a petition appealing the ED's approval in Travis County district court within 30 days after the effective date of the approval. Even if you request judicial review, you still must exhaust your administrative remedies, which includes filing a motion to overturn in accordance with the previous paragraphs.

Individual members of the public may seek further information by calling the TCEQ Office of Public Assistance, toll free, at 1-800-687-4040.

Sincerely,

LaDonna Castañuela

LaDonna Castañuela
Chief Clerk

LDC/ka

cc: Blas Coy, TCEQ Public Interest Counsel (MC 103)

TPDES PERMIT NO. WQ0010509001
For TCEQ office use only - EPA I.D. No. TX0047686

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
P.O. Box 13087
Austin, Texas 78711-3087

This is a renewal that replaces TPDES Permit No. WQ0010509001 issued May 10, 2007.

PERMIT TO DISCHARGE WASTES
under provisions of
Section 402 of the Clean Water Act
and Chapter 26 of the Texas Water Code

City of Wichita Falls

whose mailing address is

P. O. Box 1431
Wichita Falls, Texas 76307

is authorized to treat and discharge wastes from the River Road Wastewater Treatment Facility, SIC Code 4952

located immediately south of River Road and approximately 1,000 feet northeast of the intersection of River Road and Rosewood Street in the City of Wichita Falls in Wichita County, Texas 76305

to Wichita River Below Diversion Lake in Segment No. 0214 of the Red River Basin

only according with effluent limitations, monitoring requirements and other conditions set forth in this permit, as well as the rules of the Texas Commission on Environmental Quality (TCEQ), the laws of the State of Texas, and other orders of the TCEQ. The issuance of this permit does not grant to the permittee the right to use private or public property for conveyance of wastewater along the discharge route described in this permit. This includes, but is not limited to, property belonging to any individual, partnership, corporation, or other entity. Neither does this permit authorize any invasion of personal rights nor any violation of federal, state, or local laws or regulations. It is the responsibility of the permittee to acquire property rights as may be necessary to use the discharge route.

This permit shall expire at midnight, **December 1, 2015.**

ISSUED DATE: DEC 02 2010

For the Commission

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS Outfall Number 001

1. During the period beginning upon the date of issuance and lasting through the date of expiration, the permittee is authorized to discharge subject to the following effluent limitations:

   The annual average flow of effluent shall not exceed 19.91 million gallons per day (MGD); nor shall the average discharge during any two-hour period (2-hour peak) exceed 30,458 gallons per minute (gpm).

Effluent Characteristic	Discharge Limitations				Minimum Self-Monitoring Requirements	
	Daily Avg	7-day Avg	Daily Max	Single Grab	Report Daily Avg. & Daily Max.	
	mg/l(lbs/day)	mg/l	mg/l	mg/l	Measurement Frequency	Sample Type
Flow, MGD	Report	N/A	Report	N/A	Continuous	Totalizing Meter
Carbonaceous Biochemical Oxygen Demand (5-day)	10 (1,661)	15	25	35	One/day	Composite
Total Suspended Solids	15 (2,491)	25	40	60	One/day	Composite
Ammonia Nitrogen	3 (498)	5	7	15	One/day	Composite
E. coli, CFU or MPN/100 ml	126	N/A	394	N/A	Five/week	Grab

2. The effluent shall contain a chlorine residual of at least 1.0 mg/l after a detention time of at least 20 minutes (based on peak flow) and shall be monitored daily by grab sample. The permittee shall dechlorinate the chlorinated effluent to less than 0.1 mg/l chlorine residual and shall monitor chlorine residual daily by grab sample after the dechlorination process. An equivalent method of disinfection may be substituted only with prior approval of the Executive Director.

3. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored once per day by grab sample.

4. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.

5. Effluent monitoring samples shall be taken at the following location(s): Following the final treatment unit.

6. The effluent shall contain a minimum dissolved oxygen of 4.0 mg/l and shall be monitored once per day by grab sample.

7. The annual average flow and maximum 2-hour peak flow shall be reported monthly.

DEFINITIONS AND STANDARD PERMIT CONDITIONS

As required by Title 30 Texas Administrative Code (TAC) Chapter 305, certain regulations appear as standard conditions in waste discharge permits. 30 TAC § 305.121 - 305.129 (relating to Permit Characteristics and Conditions) as promulgated under the Texas Water Code (TWC) §§ 5.103 and 5.105, and the Texas Health and Safety Code (THSC) §§ 361.017 and 361.024(a), establish the characteristics and standards for waste discharge permits, including sewage sludge, and those sections of 40 Code of Federal Regulations (CFR) Part 122 adopted by reference by the Commission. The following text includes these conditions and incorporates them into this permit. All definitions in TWC § 26.001 and 30 TAC Chapter 305 shall apply to this permit and are incorporated by reference. Some specific definitions of words or phrases used in this permit are as follows:

1. Flow Measurements

   a. Annual average flow - the arithmetic average of all daily flow determinations taken within the preceding 12 consecutive calendar months. The annual average flow determination shall consist of daily flow volume determinations made by a totalizing meter, charted on a chart recorder and limited to major domestic wastewater discharge facilities with one million gallons per day or greater permitted flow.

   b. Daily average flow - the arithmetic average of all determinations of the daily flow within a period of one calendar month. The daily average flow determination shall consist of determinations made on at least four separate days. If instantaneous measurements are used to determine the daily flow, the determination shall be the arithmetic average of all instantaneous measurements taken during that month. Daily average flow determination for intermittent discharges shall consist of a minimum of three flow determinations on days of discharge.

   c. Daily maximum flow - the highest total flow for any 24-hour period in a calendar month.

   d. Instantaneous flow - the measured flow during the minimum time required to interpret the flow measuring device.

   e. 2-hour peak flow (domestic wastewater treatment plants) - the maximum flow sustained for a two-hour period during the period of daily discharge. The average of multiple measurements of instantaneous maximum flow within a two-hour period may be used to calculate the 2-hour peak flow.

   f. Maximum 2-hour peak flow (domestic wastewater treatment plants) - the highest 2-hour peak flow for any 24-hour period in a calendar month.

2. Concentration Measurements

   a. Daily average concentration - the arithmetic average of all effluent samples, composite or grab as required by this permit, within a period of one calendar month, consisting of at least four separate representative measurements.

      i. For domestic wastewater treatment plants - When four samples are not available in a calendar month, the arithmetic average (weighted by flow) of all values in the previous four consecutive month period consisting of at least four measurements shall be utilized as the daily average concentration.

      ii. For all other wastewater treatment plants - When four samples are not available in a calendar month, the arithmetic average (weighted by flow) of all values taken during the month shall be utilized as the daily average concentration.

   b. 7-day average concentration - the arithmetic average of all effluent samples, composite or grab as required by this permit, within a period of one calendar week, Sunday through Saturday.

   c. Daily maximum concentration - the maximum concentration measured on a single day, by the sample type specified in the permit, within a period of one calendar month.

   d. Daily discharge - the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in terms of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the sampling day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the average measurement of the pollutant over the sampling day.

      The daily discharge determination of concentration made using a composite sample shall be the concentration of the composite sample. When grab samples are used, the daily discharge determination of concentration shall be the arithmetic average (weighted by flow value) of all samples collected during that day.

e. Bacteria concentration (*E. coli* or Enterococci) - Colony Forming Units (CFU) or Most Probable Number (MPN) of bacteria per 100 milliliters effluent. The daily average bacteria concentration is a geometric mean of the values for the effluent samples collected in a calendar month. The geometric mean shall be determined by calculating the nth root of the product of all measurements made in a calendar month, where n equals the number of measurements made; or, computed as the antilogarithm of the arithmetic mean of the logarithms of all measurements made in a calendar month. For any measurement of bacteria equaling zero, a substituted value of one shall be made for input into either computation method. If specified, the 7-day average for bacteria is the geometric mean of the values for all effluent samples collected during a calendar week.

f. Daily average loading (lbs/day) - the arithmetic average of all daily discharge loading calculations during a period of one calendar month. These calculations must be made for each day of the month that a parameter is analyzed. The daily discharge, in terms of mass (lbs/day), is calculated as (Flow, MGD x Concentration, mg/l x 8.34).

g. Daily maximum loading (lbs/day) - the highest daily discharge, in terms of mass (lbs/day), within a period of one calendar month.

3. Sample Type

a. Composite sample - For domestic wastewater, a composite sample is a sample made up of a minimum of three effluent portions collected in a continuous 24-hour period or during the period of daily discharge if less than 24 hours, and combined in volumes proportional to flow, and collected at the intervals required by 30 TAC § 319.9 (a). For industrial wastewater, a composite sample is a sample made up of a minimum of three effluent portions collected in a continuous 24-hour period or during the period of daily discharge if less than 24 hours, and combined in volumes proportional to flow, and collected at the intervals required by 30 TAC § 319.9 (b).

b. Grab sample - an individual sample collected in less than 15 minutes.

4. Treatment Facility (facility) - wastewater facilities used in the conveyance, storage, treatment, recycling, reclamation and/or disposal of domestic sewage, industrial wastes, agricultural wastes, recreational wastes, or other wastes including sludge handling or disposal facilities under the jurisdiction of the Commission.

5. The term "sewage sludge" is defined as solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in 30 TAC Chapter 312. This includes the solids that have not been classified as hazardous waste separated from wastewater by unit processes.

6. Bypass - the intentional diversion of a waste stream from any portion of a treatment facility.

MONITORING AND REPORTING REQUIREMENTS

1. Self-Reporting

Monitoring results shall be provided at the intervals specified in the permit. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall conduct effluent sampling and reporting in accordance with 30 TAC §§ 319.4 - 319.12. Unless otherwise specified, a monthly effluent report shall be submitted each month, to the Enforcement Division (MC 224), by the 20th day of the following month for each discharge which is described by this permit whether or not a discharge is made for that month. Monitoring results must be reported on an approved self-report form that is signed and certified as required by Monitoring and Reporting Requirements No. 10.

As provided by state law, the permittee is subject to administrative, civil and criminal penalties, as applicable, for negligently or knowingly violating the Clean Water Act (CWA); TWC §§ 26, 27, and 28; and THSC § 361, including but not limited to knowingly making any false statement, representation, or certification on any report, record, or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance, or falsifying, tampering with or knowingly rendering inaccurate any monitoring device or method required by this permit or violating any other requirement imposed by state or federal regulations.

2. Test Procedures

a. Unless otherwise specified in this permit, test procedures for the analysis of pollutants shall comply with procedures specified in 30 TAC §§ 319.11 - 319.12. Measurements, tests, and calculations shall be accurately accomplished in a representative manner.

b. All laboratory tests submitted to demonstrate compliance with this permit must meet the requirements of 30 TAC § 25, Environmental Testing Laboratory Accreditation and Certification.

3. Records of Results

   a. Monitoring samples and measurements shall be taken at times and in a manner so as to be representative of the monitored activity.

   b. Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503), monitoring and reporting records, including strip charts and records of calibration and maintenance, copies of all records required by this permit, records of all data used to complete the application for this permit, and the certification required by 40 CFR § 264.73(b)(9) shall be retained at the facility site, or shall be readily available for review by a TCEQ representative for a period of three years from the date of the record or sample, measurement, report, application or certification. This period shall be extended at the request of the Executive Director.

   c. Records of monitoring activities shall include the following:

      i. date, time and place of sample or measurement;
      ii. identity of individual who collected the sample or made the measurement.
      iii. date and time of analysis;
      iv. identity of the individual and laboratory who performed the analysis;
      v. the technique or method of analysis; and
      vi. the results of the analysis or measurement and quality assurance/quality control records.

      The period during which records are required to be kept shall be automatically extended to the date of the final disposition of any administrative or judicial enforcement action that may be instituted against the permittee.

4. Additional Monitoring by Permittee

   If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit using approved analytical methods as specified above, all results of such monitoring shall be included in the calculation and reporting of the values submitted on the approved self-report form. Increased frequency of sampling shall be indicated on the self-report form.

5. Calibration of Instruments

   All automatic flow measuring or recording devices and all totalizing meters for measuring flows shall be accurately calibrated by a trained person at plant start-up and as often thereafter as necessary to ensure accuracy, but not less often than annually unless authorized by the Executive Director for a longer period. Such person shall verify in writing that the device is operating properly and giving accurate results. Copies of the verification shall be retained at the facility site and/or shall be readily available for review by a TCEQ representative for a period of three years.

6. Compliance Schedule Reports

   Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of the permit shall be submitted no later than 14 days following each schedule date to the Regional Office and the Enforcement Division (MC 224).

7. Noncompliance Notification

   a. In accordance with 30 TAC § 305.125(9) any noncompliance which may endanger human health or safety, or the environment shall be reported by the permittee to the TCEQ. Report of such information shall be provided orally or by facsimile transmission (FAX) to the Regional Office within 24 hours of becoming aware of the noncompliance. A written submission of such information shall also be provided by the permittee to the Regional Office and the Enforcement Division (MC 224) within five working days of becoming aware of the noncompliance. The written submission shall contain a description of the noncompliance and its cause; the potential danger to human health or safety, or the environment; the period of noncompliance, including exact dates and times; if the noncompliance has not been corrected, the time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance, and to mitigate its adverse effects.

   b. The following violations shall be reported under Monitoring and Reporting Requirement 7.a.:

      i. Unauthorized discharges as defined in Permit Condition 2(g).
      ii. Any unanticipated bypass that exceeds any effluent limitation in the permit.
      iii. Violation of a permitted maximum daily discharge limitation for pollutants listed specifically in the Other Requirements section of an Industrial TPDES permit.

c. In addition to the above, any effluent violation which deviates from the permitted effluent limitation by more than 40% shall be reported by the permittee in writing to the Regional Office and the Enforcement Division (MC 224) within 5 working days of becoming aware of the noncompliance.

d. Any noncompliance other than that specified in this section, or any required information not submitted or submitted incorrectly, shall be reported to the Enforcement Division (MC 224) as promptly as possible. For effluent limitation violations, noncompliances shall be reported on the approved self-report form.

8. In accordance with the procedures described in 30 TAC §§ 35.301 - 35.303 (relating to Water Quality Emergency and Temporary Orders) if the permittee knows in advance of the need for a bypass, it shall submit prior notice by applying for such authorization.

9. Changes in Discharges of Toxic Substances

All existing manufacturing, commercial, mining, and silvicultural permittees shall notify the Regional Office, orally or by facsimile transmission within 24 hours, and both the Regional Office and the Enforcement Division (MC 224) in writing within five (5) working days, after becoming aware of or having reason to believe:

a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant listed at 40 CFR Part 122, Appendix D, Tables II and III (excluding Total Phenols) which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

i. One hundred micrograms per liter (100 µg/L);
ii. Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
iii. Five (5) times the maximum concentration value reported for that pollutant in the permit application; or
iv. The level established by the TCEQ.

b. That any activity has occurred or will occur which would result in any discharge, on a nonroutine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

i. Five hundred micrograms per liter (500 µg/L);
ii. One milligram per liter (1 mg/L) for antimony;
iii. Ten (10) times the maximum concentration value reported for that pollutant in the permit application; or
iv. The level established by the TCEQ.

10. Signatories to Reports

All reports and other information requested by the Executive Director shall be signed by the person and in the manner required by 30 TAC § 305.128 (relating to Signatories to Reports).

11. All Publicly Owned Treatment Works (POTWs) must provide adequate notice to the Executive Director of the following:

a. Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to CWA § 301 or § 306 if it were directly discharging those pollutants;

b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit; and

c. For the purpose of this paragraph, adequate notice shall include information on:

i. The quality and quantity of effluent introduced into the POTW; and
ii. Any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

PERMIT CONDITIONS

1. General

   a. When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in an application or in any report to the Executive Director, it shall promptly submit such facts or information.

   b. This permit is granted on the basis of the information supplied and representations made by the permittee during action on an application, and relying upon the accuracy and completeness of that information and those representations. After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked, in whole or in part, in accordance with 30 TAC Chapter 305, Subchapter D, during its term for good cause including, but not limited to, the following:

      i. Violation of any terms or conditions of this permit;
      ii. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or
      iii. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

   c. The permittee shall furnish to the Executive Director, upon request and within a reasonable time, any information to determine whether cause exists for amending, revoking, suspending or terminating the permit. The permittee shall also furnish to the Executive Director, upon request, copies of records required to be kept by the permit.

2. Compliance

   a. Acceptance of the permit by the person to whom it is issued constitutes acknowledgment and agreement that such person will comply with all the terms and conditions embodied in the permit, and the rules and other orders of the Commission.

   b. The permittee has a duty to comply with all conditions of the permit. Failure to comply with any permit condition constitutes a violation of the permit and the Texas Water Code or the Texas Health and Safety Code, and is grounds for enforcement action, for permit amendment, revocation, or suspension, or for denial of a permit renewal application or an application for a permit for another facility.

   c. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit.

   d. The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal or other permit violation that has a reasonable likelihood of adversely affecting human health or the environment.

   e. Authorization from the Commission is required before beginning any change in the permitted facility or activity that may result in noncompliance with any permit requirements.

   f. A permit may be amended, suspended and reissued, or revoked for cause in accordance with 30 TAC §§ 305.62 and 305.66 and TWC§ 7.302. The filing of a request by the permittee for a permit amendment, suspension and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

   g. There shall be no unauthorized discharge of wastewater or any other waste. For the purpose of this permit, an unauthorized discharge is considered to be any discharge of wastewater into or adjacent to water in the state at any location not permitted as an outfall or otherwise defined in the Other Requirements section of this permit.

   h. In accordance with 30 TAC § 305.535(a), the permittee may allow any bypass to occur from a TPDES permitted facility which does not cause permitted effluent limitations to be exceeded or an unauthorized discharge to occur, but only if the bypass is also for essential maintenance to assure efficient operation.

   i. The permittee is subject to administrative, civil, and criminal penalties, as applicable, under TWC §§ 7.051 - 7.075 (relating to Administrative Penalties), 7.101 - 7.111 (relating to Civil Penalties), and 7.141 - 7.202 (relating to Criminal Offenses and Penalties) for violations including, but not limited to, negligently or knowingly violating the federal CWA §§ 301, 302, 306, 307, 308, 318, or 405, or any condition or limitation implementing any sections in a permit issued under the CWA § 402, or any requirement imposed in a pretreatment program approved under the CWA §§ 402 (a)(3) or 402 (b)(8).

3. Inspections and Entry

   a. Inspection and entry shall be allowed as prescribed in the TWC Chapters 26, 27, and 28, and THSC § 361.

   b. The members of the Commission and employees and agents of the Commission are entitled to enter any public or private property at any reasonable time for the purpose of inspecting and investigating conditions relating to the quality of water in the state or the compliance with any rule, regulation, permit or other order of the Commission. Members, employees, or agents of the Commission and Commission contractors are entitled to enter public or private property at any reasonable time to investigate or monitor or, if the responsible party is not responsive or there is an immediate danger to public health or the environment, to remove or remediate a condition related to the quality of water in the state. Members, employees, Commission contractors, or agents acting under this authority who enter private property shall observe the establishment's rules and regulations concerning safety, internal security, and fire protection, and if the property has management in residence, shall notify management or the person then in charge of his presence and shall exhibit proper credentials. If any member, employee, Commission contractor, or agent is refused the right to enter in or on public or private property under this authority, the Executive Director may invoke the remedies authorized in TWC § 7.002. The statement above, that Commission entry shall occur in accordance with an establishment's rules and regulations concerning safety, internal security, and fire protection, is not grounds for denial or restriction of entry to any part of the facility, but merely describes the Commission's duty to observe appropriate rules and regulations during an inspection.

4. Permit Amendment and/or Renewal

   a. The permittee shall give notice to the Executive Director as soon as possible of any planned physical alterations or additions to the permitted facility if such alterations or additions would require a permit amendment or result in a violation of permit requirements. Notice shall also be required under this paragraph when:

      i. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in accordance with 30 TAC § 305.534 (relating to New Sources and New Dischargers); or

      ii. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are subject neither to effluent limitations in the permit, nor to notification requirements in Monitoring and Reporting Requirements No. 9;

      iii. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.

   b. Prior to any facility modifications, additions, or expansions that will increase the plant capacity beyond the permitted flow, the permittee must apply for and obtain proper authorization from the Commission before commencing construction.

   c. The permittee must apply for an amendment or renewal at least 180 days prior to expiration of the existing permit in order to continue a permitted activity after the expiration date of the permit. If an application is submitted prior to the expiration date of the permit, the existing permit shall remain in effect until the application is approved, denied, or returned. If the application is returned or denied, authorization to continue such activity shall terminate upon the effective date of the action. If an application is not submitted prior to the expiration date of the permit, the permit shall expire and authorization to continue such activity shall terminate.

   d. Prior to accepting or generating wastes which are not described in the permit application or which would result in a significant change in the quantity or quality of the existing discharge, the permittee must report the proposed changes to the Commission. The permittee must apply for a permit amendment reflecting any necessary changes in permit conditions, including effluent limitations for pollutants not identified and limited by this permit.

   e. In accordance with the TWC § 26.029(b), after a public hearing, notice of which shall be given to the permittee, the Commission may require the permittee, from time to time, for good cause, in accordance with applicable laws, to conform to new or additional conditions.

   f. If any toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under CWA § 307(a) for a toxic pollutant which is present in the discharge and that standard or prohibition is more stringent than any limitation on the pollutant in this permit, this permit shall be modified or revoked and reissued to conform to the toxic effluent standard or prohibition. The permittee shall comply with effluent standards or prohibitions established under CWA § 307(a) for toxic pollutants within the time provided in the regulations that established those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

5. Permit Transfer

   a. Prior to any transfer of this permit, Commission approval must be obtained. The Commission shall be notified in writing of any change in control or ownership of facilities authorized by this permit. Such notification should be sent to the Applications Review and Processing Team (MC 148) of the Water Quality Division.

   b. A permit may be transferred only according to the provisions of 30 TAC § 305.64 (relating to Transfer of Permits) and 30 TAC § 50.133 (relating to Executive Director Action on Application or WQMP update).

6. Relationship to Hazardous Waste Activities

   This permit does not authorize any activity of hazardous waste storage, processing, or disposal that requires a permit or other authorization pursuant to the Texas Health and Safety Code.

7. Relationship to Water Rights

   Disposal of treated effluent by any means other than discharge directly to water in the state must be specifically authorized in this permit and may require a permit pursuant to TWC Chapter 11.

8. Property Rights

   A permit does not convey any property rights of any sort, or any exclusive privilege.

9. Permit Enforceability

   The conditions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstances, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

10. Relationship to Permit Application

    The application pursuant to which the permit has been issued is incorporated herein; provided, however, that in the event of a conflict between the provisions of this permit and the application, the provisions of the permit shall control.

11. Notice of Bankruptcy.

    a. Each permittee shall notify the Executive Director, in writing, immediately following the filing of a voluntary or involuntary petition for bankruptcy under any chapter of Title 11 (Bankruptcy) of the United States Code (11 USC) by or against:
       i. the permittee;
       ii. an entity (as that term is defined in 11 USC, § 101(14)) controlling the permittee or listing the permit or permittee as property of the estate; or
       iii. an affiliate (as that term is defined in 11 USC, § 101(2)) of the permittee.

    b. This notification must indicate:
       i. the name of the permittee and the permit number(s);
       ii. the bankruptcy court in which the petition for bankruptcy was filed; and
       iii. the date of filing of the petition.

OPERATIONAL REQUIREMENTS

1. The permittee shall at all times ensure that the facility and all of its systems of collection, treatment, and disposal are properly operated and maintained. This includes, but is not limited to, the regular, periodic examination of wastewater solids within the treatment plant by the operator in order to maintain an appropriate quantity and quality of solids inventory as described in the various operator training manuals and according to accepted industry standards for process control. Process control, maintenance, and operations records shall be retained at the facility site, or shall be readily available for review by a TCEQ representative, for a period of three years.

2. Upon request by the Executive Director, the permittee shall take appropriate samples and provide proper analysis in order to demonstrate compliance with Commission rules. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall comply with all applicable provisions of 30 TAC Chapter 312 concerning sewage sludge use and disposal and 30 TAC §§ 319.21 - 319.29 concerning the discharge of certain hazardous metals.

3. Domestic wastewater treatment facilities shall comply with the following provisions:

   a. The permittee shall notify the Municipal Permits Team, Wastewater Permitting Section (MC 148) of the Water Quality Division, in writing, of any facility expansion at least 90 days prior to conducting such activity.

   b. The permittee shall submit a closure plan for review and approval to the Municipal Permits Team, Wastewater Permitting Section (MC 148) of the Water Quality Division, for any closure activity at least 90 days prior to conducting such activity. Closure is the act of permanently taking a waste management unit or treatment facility out of service and includes the permanent removal from service of any pit, tank, pond, lagoon, surface impoundment and/or other treatment unit regulated by this permit.

4. The permittee is responsible for installing prior to plant start-up, and subsequently maintaining, adequate safeguards to prevent the discharge of untreated or inadequately treated wastes during electrical power failures by means of alternate power sources; standby generators, and/or retention of inadequately treated wastewater.

5. Unless otherwise specified, the permittee shall provide a readily accessible sampling point and, where applicable, an effluent flow measuring device or other acceptable means by which effluent flow may be determined.

6. The permittee shall remit an annual water quality fee to the Commission as required by 30 TAC Chapter 21. Failure to pay the fee may result in revocation of this permit under TWC § 7.302(b)(6).

7. Documentation

   For all written notifications to the Commission required of the permittee by this permit, the permittee shall keep and make available a copy of each such notification under the same conditions as self-monitoring data are required to be kept and made available. Except for information required for TPDES permit applications, effluent data, including effluent data in permits, draft permits and permit applications, and other information specified as not confidential in 30 TAC §§ 1.5(d), any information submitted pursuant to this permit may be claimed as confidential by the submitter. Any such claim must be asserted in the manner prescribed in the application form or by stamping the words confidential business information on each page containing such information. If no claim is made at the time of submission, information may be made available to the public without further notice. If the Commission or Executive Director agrees with the designation of confidentiality, the TCEQ will not provide the information for public inspection unless required by the Texas Attorney General or a court pursuant to an open records request. If the Executive Director does not agree with the designation of confidentiality, the person submitting the information will be notified.

8. Facilities that generate domestic wastewater shall comply with the following provisions; domestic wastewater treatment facilities at permitted industrial sites are excluded.

   a. Whenever flow measurements for any domestic sewage treatment facility reach 75% of the permitted daily average or annual average flow for three consecutive months, the permittee must initiate engineering and financial planning for expansion and/or upgrading of the domestic wastewater treatment and/or collection facilities. Whenever the flow reaches 90% of the permitted daily average or annual average flow for three consecutive months, the permittee shall obtain necessary authorization from the Commission to commence construction of the necessary additional treatment and/or collection facilities. In the case of a domestic wastewater treatment facility which reaches 75% of the permitted daily average or annual average flow for three consecutive months, and the planned population to be served or the quantity of waste produced is not expected to exceed the design limitations of the treatment facility, the permittee shall submit an engineering report supporting this claim to the Executive Director of the Commission.

      If in the judgment of the Executive Director the population to be served will not cause permit noncompliance, then the requirement of this section may be waived. To be effective, any waiver must be in writing and signed by the Director of the Enforcement Division (MC 149) of the Commission, and such waiver of these requirements will be reviewed upon expiration of the existing permit; however, any such waiver shall not be interpreted as condoning or excusing any violation of any permit parameter.

   b. The plans and specifications for domestic sewage collection and treatment works associated with any domestic permit must be approved by the Commission and failure to secure approval before commencing construction of such works or making a discharge is a violation of this permit and each day is an additional violation until approval has been secured.

c. Permits for domestic wastewater treatment plants are granted subject to the policy of the Commission to encourage the development of area-wide waste collection, treatment, and disposal systems. The Commission reserves the right to amend any domestic wastewater permit in accordance with applicable procedural requirements to require the system covered by this permit to be integrated into an area-wide system, should such be developed; to require the delivery of the wastes authorized to be collected in, treated by or discharged from said system, to such area-wide system; or to amend this permit in any other particular to effectuate the Commission's policy. Such amendments may be made when the changes required are advisable for water quality control purposes and are feasible on the basis of waste treatment technology, engineering, financial, and related considerations existing at the time the changes are required, exclusive of the loss of investment in or revenues from any then existing or proposed waste collection, treatment or disposal system.

9. Domestic wastewater treatment plants shall be operated and maintained by sewage plant operators holding a valid certificate of competency at the required level as defined in 30 TAC Chapter 30.

10. For Publicly Owned Treatment Works (POTWs), the 30-day average (or monthly average) percent removal for BOD and TSS shall not be less than 85%, unless otherwise authorized by this permit.

11. Facilities that generate industrial solid waste as defined in 30 TAC § 335.1 shall comply with these provisions:

a. Any solid waste, as defined in 30 TAC § 335.1 (including but not limited to such wastes as garbage, refuse, sludge from a waste treatment, water supply treatment plant or air pollution control facility, discarded materials, discarded materials to be recycled, whether the waste is solid, liquid, or semisolid), generated by the permittee during the management and treatment of wastewater, must be managed in accordance with all applicable provisions of 30 TAC Chapter 335, relating to Industrial Solid Waste Management.

b. Industrial wastewater that is being collected, accumulated, stored, or processed before discharge through any final discharge outfall, specified by this permit, is considered to be industrial solid waste until the wastewater passes through the actual point source discharge and must be managed in accordance with all applicable provisions of 30 TAC Chapter 335.

c. The permittee shall provide written notification, pursuant to the requirements of 30 TAC § 335.8(b)(1), to the Environmental Cleanup Section (MC 127) of the Remediation Division informing the Commission of any closure activity involving an Industrial Solid Waste Management Unit, at least 90 days prior to conducting such an activity.

d. Construction of any industrial solid waste management unit requires the prior written notification of the proposed activity to the Registration and Reporting Section (MC 129) of the Registration, Review, and Reporting Division. No person shall dispose of industrial solid waste, including sludge or other solids from wastewater treatment processes, prior to fulfilling the deed recordation requirements of 30 TAC § 335.5.

e. The term "industrial solid waste management unit" means a landfill, surface impoundment, waste-pile, industrial furnace, incinerator, cement kiln, injection well, container, drum, salt dome waste containment cavern, or any other structure vessel, appurtenance, or other improvement on land used to manage industrial solid waste.

f. The permittee shall keep management records for all sludge (or other waste) removed from any wastewater treatment process. These records shall fulfill all applicable requirements of 30 TAC § 335 and must include the following, as it pertains to wastewater treatment and discharge:

i. Volume of waste and date(s) generated from treatment process;
ii. Volume of waste disposed of on-site or shipped off-site;
iii. Date(s) of disposal;
iv. Identity of hauler or transporter;
v. Location of disposal site; and
vi. Method of final disposal.

The above records shall be maintained on a monthly basis. The records shall be retained at the facility site, or shall be readily available for review by authorized representatives of the TCEQ for at least five years.

12. For industrial facilities to which the requirements of 30 TAC § 335 do not apply, sludge and solid wastes, including tank cleaning and contaminated solids for disposal, shall be disposed of in accordance with THSC § 361.

SLUDGE PROVISIONS

The permittee is authorized to dispose of sludge only at a Texas Commission on Environmental Quality (TCEQ) authorized land application site or co-disposal landfill. **The disposal of sludge by land application on property owned, leased or under the direct control of the permittee is a violation of the permit unless the site is authorized with the TCEQ. This provision does not authorize Distribution and Marketing of sludge. This provision does not authorize land application of Class A Sludge. This provision does not authorize the permittee to land apply sludge on property owned, leased or under the direct control of the permittee.**

SECTION I. REQUIREMENTS APPLYING TO ALL SEWAGE SLUDGE LAND APPLICATION

A. General Requirements

1. The permittee shall handle and dispose of sewage sludge in accordance with 30 TAC § 312 and all other applicable state and federal regulations in a manner that protects public health and the environment from any reasonably anticipated adverse effects due to any toxic pollutants that may be present in the sludge.

2. In all cases, if the person (permit holder) who prepares the sewage sludge supplies the sewage sludge to another person for land application use or to the owner or lease holder of the land, the permit holder shall provide necessary information to the parties who receive the sludge to assure compliance with these regulations.

3. The permittee shall give 180 days prior notice to the Executive Director in care of the Wastewater Permitting Section (MC 148) of the Water Quality Division of any change planned in the sewage sludge disposal practice.

B. Testing Requirements

1. Sewage sludge shall be tested annually in accordance with the method specified in both 40 CFR Part 261, Appendix II and 40 CFR Part 268, Appendix I Toxicity Characteristic Leaching Procedure (TCLP) or other method that receives the prior approval of the TCEQ for the contaminants listed in 40 CFR Part 261.24, Table 1. Sewage sludge failing this test shall be managed according to RCRA standards for generators of hazardous waste, and the waste's disposition must be in accordance with all applicable requirements for hazardous waste processing, storage, or disposal. Following failure of any TCLP test, the management or disposal of sewage sludge at a facility other than an authorized hazardous waste processing, storage, or disposal facility shall be prohibited until such time as the permittee can demonstrate the sewage sludge no longer exhibits the hazardous waste toxicity characteristics (as demonstrated by the results of the TCLP tests). A written report shall be provided to both the TCEQ Registration and Reporting Section (MC 129) of the Permitting and Remediation Support Division and the Regional Director (MC Region 3) within seven (7) days after failing the TCLP Test.

   The report shall contain test results, certification that unauthorized waste management has stopped and a summary of alternative disposal plans that comply with RCRA standards for the management of hazardous waste. The report shall be addressed to: Director, Registration, Review, and Reporting Division (MC 129), Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087. In addition, the permittee shall prepare an annual report on the results of all sludge toxicity testing. This annual report shall be submitted to the TCEQ Regional Office (MC Region 3) and the Water Quality Compliance Monitoring Team (MC 224) of the Enforcement Division by September 30 of each year.

2. Sewage sludge shall not be applied to the land if the concentration of the pollutants exceeds the pollutant concentration criteria in Table 1. The frequency of testing for pollutants in Table 1 is found in Section I.C.

TABLE 1

Pollutant	Ceiling Concentration (Milligrams per kilogram)*
Arsenic	75
Cadmium	85
Chromium	3000
Copper	4300
Lead	840
Mercury	57
Molybdenum	75
Nickel	420
PCBs	49
Selenium	100
Zinc	7500

* Dry weight basis

3. Pathogen Control

All sewage sludge that is applied to agricultural land, forest, a public contact site, or a reclamation site shall be treated by one of the following methods to ensure that the sludge meets either the Class A or Class B pathogen requirements.

a. Six alternatives are available to demonstrate compliance with Class A sewage sludge. The first 4 options require either the density of fecal coliform in the sewage sludge be less than 1000 Most Probable Number (MPN) per gram of total solids (dry weight basis), or the density of Salmonella sp. bacteria in the sewage sludge be less than three MPN per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed. Below are the additional requirements necessary to meet the definition of a Class A sludge.

Alternative 1 - The temperature of the sewage sludge that is used or disposed shall be maintained at or above a specific value for a period of time. See 30 TAC § 312.82(a)(2)(A) for specific information.

Alternative 2 - The pH of the sewage sludge that is used or disposed shall be raised to above 12 std. units and shall remain above 12 std. units for 72 hours.

The temperature of the sewage sludge shall be above 52° Celsius for 12 hours or longer during the period that the pH of the sewage sludge is above 12 std. units.

At the end of the 72-hour period during which the pH of the sewage sludge is above 12 std. units, the sewage sludge shall be air dried to achieve a percent solids in the sewage sludge greater than 50%.

Alternative 3 - The sewage sludge shall be analyzed for enteric viruses prior to pathogen treatment. The limit for enteric viruses is less than one Plaque-forming Unit per four grams of total solids (dry weight basis) either before or following pathogen treatment. See 30 TAC § 312.82(a)(2)(C)(i-iii) for specific information. The sewage sludge shall be analyzed for viable helminth ova prior to pathogen treatment. The limit for viable helminth ova is less than one per four grams of total solids (dry weight basis) either before or following pathogen treatment. See 30 TAC § 312.82(a)(2)(C)(iv-vi) for specific information.

Alternative 4 - The density of enteric viruses in the sewage sludge shall be less than one Plaque-forming Unit per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed. The density of viable helminth ova in the sewage sludge shall be less than one per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed.

Alternative 5 (PFRP) - Sewage sludge that is used or disposed of shall be treated in one of the processes to Further Reduce Pathogens (PFRP) described in 40 CFR Part 503, Appendix B. PFRP include composting, heat drying, heat treatment, and thermophilic aerobic digestion.

Alternative 6 (PFRP Equivalent) - Sewage sludge that is used or disposed of shall be treated in a process that has been approved by the U. S. Environmental Protection Agency as being equivalent to those in Alternative 5.

b. Three alternatives are available to demonstrate compliance with Class B criteria for sewage sludge.

Alternative 1

i. A minimum of seven random samples of the sewage sludge shall be collected within 48 hours of the time the sewage sludge is used or disposed of during each monitoring episode for the sewage sludge.

ii. The geometric mean of the density of fecal coliform in the samples collected shall be less than either 2,000,000 MPN per gram of total solids (dry weight basis) or 2,000,000 Colony Forming Units per gram of total solids (dry weight basis).

Alternative 2 - Sewage sludge that is used or disposed of shall be treated in one of the Processes to Significantly Reduce Pathogens (PSRP) described in 40 CFR Part 503, Appendix B, so long as all of the following requirements are met by the generator of the sewage sludge.

i. Prior to use or disposal, all the sewage sludge must have been generated from a single location, except as provided in paragraph v. below;

ii. An independent Texas Licensed Professional Engineer must make a certification to the generator of a sewage sludge that the wastewater treatment facility generating the sewage sludge is designed to achieve one of the PSRP at the permitted design loading of the facility. The certification need only be repeated if the design loading of the facility is increased. The certification shall include a statement indicating the design meets all the applicable standards specified in Appendix B of 40 CFR Part 503;

iii. Prior to any off-site transportation or on-site use or disposal of any sewage sludge generated at a wastewater treatment facility, the chief certified operator of the wastewater treatment facility or other responsible official who manages the processes to significantly reduce pathogens at the wastewater treatment facility for the permittee, shall certify that the sewage sludge underwent at least the minimum operational requirements necessary in order to meet one of the PSRP. The acceptable processes and the minimum operational and record keeping requirements shall be in accordance with established U. S. Environmental Protection Agency final guidance;

iv. All certification records and operational records describing how the requirements of this paragraph were met shall be kept by the generator for a minimum of three years and be available for inspection by commission staff for review; and

v. If the sewage sludge is generated from a mixture of sources, resulting from a person who prepares sewage sludge from more than one wastewater treatment facility, the resulting derived product shall meet one of the PSRP, and shall meet the certification, operation, and record keeping requirements of this paragraph.

Alternative 3 - Sewage sludge shall be treated in an equivalent process that has been approved by the U. S. Environmental Protection Agency, so long as all of the following requirements are met by the generator of the sewage sludge.

i. Prior to use or disposal, all the sewage sludge must have been generated from a single location, except as provided in paragraph v. below;

ii. Prior to any off-site transportation or on-site use or disposal of any sewage sludge generated at a wastewater treatment facility, the chief certified operator of the wastewater treatment facility or other responsible official who manages the processes to significantly reduce pathogens at the wastewater treatment facility for the permittee, shall certify that the sewage sludge underwent at least the minimum operational requirements necessary in order to meet one of the PSRP. The acceptable processes and the minimum operational and record keeping requirements shall be in accordance with established U. S. Environmental Protection Agency final guidance;

iii. All certification records and operational records describing how the requirements of this paragraph were met shall be kept by the generator for a minimum of three years and be available for inspection by commission staff for review;

iv. The Executive Director will accept from the U. S. Environmental Protection Agency a finding of equivalency to the defined PSRP; and

v. If the sewage sludge is generated from a mixture of sources resulting from a person who prepares sewage sludge from more than one wastewater treatment facility, the resulting derived product shall meet one of the Processes to Significantly Reduce Pathogens, and shall meet the certification, operation, and record keeping requirements of this paragraph.

In addition, the following site restrictions must be met if Class B sludge is land applied:

i. Food crops with harvested parts that touch the sewage sludge/soil mixture and are totally above the land surface shall not be harvested for 14 months after application of sewage sludge.

ii. Food crops with harvested parts below the surface of the land shall not be harvested for 20 months after application of sewage sludge when the sewage sludge remains on the land surface for 4 months or longer prior to incorporation into the soil.

iii. Food crops with harvested parts below the surface of the land shall not be harvested for 38 months after application of sewage sludge when the sewage sludge remains on the land surface for less than 4 months prior to incorporation into the soil.

iv. Food crops, feed crops, and fiber crops shall not be harvested for 30 days after application of sewage sludge.

v. Animals shall not be allowed to graze on the land for 30 days after application of sewage sludge.

vi. Turf grown on land where sewage sludge is applied shall not be harvested for 1 year after application of the sewage sludge when the harvested turf is placed on either land with a high potential for public exposure or a lawn.

vii. Public access to land with a high potential for public exposure shall be restricted for 1 year after application of sewage sludge.

viii. Public access to land with a low potential for public exposure shall be restricted for 30 days after application of sewage sludge.

ix. Land application of sludge shall be in accordance with the buffer zone requirements found in 30 TAC § 312.44.

4. Vector Attraction Reduction Requirements

All bulk sewage sludge that is applied to agricultural land, forest, a public contact site, or a reclamation site shall be treated by one of the following Alternatives 1 through 10 for vector attraction reduction.

Alternative 1 - The mass of volatile solids in the sewage sludge shall be reduced by a minimum of 38%.

Alternative 2 - If Alternative 1 cannot be met for an anaerobically digested sludge, demonstration can be made by digesting a portion of the previously digested sludge anaerobically in the laboratory in a bench-scale unit for 40 additional days at a temperature between 30° and 37° Celsius. Volatile solids must be reduced by less than 17% to demonstrate compliance.

Alternative 3 - If Alternative 1 cannot be met for an aerobically digested sludge, demonstration can be made by digesting a portion of the previously digested sludge with percent solids of two percent or less aerobically in the laboratory in a bench-scale unit for 30 additional days at 20° Celsius. Volatile solids must be reduced by less than 15% to demonstrate compliance.

Alternative 4 - The specific oxygen uptake rate (SOUR) for sewage sludge treated in an aerobic process shall be equal to or less than 1.5 milligrams of oxygen per hour per gram of total solids (dry weight basis) at a temperature of 20° Celsius.

Alternative 5 - Sewage sludge shall be treated in an aerobic process for 14 days or longer. During that time, the temperature of the sewage sludge shall be higher than 40° Celsius and the average temperature of the sewage sludge shall be higher than 45° Celsius.

Alternative 6 - The pH of sewage sludge shall be raised to 12 or higher by alkali addition and, without the addition of more alkali shall remain at 12 or higher for two hours and then remain at a pH of 11.5 or higher for an additional 22 hours at the time the sewage sludge is prepared for sale or given away in a bag or other container.

Alternative 7 - The percent solids of sewage sludge that does not contain unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 75% based on the moisture content and total solids prior to mixing with other materials. Unstabilized solids are defined as organic materials in sewage sludge that have not been treated in either an aerobic or anaerobic treatment process.

Alternative 8 - The percent solids of sewage sludge that contains unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 90% based on the moisture content and total solids prior to mixing with other materials at the time the sludge is used. Unstabilized solids are defined as organic materials in sewage sludge that have not been treated in either an aerobic or anaerobic treatment process.

Alternative 9 - i. Sewage sludge shall be injected below the surface of the land.

ii. No significant amount of the sewage sludge shall be present on the land surface within one hour after the sewage sludge is injected.

iii. When sewage sludge that is injected below the surface of the land is Class A with respect to pathogens, the sewage sludge shall be injected below the land surface within eight hours after being discharged from the pathogen treatment process.

Alternative 10- i. Sewage sludge applied to the land surface or placed on a surface disposal site shall be incorporated into the soil within six hours after application to or placement on the land.

ii. When sewage sludge that is incorporated into the soil is Class A with respect to pathogens, the sewage sludge shall be applied to or placed on the land within eight hours after being discharged from the pathogen treatment process.

C. Monitoring Requirements

Toxicity Characteristic Leaching Procedure (TCLP) Test - annually

PCBs - annually

All metal constituents and fecal coliform or Salmonella sp. bacteria shall be monitored at the appropriate frequency shown below, pursuant to 30 TAC § 312.46(a)(1):

Amount of sewage sludge (*) metric tons per 365-day period	Monitoring Frequency
0 to less than 290	Once/Year
290 to less than 1,500	Once/Quarter
1,500 to less than 15,000	Once/Two Months
15,000 or greater	Once/Month

(*) *The amount of bulk sewage sludge applied to the land (dry weight basis).*

Representative samples of sewage sludge shall be collected and analyzed in accordance with the methods referenced in 30 TAC § 312.7

SECTION II. REQUIREMENTS SPECIFIC TO BULK SEWAGE SLUDGE FOR APPLICATION TO THE LAND MEETING CLASS A or B PATHOGEN REDUCTION AND THE CUMULATIVE LOADING RATES IN TABLE 2, OR CLASS B PATHOGEN REDUCTION AND THE POLLUTANT CONCENTRATIONS IN TABLE 3

For those permittees meeting Class A or B pathogen reduction requirements and that meet the cumulative loading rates in Table 2 below, or the Class B pathogen reduction requirements and contain concentrations of pollutants below listed in Table 3, the following conditions apply:

A. Pollutant Limits

Table 2

Pollutant	Cumulative Pollutant Loading Rate (pounds per acre)*
Arsenic	36
Cadmium	35
Chromium	2677
Copper	1339
Lead	268
Mercury	15
Molybdenum	Report Only
Nickel	375
Selenium	89
Zinc	2500

Table 3

Pollutant	Monthly Average Concentration (milligrams per kilogram)*
Arsenic	41
Cadmium	39
Chromium	1200
Copper	1500
Lead	300
Mercury	17
Molybdenum	Report Only
Nickel	420
Selenium	36
Zinc	2800

*Dry weight basis

B. Pathogen Control

All bulk sewage sludge that is applied to agricultural land, forest, a public contact site, a reclamation site, shall be treated by either Class A or Class B pathogen reduction requirements as defined above in Section I.B.3.

C. Management Practices

1. Bulk sewage sludge shall not be applied to agricultural land, forest, a public contact site, or a reclamation site that is flooded, frozen, or snow-covered so that the bulk sewage sludge enters a wetland or other waters in the State.

2. Bulk sewage sludge not meeting Class A requirements shall be land applied in a manner which complies with the Management Requirements in accordance with 30 TAC § 312.44.

3. Bulk sewage sludge shall be applied at or below the agronomic rate of the cover crop.

4. An information sheet shall be provided to the person who receives bulk sewage sludge sold or given away. The information sheet shall contain the following information:

   a. The name and address of the person who prepared the sewage sludge that is sold or given away in a bag or other container for application to the land.

   b. A statement that application of the sewage sludge to the land is prohibited except in accordance with the instruction on the label or information sheet.

   c. The annual whole sludge application rate for the sewage sludge application rate for the sewage sludge that does not cause any of the cumulative pollutant loading rates in Table 2 above to be exceeded, unless the pollutant concentrations in Table 3 found in Section II above are met.

D. Notification Requirements

1. If bulk sewage sludge is applied to land in a State other than Texas, written notice shall be provided prior to the initial land application to the permitting authority for the State in which the bulk sewage sludge is proposed to be applied. The notice shall include:

   a. The location, by street address, and specific latitude and longitude, of each land application site.

   b. The approximate time period bulk sewage sludge will be applied to the site.

   c. The name, address, telephone number, and National Pollutant Discharge Elimination System permit number (if appropriate) for the person who will apply the bulk sewage sludge.

2. The permittee shall give 180 days prior notice to the Executive Director in care of the Wastewater Permitting Section (MC 148) of the Water Quality Division of any change planned in the sewage sludge disposal practice.

E. Record keeping Requirements

The sludge documents will be retained at the facility site and/or shall be readily available for review by a TCEQ representative. The person who prepares bulk sewage sludge or a sewage sludge material shall develop the following information and shall retain the information at the facility site and/or shall be readily available for review by a TCEQ representative for a period of five years. If the permittee supplies the sludge to another person who land applies the sludge, the permittee shall notify the land applier of the requirements for record keeping found in 30 TAC § 312.47 for persons who land apply.

1. The concentration (mg/kg) in the sludge of each pollutant listed in Table 3 above and the applicable pollutant concentration criteria (mg/kg), or the applicable cumulative pollutant loading rate and the applicable cumulative pollutant loading rate limit (lbs/ac) listed in Table 2 above.

2. A description of how the pathogen reduction requirements are met (including site restrictions for Class B sludge, if applicable).

3. A description of how the vector attraction reduction requirements are met.

4. A description of how the management practices listed above in Section II.C are being met.

5. The following certification statement:

   "I certify, under penalty of law, that the applicable pathogen requirements in 30 TAC § 312.82(a) or (b) and the vector attraction reduction requirements in 30 TAC § 312.83(b) have been met for each site on which bulk sewage sludge is applied. This determination has been made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the management practices have been met. I am aware that there are significant penalties for false certification including fine and imprisonment."

6. The recommended agronomic loading rate from the references listed in Section II.C.3. above, as well as the actual agronomic loading rate shall be retained. The person who applies bulk sewage sludge or a sewage sludge material shall develop the following information and shall retain the information at the facility site and/or shall be readily available for review by a TCEQ representative indefinitely. If the permittee supplies the sludge to another person who land applies the sludge, the permittee shall notify the land applier of the requirements for record keeping found in 30 TAC § 312.47 for persons who land apply:

a. A certification statement that all applicable requirements (specifically listed) have been met, and that the permittee understands that there are significant penalties for false certification including fine and imprisonment. See 30 TAC § 312.47(a)(4)(A)(ii) or 30 TAC § 312.47(a)(5)(A)(ii), as applicable, and to the permittee's specific sludge treatment activities.

b. The location, by street address, and specific latitude and longitude, of each site on which sludge is applied.

c. The number of acres in each site on which bulk sludge is applied.

d. The date and time sludge is applied to each site.

e. The cumulative amount of each pollutant in pounds/acre listed in Table 2 applied to each site.

f. The total amount of sludge applied to each site in dry tons.

The above records shall be maintained on-site on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

F. Reporting Requirements

The permittee shall report annually to the TCEQ Regional Office (MC Region 3) and Water Quality Compliance Monitoring Team (MC 224) of the Enforcement Division, by September 30 of each year the following information:

1. Results of tests performed for pollutants found in either Table 2 or 3 as appropriate for the permittee's land application practices.

2. The frequency of monitoring listed in Section I.C. that applies to the permittee.

3. Toxicity Characteristic Leaching Procedure (TCLP) results.

4. Identity of hauler(s) and TCEQ transporter number.

5. PCB concentration in sludge in mg/kg.

6. Date(s) of disposal.

7. Owner of disposal site(s).

8. Texas Commission on Environmental Quality registration number, if applicable.

9. Amount of sludge disposal dry weight (lbs/acre) at each disposal site.

10. The concentration (mg/kg) in the sludge of each pollutant listed in Table 1 (defined as a monthly average) as well as the applicable pollutant concentration criteria (mg/kg) listed in Table 3 above, or the applicable pollutant loading rate limit (lbs/acre) listed in Table 2 above if it exceeds 90% of the limit.

11. Level of pathogen reduction achieved (Class A or Class B).

12. Alternative used as listed in Section I.B.3.(a. or b.). Alternatives describe how the pathogen reduction requirements are met. If Class B sludge, include information on how site restrictions were met.

13. Vector attraction reduction alternative used as listed in Section I.B.4.

14. Annual sludge production in dry tons/year.

15. Amount of sludge land applied in dry tons/year.

16. The certification statement listed in either 30 TAC § 312.47(a)(4)(A)(ii) or 30 TAC § 312.47(a)(5)(A)(ii) as applicable to the permittee's sludge treatment activities, shall be attached to the annual reporting form.

17. When the amount of any pollutant applied to the land exceeds 90% of the cumulative pollutant loading rate for that pollutant, as described in Table 2, the permittee shall report the following information as an attachment to the annual reporting form.

    a. The location, by street address, and specific latitude and longitude.

    b. The number of acres in each site on which bulk sewage sludge is applied.

    c. The date and time bulk sewage sludge is applied to each site.

    d. The cumulative amount of each pollutant (i.e., pounds/acre) listed in Table 2 in the bulk sewage sludge applied to each site.

    e. The amount of sewage sludge (i.e., dry tons) applied to each site.

    The above records shall be maintained on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

SECTION III. REQUIREMENTS APPLYING TO ALL SEWAGE SLUDGE DISPOSED IN A MUNICIPAL SOLID WASTE LANDFILL

A. The permittee shall handle and dispose of sewage sludge in accordance with 30 TAC § 330 and all other applicable state and federal regulations to protect public health and the environment from any reasonably anticipated adverse effects due to any toxic pollutants that may be present. The permittee shall ensure that the sewage sludge meets the requirements in 30 TAC § 330 concerning the quality of the sludge disposed in a municipal solid waste landfill.

B. If the permittee generates sewage sludge and supplies that sewage sludge to the owner or operator of a municipal solid waste landfill (MSWLF) for disposal, the permittee shall provide to the owner or operator of the MSWLF appropriate information needed to be in compliance with the provisions of this permit.

C. The permittee shall give 180 days prior notice to the Executive Director in care of the Wastewater Permitting Section (MC 148) of the Water Quality Division of any change planned in the sewage sludge disposal practice.

D. Sewage sludge shall be tested annually in accordance with the method specified in both 40 CFR Part 261, Appendix II and 40 CFR Part 268, Appendix I (Toxicity Characteristic Leaching Procedure) or other method, which receives the prior approval of the TCEQ for contaminants listed in Table 1 of 40 CFR § 261.24. Sewage sludge failing this test shall be managed according to RCRA standards for generators of hazardous waste, and the waste's disposition must be in accordance with all applicable requirements for hazardous waste processing, storage, or disposal.

Following failure of any TCLP test, the management or disposal of sewage sludge at a facility other than an authorized hazardous waste processing, storage, or disposal facility shall be prohibited until such time as the permittee can demonstrate the sewage sludge no longer exhibits the hazardous waste toxicity characteristics (as demonstrated by the results of the TCLP tests). A written report shall be provided to both the TCEQ Registration and Reporting Section (MC 129) of the Permitting and Remediation Support Division and the Regional Director (MC Region 3) of the appropriate TCEQ field office within 7 days after failing the TCLP Test.

The report shall contain test results, certification that unauthorized waste management has stopped and a summary of alternative disposal plans that comply with RCRA standards for the management of hazardous waste. The report shall be addressed to: Director, Registration, Review, and Reporting Division (MC 129), Texas Commission on Environmental Quality, P. O. Box 13087, Austin, Texas 78711-3087. In addition, the permittee shall prepare an annual report on the results of all sludge toxicity testing. This annual report shall be submitted to the TCEQ Regional Office (MC Region 3) and the Water Quality Compliance Monitoring Team (MC 224) of the Enforcement Division by September 30 of each year.

E. Sewage sludge shall be tested as needed, in accordance with the requirements of 30 TAC Chapter 330.

F. Record keeping Requirements

The permittee shall develop the following information and shall retain the information for five years.

1. The description (including procedures followed and the results) of all liquid Paint Filter Tests performed.

2. The description (including procedures followed and results) of all TCLP tests performed.

The above records shall be maintained on-site on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

G. Reporting Requirements

The permittee shall report annually to the TCEQ Regional Office (MC Region 3) and Water Quality Compliance Monitoring Team (MC 224) of the Enforcement Division by September 30 of each year the following information:

1. Toxicity Characteristic Leaching Procedure (TCLP) results.
2. Annual sludge production in dry tons/year.
3. Amount of sludge disposed in a municipal solid waste landfill in dry tons/year.
4. Amount of sludge transported interstate in dry tons/year.
5. A certification that the sewage sludge meets the requirements of 30 TAC § 330 concerning the quality of the sludge disposed in a municipal solid waste landfill.
6. Identity of hauler(s) and transporter registration number.
7. Owner of disposal site(s).
8. Location of disposal site(s).
9. Date(s) of disposal.

The above records shall be maintained on-site on a monthly basis and shall be made available to the Texas Commission on Environmental Quality upon request.

OTHER REQUIREMENTS

1. The permittee shall employ or contract with one or more licensed wastewater treatment facility operators or wastewater system operations companies holding a valid license or registration according to the requirements of 30 TAC Chapter 30, Occupational Licenses and Registrations and in particular 30 TAC Chapter 30, Subchapter J, Wastewater Operators and Operations Companies.

   This Category A facility must be operated by a chief operator or an operator holding a Category A license or higher. The facility must be operated a minimum of five days per week by the licensed chief operator or an operator holding the required level of license or higher. The licensed chief operator or operator holding the required level of license or higher must be available by telephone or pager seven days per week. Where shift operation of the wastewater treatment facility is necessary, each shift that does not have the on-site supervision of the licensed chief operator must be supervised by an operator in charge who is licensed not less than one level below the category for the facility.

2. The facility is not located in the Coastal Management Program boundary.

3. Chronic toxic criteria apply at the edge of the mixing zone. The mixing zone is defined as 300 feet downstream and 100 feet upstream from the point of discharge.

4. The permittee is hereby placed on notice that this permit may be reviewed by the TCEQ after the completion of any new intensive water quality survey on Segment No. 0214 of the Red River Basin and any subsequent updating of the water quality model for Segment No. 0214, in order to determine if the limitations and conditions contained herein are consistent with any such revised model. The permit may be amended, pursuant to 30 TAC §305.62, as a result of such review. The permittee is also hereby placed on notice that effluent limits may be made more stringent at renewal based on, for example, any change to modeling protocol approved in the TCEQ Continuing Planning Process.

5. In accordance with 30 TAC §319.9, a permittee that has at least twelve months of uninterrupted compliance with its bacteria limit may notify the commission in writing of its compliance and request a less frequent measurement schedule. To request a less frequent schedule, the permittee shall submit a written request to the TCEQ Wastewater Permitting Section (MC 148) for each phase that includes a different monitoring frequency. The request must contain all of the reported bacteria values (Daily Avg. and Daily Max/Single Grab) for the twelve consecutive months immediately prior to the request. If the Executive Director finds that a less frequent measurement schedule is protective of human health and the environment, the permittee will be given a less frequent measurement schedule. For this permit, 5/week will be reduced to 3/week, **A violation of any bacteria limit by a facility that has been granted a less frequent measurement schedule will require the permittee to return to the standard frequency schedule**, and the permittee may not apply for another reduction in measurement frequency for at least 24 months from the date of the last violation. The Executive Director may establish a more frequent measurement schedule if necessary to protect human health or the environment.

CONTRIBUTING INDUSTRIES AND PRETREATMENT REQUIREMENTS

1. The permittee shall operate an industrial pretreatment program in accordance with Sections 402(b)(8) and (b)(9) of the Clean Water Act, the General Pretreatment Regulations (40 CFR Part 403) and the approved **City of Wichita Falls** POTW pretreatment program submitted by the permittee. The pretreatment program was approved by the TCEQ on **December 24, 1983,** and modified on **April 29, 1994,** and **December 10, 2002.**

   The legal authority and the POTW's pretreatment program are not in compliance with the current 40 CFR Part 403 regulations *[rev. Federal Register/ Vol. 70/ No. 198/ Friday, October 14, 2005/ Rules and Regulations, pages 60134-60798]* and the 30 TAC Chapter 315, as amended. In order to ensure that the permittee has a program to assure compliance with such pretreatment standards and requirements, the permittee shall submit a modification to their pretreatment program containing all required [*i.e.* more stringent] Streamlining Rule provisions to the Executive Director care of the Storm Water & Pretreatment Team (MC148) of the Water Quality Division within **twelve (12) months** of the issued date of this permit. This submission shall be signed and certified by the permittee *[according to 40 CFR §122.41(k)]*.

   The POTW pretreatment program is hereby incorporated by reference and shall be implemented in a manner consistent with the following requirements:

   a. Industrial user (IU) information shall be kept current according to 40 CFR §§403.8(f)(2)(i) and (ii) and updated at a frequency set forth in the approved pretreatment program to reflect accurate characterization of all IUs;

   b. The frequency and nature of IU compliance monitoring activities by the permittee shall be consistent with the approved POTW pretreatment program and commensurate with the character, consistency, and volume of waste. The permittee is required to inspect and sample the effluent from each significant industrial user (SIU) at least once per year, except as specified in 40 CFR §403.8 (f)(2)(v). This is in addition to any industrial self-monitoring activities;

   c. The permittee shall enforce and obtain remedies for IU noncompliance with applicable pretreatment standards and requirements and the approved POTW pretreatment program;

   d. The permittee shall control through permit, order, or similar means, the contribution to the POTW by each IU to ensure compliance with applicable pretreatment standards and requirements and the approved POTW pretreatment program. In the case of SIUs (identified as significant under 40 CFR §403.3 (v)), this control shall be achieved through individual permits or general control mechanisms, in accordance with 40 CFR §403.8(f)(1)(iii).

      Both individual and general control mechanisms must be enforceable and contain, at a minimum, the following conditions:

      (1) Statement of duration (in no case more than five years);
      (2) Statement of non-transferability without, at a minimum, prior notification to the POTW and provision of a copy of the existing control mechanism to the new owner or operator;
      (3) Effluent limits, which may include enforceable best management practices (BMPs), based on applicable general pretreatment standards, categorical pretreatment standards, local limits, and State and local law;
      (4) Self-monitoring, sampling, reporting, notification and record keeping requirements, identification of the pollutants to be monitored (including, if applicable, the process for seeking a waiver for a pollutant neither present nor expected to be present in the IU's discharge in accordance with 40 CFR §403.12(e)(2), or a specific waived pollutant in the case of an individual control mechanism), sampling location, sampling frequency, and sample type, based

on the applicable general pretreatment standards in 40 CFR Part 403, categorical pretreatment standards, local limits, and State and local law;

(5) Statement of applicable civil and criminal penalties for violation of pretreatment standards and requirements, and any applicable compliance schedule. Such schedules may not extend the compliance date beyond federal deadlines; and,

(6) Requirements to control slug discharges, if determined by the POTW to be necessary.

e. For those IUs who are covered by a general control mechanism, in order to implement 40 CFR §403.8(f)(1)(iii)(A)(2), a monitoring waiver for a pollutant neither present nor expected to be present in the IU's discharge is not effective in the general control mechanism until after the POTW has provided written notice to the SIU that such a waiver request has been granted in accordance with 40 CFR §403.12(e)(2).

f. The permittee shall evaluate, whether each SIU needs a plan or other action to control slug discharges, in accordance with 40 CFR §403.8(f)(2)(vi). If the POTW decides that a slug control plan is needed, the plan shall contain at least the minimum elements required in 40 CFR §403.8(f)(2)(vi);

g. The permittee shall provide adequate staff, equipment, and support capabilities to carry out all elements of the pretreatment program; and,

h. The approved program shall not be modified by the permittee without the prior approval of the Executive Director, according to 40 CFR §403.18.

2. The permittee is under a continuing duty to: establish and enforce specific local limits to implement the provisions of 40 CFR §403.5, develop and enforce local limits as necessary, and modify the approved pretreatment program as necessary to comply with federal, state and local law, as amended. The permittee may develop BMPs to implement paragraphs 40 CFR §§403.5(c)(1) and (c)(2). Such BMPs shall be considered local limits and pretreatment standards. The permittee is required to effectively enforce such limits and to modify their pretreatment program, including the Legal Authority, Enforcement Response Plan and/or Standard Operating Procedures, if required by the Executive Director to reflect changing conditions at the POTW. Substantial modifications will be approved in accordance with 40 CFR §403.18, and modifications will become effective upon approval by the Executive Director in accordance with 40 CFR §403.18.

   The permittee shall submit to the TCEQ Storm Water & Pretreatment Team (MC 148) of the Water Quality Division, within **sixty (60)** days of the issued date of this permit, either:

   (1) a written certification that a technical reassessment has been performed, and that the evaluation demonstrates that existing technically based local limits (TBLLs) attain the Texas Surface Water Quality Standards [30 TAC Chapter 307] in water in the state, are adequate to prevent pass through of pollutants, inhibition of or interference with the treatment facility, worker health and safety problems, and sludge contamination [Submit the Reassessment Form No. TCEQ-20221]; **or**

   (2) a written notification that a technical redevelopment of the current TBLLs, draft legal authority which incorporates such revisions, and any additional modifications to the pretreatment program, as required by 40 CFR Part 403 *[rev. 10/14/05]*, applicable state and local law, including an Enforcement Response Plan and Standard Operating Procedures and all required [*i.e.* more stringent] Streamlining Rule provisions, will be submitted within **twelve (12) months** of the issued date of this permit. The POTW is required to evaluate any enforceable BMP loadings during the redevelopment of the current TBLLs. The technical redevelopment of the current TBLLs should be developed in accordance with EPA's *Local Limits Development Guidance*, July 2004, and EPA Region 6's Technically Based Local Limits Development Guidance, October 12, 1993. This submission shall be signed and certified by the permittee *[according to 40 CFR §122.41(k)]*.

If after review of the substantial modification submission, the Executive Director determines that the submission does not comply with applicable requirements, including 40 CFR §§403.8 and 403.9, the Executive Director will notify the permittee. According to 40 CFR §403.11(c), the notification will include suggested modifications to bring the substantial modification submission into compliance with applicable requirements, including 40 CFR §§403.8(b) and (f), and 40 CFR §403.9(b). In such a case, revised information will be necessary for the Executive Director to make a determination on whether to approve or deny the permittee's substantial modification submission.

Upon approval by the Executive Director of the substantial modification to this approved POTW pretreatment program, the requirement to develop and enforce specific prohibitions and/or limits to implement the prohibitions and limits set forth in 40 CFR §§403.5 (a)(1), (b), (c)(1) and (3), and (d) is a condition of this permit. The specific prohibitions set out in 40 CFR §403.5(b) shall be enforced by the permittee unless modified under this provision.

3. The permittee shall analyze the treatment facility influent and effluent for the presence of the toxic pollutants listed in the Texas Surface Water Quality Standards [30 TAC Chapter 307], and in 40 CFR Part 122 Appendix D Table II at least **once per six months** and the toxic pollutants in Table III at least **once per three months.** If, based upon information available to the permittee, there is reason to suspect the presence of any toxic or hazardous pollutant listed in 40 CFR Part 122 Appendix D Table V, or any other pollutant, known or suspected to adversely affect treatment plant operation, receiving water quality, or solids disposal procedures, analysis for those pollutants shall be performed at least **once per three months** on both the influent and the effluent.

   The influent and effluent samples collected shall be composite samples consisting of at least 12 aliquots collected at approximately equal intervals over a representative 24 hour period and composited according to flow. Sampling and analytical procedures shall be in accordance with guidelines established in 40 CFR Part 136, as amended; as approved by the EPA through the application for alternate test procedures; or as suggested in Tables 8 and 9 of the *Procedures to Implement the Texas Surface Water Quality Standards,* January 2003, as amended and adopted by the TCEQ. The effluent samples shall be analyzed to the minimum analytical level (MAL). Where composite samples are inappropriate, due to sampling, holding time, or analytical constraints, at least four (4) grab samples, taken at equal intervals over a representative 24 hour period, shall be taken.

4. The permittee shall prepare annually a list of IUs which during the preceding twelve (12) months were in significant noncompliance (SNC) with applicable pretreatment requirements. For the purposes of this section of the permit, "Contributing Industries and Pretreatment Requirements", SNC shall be determined based upon the more stringent of either criteria established at 40 CFR §403.8(f)(2)(viii) *[rev. 10/14/05]* or criteria established in the approved POTW pretreatment program. This list is to be published annually during the month of **January** in a newspaper of general circulation that provides meaningful public notice within the jurisdiction(s) served by the POTW.

   In addition, each **January** the permittee shall submit an updated pretreatment program annual status report, in accordance with 40 CFR §§403.12(i) and (m), to the TCEQ Storm Water & Pretreatment Team (MC148) of the Water Quality Division. The report shall contain the following information as well as the information on the tables in this section. The report summary shall be submitted on the Pretreatment Performance Summary (PPS) form [TCEQ-20218].

   a. An updated list of all regulated IUs as indicated in this section. For each listed IU, the following information shall be included:

      (1) Standard Industrial Classification (SIC) or North American Industry Classification System (NAICS) code *and* categorical determination.

(2) If the pretreatment program has been modified and approved to incorporate reduced monitoring for any of the categorical IUs as provided by 40 CFR Part 403 [rev. 10/14/05], then the list must also identify:

* categorical IUs subject to the conditions for reduced monitoring and reporting requirements under 40 CFR §§ 403.12(e)(1) and (3);
* those IUs that are non-significant categorical industrial users (NSCIUs) under 40 CFR §403.3(v)(2); and
* those IUs that are middle tier categorical industrial users (MTCIUs) under 40 CFR §403.12(e)(3).

(3) Control mechanism status.

* Indicate whether the IU has an effective individual or general control mechanism, and the date such control mechanism was last issued, reissued, or modified;
* Indicate which IUs were added to the system, or newly identified, during the pretreatment year reporting period;
* Include the type of general control mechanisms; and
* Report all NSCIU annual evaluations performed, as applicable.

(4) A summary of all compliance monitoring activities performed by the POTW during the pretreatment year reporting period. The following information shall be reported:

* Total number of inspections performed; and
* Total number of sampling events conducted.

(5) Status of IU compliance with effluent limitations, reporting, and narrative standard (which may include enforceable BMPs, narrative limits, and/or operational standards) requirements. Compliance status shall be defined as follows:

* Compliant (C) - no violations during the pretreatment year reporting period;
* Non-compliant (NC) - one or more violations during the pretreatment year reporting period but does not meet the criteria for SNC; and
* Significant Noncompliance (SNC) - in accordance with requirements described above in this section.

(6) For noncompliant IUs indicate the nature of the violations, the type and number of actions taken (notice of violation, administrative order, criminal or civil suit, fines or penalties collected, etc.) and current compliance status. If any IU was on a schedule to attain compliance with effluent limits or narrative standards, indicate the date the schedule was issued, and the date compliance is to be attained.

b. A list of each IU whose authorization to discharge was terminated or revoked during the pretreatment year reporting period and the reason for termination.

c. A report on any interference, pass through, upset, or POTW permit violations known or suspected to be caused by IUs and response actions taken by the permittee.

d. The results of all influent and effluent analyses performed pursuant to Item 3 of this section.

e. An original newspaper public notice, or copy of the newspaper publication with official affidavit, of the list of IUs that meet the criteria of SNC, giving the name of the newspaper and date the list was

published.

f. The daily average water quality based effluent concentrations (from the TCEQ's Texas Toxicity Modeling Program (TexTox)) necessary to attain the Texas Surface Water Quality Standards, 30 TAC Chapter 307, in water in the state.

g. The maximum allowable headworks loading (MAHL) in pounds per day (lb/day) of the approved TBLLs or for each pollutant of concern (POC) for which the permittee has calculated a MAHL. In addition, the influent loading as a percent of the MAHL, using the annual average flow of the wastewater treatment plant in million gallons per day (MGD) during the pretreatment year reporting period, for each pollutant that has an adopted TBLL or for each POC for which the permittee has calculated a MAHL. (See Endnotes No. 2 at the end of this section for the influent loading as a percent of the MAHL equation)

h. The permittee may submit the updated pretreatment program annual status report information in tabular form using the example table format provided. Please attach, on a separate sheet, explanations to document the various pretreatment activities, including IU permits that have expired, BMP violations, and any sampling events that were not conducted by the permittee as required.

i. A summary of changes to the POTW's pretreatment program that have not been previously reported to the Approval Authority.

5. The permittee shall provide adequate written notification to the Executive Director care of the Wastewater Permitting Section (MC 148) of the Water Quality Division, within 30 days of the permittee's knowledge of the following:

   a. Any new introduction of pollutants into the treatment works from an indirect discharger which would be subject to Sections 301 and 306 of the Clean Water Act if the indirect discharger was directly discharging those pollutants; and

   b. Any substantial change in the volume or character of pollutants being introduced into the treatment works by a source introducing pollutants into the treatment works at the time of issuance of the permit.

   Adequate notice shall include information on the quality and quantity of effluent to be introduced into the treatment works, and any anticipated impact of the change on the quality or quantity of effluent to be discharged from the POTW.

Revised February 2008

TPDES Pretreatment Program Annual Report Form for Updated Industrial Users List

Reporting month/year: _____, ____ to _____, ____

TPDES Permit No.: _____ Permittee:_____ Treatment Plant: _____

PRETREATMENT PROGRAM STATUS REPORT UPDATED INDUSTRIAL USERS[1] LIST																	
Industrial User Name	SIC or NAICS Code	CIU[2]	CONTROL MECHANISM				New User[3] (Y or N)	Times Inspected by the CA	Times Sampled by the CA	COMPLIANCE STATUS During the Pretreatment Year Reporting Period[4] (C = Compliant, NC = Noncompliant, SNC= Significant Noncompliance)						
			Y/N or NR[5]	IND or GEN or NR	Last Action[6]	TBLLs or TBLLs only[7]				REPORTS				Certifications	Effluent Limits	Narrative Standards
										BMR	90-Day	Semi-Annual	Self-Monitoring[8]	NSCIU		

1 Include all significant industrial users (SIUs), non-significant categorical industrial users (NSCIUs) as defined in 40 CFR §403.3(v)(2), and/or middle tier categorical industrial users (MTCIUs) as defined in 40 CFR §403.12(e)(3). Please do not include non-significant noncategorical IUs that are covered under best management practices (BMPs) or general control mechanisms.

2 Categorical determination (include 40 CFR citation and NSCIU or MTCIU status, if applicable).

3 Indicate whether the IU is a new user. If the answer is No or N, then indicate the expiration date of the last issued IU permit.

4 The term SNC applies to a broader range of violations, such as daily maximum, long-term average, instantaneous limits, and narrative standards (which may include enforceable BMPs, narrative limits and/or operational standards). Any other violation, or group of violations, which the POTW determines will adversely affect the operation or implementation of the local Pretreatment Program now includes BMP violations (40 CFR §403.8(f)(2)(viii)(H)).

5 Code NR= None required (NSCIUs only); IND = individual control mechanism; GEN = general control mechanism. Include as a footnote (or on a separate page) the name of the general control mechanism used for similar groups of IUs, identify the similar types of operations and types of wastes that are the same for each general control mechanism. Any BMPs through general control mechanisms that are applied to nonsignificant IUs need to be reported separately, *e.g.* the sector type and BMP description.

6 Permit or NSCIU evaluations as applicable.

7 According to 40 CFR §403.12(i)(1), indicate whether the IU is subject to technically based local limits (TBLLs) that are more stringent than categorical pretreatment standards, *e.g.* where there is one end-of-pipe sampling point at a CIU, and you have determined that the TBLLs are more stringent than the categorical pretreatment standards for any pollutant at the end-of-pipe sampling point; **OR** the IU is subject only to local limits (TBLLs only), *e.g.* the IU is a non-categorical SIU subject only to TBLLs at the end-of-pipe sampling point.

8 For those IUs where a monitoring waiver has been granted, please add the code "W" (after either C, NC, or SNC codes) and indicate the pollutant(s) for which the waiver has been granted.

TPDES Pretreatment Program Annual Report Form for Industrial User Inventory Modifications

Reporting month/year: _____, ____ to _____, ____

TPDES Permit No: _____ Permittee: _____ Treatment Plant: _____

INDUSTRIAL USER INVENTORY MODIFICATIONS					
FACILITY NAME, ADDRESS AND CONTACT PERSON	ADD, CHANGE, DELETE (Including categorical reclassification to NSCIU or MTCIU)	IF DELETION: Reason For Deletion	IF ADDITION OR SIGNIFICANT CHANGE:		
			PROCESS DESCRIPTION	POLLUTANTS (Including any sampling waiver given for each pollutant not present)	FLOW RATE [9] (In gallons per day) R = Regulated U = Unregulated T = Total

9 For NSCIUs, total flow must be given, if regulated flow is not determined.

TPDES Pretreatment Program Annual Report Form for Enforcement Actions Taken

Reporting month/year: _____, ____ to _____, ____

TPDES Permit No: _____ Permittee:_____ Treatment Plant: _____

Overall SNC ___%
SNC [10] based on: Effluent Violations____% Reporting Violations____% Narrative Standard Violations___%

Noncompliant Industrial Users - Enforcement Actions Taken															
Industrial User. Name	Nature of Violation [11]				Number of Actions Taken					Penalties Collected (Do not Include Surcharge)	Compliance Schedule			Current Status Returned to Compliance: (Y or N)	Comments
	Effluent Limits	Reports	NSCIU Certifications	Narrative Standards	NOV	A.O.	Civil	Criminal	Other		Y or N	Date Issued	Date Due		

10 # %
___ ___ Pretreatment Standards [WENDB-PSNC] (Local Limits/Categorical Standards)
___ ___ Reporting Requirements [WENDB-PSNC]
___ ___ Narrative Standards

11 Please specify a separate number for each type of violation, *e.g.* report, notification, and/or NSCIU certification.

TPDES Pretreatment Program Annual Report Form for Influent and Effluent Monitoring Results[1]

Reporting month/year: _____, ____ to _____, ____

TPDES Permit No.: _____ Permittee: _____ Treatment Plant: _____

PRETREATMENT PROGRAM INFLUENT AND EFFLUENT MONITORING RESULTS											
POLLUTANT	**MAHL, if Applicable in lb/day**	**Influent Measured in µg/L (Actual Concentration or < MAL)**				**Average Influent % of the MAHL[2]**	**Daily Average Effluent Limit (µg/L)[3]**	**Effluent Measured in µg/L (Actual Concentration or < MAL)[4]**			
		Date	**Date**	**Date**	**Date**			**Date**	**Date**	**Date**	**Date**
METALS, CYANIDE AND PHENOLS											
Antimony, Total											
Arsenic, Total											
Beryllium, Total											
Cadmium, Total											
Chromium, Total											
Chromium (Hex)											
Chromium (Tri)[5]											
Copper, Total											
Lead, Total											
Mercury, Total											
Nickel, Total											
Selenium, Total											
Silver, Total											
Thallium, Total											
Zinc, Total											

PRETREATMENT PROGRAM INFLUENT AND EFFLUENT MONITORING RESULTS

POLLUTANT	MAHL, if Applicable in lb/day	Influent Measured in µg/L (Actual Concentration or < MAL)				Average Influent % of the MAHL[2]	Daily Average Effluent Limit (µg/L)[3]	Effluent Measured in µg/L (Actual Concentration or < MAL)[4]			
		Date	Date	Date	Date			Date	Date	Date	Date
Cyanide, Available[6]											
Cyanide, Total											
Phenols, Total											
VOLATILE COMPOUNDS											
Acrolein											
Acrylonitrile											
Benzene											
Bromoform							See TTHM				
Carbon Tetrachloride											
Chlorobenzene											
Chlorodibromomethane							See TTHM				
Chloroethane											
2-Chloroethylvinyl Ether											
Chloroform							See TTHM				
Dichlorobromomethane							See TTHM				
1,1-Dichloroethane											
1,2-Dichloroethane											
1,1-Dichloroethylene											
1,2-Dichloropropane											

PRETREATMENT PROGRAM INFLUENT AND EFFLUENT MONITORING RESULTS

POLLUTANT	MAHL, if Applicable in lb/day	Influent Measured in µg/L (Actual Concentration or ≤ MAL)				Average Influent % of the MAHL[2]	Daily Average Effluent Limit (µg/L)[3]	Effluent Measured in µg/L (Actual Concentration or < MAL)[4]			
		Date	Date	Date	Date			Date	Date	Date	Date
1,3-Dichloropropylene											
Ethyl benzene											
Methyl Bromide											
Methyl Chloride											
Methylene Chloride											
1,1,2,2-Tetra-chloroethane											
Tetrachloroethylene											
Toluene											
1,2-Trans-Dichloroethylene											
1,1,1-Trichloroethane											
1,1,2-Trichloroethane											
Trichloroethylene											
Vinyl Chloride											
ACID COMPOUNDS											
2-Chlorophenol											
2,4-Dichlorophenol											
2,4-Dimethylphenol											
4,6-Dinitro-o-Cresol											
2,4-Dinitrophenol											
2-Nitrophenol											

PRETREATMENT PROGRAM INFLUENT AND EFFLUENT MONITORING RESULTS

POLLUTANT	MAHL, if Applicable in lb/day	Influent Measured in µg/L (Actual Concentration or < MAL)				Average Influent % of the MAHL [2]	Daily Average Effluent Limit (µg/L) [3]	Effluent Measured in µg/L (Actual Concentration or < MAL) [4]			
		Date	Date	Date	Date			Date	Date	Date	Date
4-Nitrophenol											
P-Chloro-m-Cresol											
Pentachlorophenol											
2,4,6-Trichlorophenol											
Phenol											
BASE/NEUTRAL COMPOUNDS											
Acenaphthene											
Acenaphthylene											
Anthracene											
Benzidine											
Benzo(a)Anthracene											
Benzo(a)Pyrene											
3,4-Benzofluoranthene											
Benzo(ghi)Perylene											
Benzo(k)Fluoranthene											
Bis(2-Chloroethoxy)Methane											
Bis(2-Chloroethyl)Ether											
Bis(2-Chloroisopropyl)Ether											
Bis(2-Ethylhexyl)Phthalate											

PRETREATMENT PROGRAM INFLUENT AND EFFLUENT MONITORING RESULTS

POLLUTANT	MAHL, if Applicable in lb/day	Influent Measured in µg/L (Actual Concentration or < MAL)				Average Influent % of the MAHL[2]	Daily Average Effluent Limit (µg/L)[3]	Effluent Measured in µg/L (Actual Concentration or < MAL)[4]			
		Date	Date	Date	Date			Date	Date	Date	Date
4-Bromophenyl Phenyl Ether											
Butylbenzyl Phthalate											
2-Chloronaphthalene											
4-Chlorophenyl Phenyl Ether											
Chrysene											
Dibenzo(a,h)Anthracene											
1,2-Dichlorobenzene											
1,3-Dichlorobenzene											
1,4-Dichlorobenzene											
3,3-Dichlorobenzidine											
Diethyl Phthalate											
Dimethyl Phthalate											
Di-n-Butyl Phthalate											
2,4-Dinitrotoluene											
2,6-Dinitrotoluene											
Di-n-Octyl Phthalate											
1,2-Diphenyl Hydrazine											
Fluoranthene											
Fluorene											
Hexachlorobenzene											

PRETREATMENT PROGRAM INFLUENT AND EFFLUENT MONITORING RESULTS

POLLUTANT	MAHL, if Applicable in lb/day	Influent Measured in µg/L (Actual Concentration or < MAL)				Average Influent % of the MAHL[2]	Daily Average Effluent Limit (µg/L)[3]	Effluent Measured in µg/L (Actual Concentration or < MAL)[4]			
		Date	Date	Date	Date			Date	Date	Date	Date
Hexachlorobutadiene											
Hexachloro-cyclopentadiene											
Hexachloroethane											
Indeno(1,2,3-cd)pyrene											
Isophorone											
Naphthalene											
Nitrobenzene											
N-Nitrosodimethylamine											
N-Nitrosodi-n-Propylamine											
N-Nitrosodiphenylamine											
Phenanthrene											
Pyrene											
1,2,4-Trichlorobenzene											
PESTICIDES											
Aldrin											
Alpha-hexachlorocyclohexane (BHC)											
beta-BHC											
gamma-BHC (Lindane)											

PRETREATMENT PROGRAM INFLUENT AND EFFLUENT MONITORING RESULTS

POLLUTANT	MAHL, if Applicable in lb/day	Influent Measured in µg/L (Actual Concentration or < MAL)				Average Influent % of the MAHL[2]	Daily Average Effluent Limit (µg/L)[3]	Effluent Measured in µg/L (Actual Concentration or < MAL)[4]			
		Date	Date	Date	Date			Date	Date	Date	Date
delta-BHC											
Chlordane											
4,4-DDT											
4,4-DDE											
4,4-DDD											
Dieldrin											
alpha-Endosulfan											
beta-Endosulfan											
Endosulfan Sulfate											
Endrin											
Endrin Aldehyde											
Heptachlor											
Heptachlor Epoxide											
Polychlorinated biphenols (PCBs) - The sum of PCB concentrations not to exceed daily average value											
PCB-1242							See PCBs				
PCB-1254							See PCBs				
PCB-1221							See PCBs				
PCB-1232							See PCBs				

PRETREATMENT PROGRAM INFLUENT AND EFFLUENT MONITORING RESULTS

POLLUTANT	MAHL, if Applicable in lb/day	Influent Measured in µg/L (Actual Concentration or < MAL)				Average Influent % of the MAHL[2]	Daily Average Effluent Limit (µg/L)[3]	Effluent Measured in µg/L (Actual Concentration or < MAL)[4]			
		Date	Date	Date	Date			Date	Date	Date	Date
PCB-1248							See PCBs				
PCB-1260							See PCBs				
PCB-1016							See PCBs				
Toxaphene											
ADDITIONAL TOXIC POLLUTANTS REGULATED UNDER 30 TAC CHAPTER 307											
Aluminum											
Barium											
Bis(chloromethyl) ether[7]											
Carbaryl											
Chloropyrifos											
Cresols											
2,4-D											
Danitol[8]											
Demeton											
Diazinon											
Dicofol											
Dioxin/Furans[9]											
Diuron											
Fluoride											

PRETREATMENT PROGRAM INFLUENT AND EFFLUENT MONITORING RESULTS

POLLUTANT	MAHL, if Applicable in lb/day	Influent Measured in µg/L (Actual Concentration or ≤ MAL)				Average Influent % of the MAHL[2]	Daily Average Effluent Limit (µg/L)[3]	Effluent Measured in µg/L (Actual Concentration or < MAL)[4]			
		Date	Date	Date	Date			Date	Date	Date	Date
Guthion											
Hexachlorophene											
Malathion											
Methoxychlor											
Methyl Ethyl Ketone											
Mirex											
Nitrate-Nitrogen											
N-Nitrosodiethylamine											
N-Nitro-di-n-Butylamine											
Parathion											
Pentachlorobenzene											
Pyridine											
1,2-Dibromoethane											
1,2,4,5-Tetrachlorobenzene											
2,4,5-TP (Silvex)											
Tributyltin[9]											
2,4,5-Trichlorophenol											
TTHM (Total Trihalomethanes)											

Footnotes:

1. It is advised that the permittee collect the influent and effluent samples considering flow detention time through each wastewater treatment plant (WWTP).

2. The MAHL of the approved TBLLs or for each pollutant of concern (POC) for which the permittee has calculated a MAHL. Only complete the column labeled, "Average Influent % of the MAHL", as a percentage, for pollutants that have approved TBLLs or for each POC for which the permittee has calculated a MAHL (U.S. Environmental Protection Agency Local Limits Development Guidance, July 2004, EPA933-R-04-002A).

   The % of the MAHL is to be calculated using the following formulas:

   Equation A: $L_{INF} = (C_{POLL} \times Q_{WWTP} \times 8.34) / 1000$

   Equation B: $L_{\%} = (L_{INF} / MAHL) \times 100$

   Where:

L_{INF} =	Current Average (Avg) influent loading in lb/day
C_{POLL} =	Avg concentration in µg/L of all influent samples collected during the pretreatment year.
Q_{WWTP} =	Annual average flow of the WWTP in MGD, defined as the arithmetic average of all daily flow determinations taken within the preceding 12 consecutive calendar months (or during the pretreatment year), and as described in the Definitions and Standard Permit Conditions section.
$L_{\%}$ =	% of the MAHL
MAHL =	Calculated MAHL in lb/day
8.34 =	Unit conversion factor

3. Daily average effluent limit (metal values are for total metals) as derived by the Texas Toxicity Modeling Program (TexTox). Effluent limits as calculated are designed to be protective of the Texas Surface Water Quality Standards. The permittee shall determine and indicate which effluent limit is the most stringent between the 30 TAC Chapter 319 (Hazardous Metal Rule), TexTox values, or any applicable TPDES permit limit in Effluent Limitations and Monitoring Requirements Section. Shaded blocks need not be filled in unless the permittee has received a permit requirement/limit for the particular parameter.

4. Minimum analytical levels (MALs) and analytical methods as suggested in Tables 8 and 9 of the Procedures to Implement the Texas Surface Water Quality Standards (January 2003), as amended and adopted by the TCEQ Commission. Pollutants that are not detectable above the MAL need to be reported as less than (<) the MAL numeric value.

5. Report result by subtracting Hexavalent Chromium from Total Chromium.

6. Either the method for Amenable to Chlorination or Weak-Acid Dissociable is authorized.

7. Hydrolyzes in water. Will not require permittee to analyze at this time.

8. EPA procedure not approved. Will not require permittee to analyze at this time.

9. Analyses are not required at this time for these pollutants unless there is reason to believe that these pollutants may be present.

BIOMONITORING REQUIREMENTS

CHRONIC BIOMONITORING REQUIREMENTS: FRESHWATER

The provisions of this Section apply to Outfall 001 for whole effluent toxicity testing (biomonitoring).

1. Scope, Frequency and Methodology

a. The permittee shall test the effluent for toxicity in accordance with the provisions below. Such testing will determine if an appropriately dilute effluent sample adversely affects the survival, reproduction, or growth of the test organisms.

b. The permittee shall conduct the following toxicity tests utilizing the test organisms, procedures and quality assurance requirements specified in this Part of the permit and in accordance with "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition" (EPA-821-R-02-013), or the most recent update:

1) Chronic static renewal 7-day survival and reproduction test using the water flea (*Ceriodaphnia dubia*) (Method 1002.0 or the most recent update). This test should be terminated when 60% of the surviving adults in the control produce three broods or at the end of eight days, whichever comes first. This test shall be conducted once per quarter.

2) Chronic static renewal 7-day larval survival and growth test using the fathead minnow (*Pimephales promelas*) (Method 1000.0 or the most recent update). A minimum of five replicates with eight organisms per replicate shall be used in the control and in each dilution. This test shall be conducted once per quarter.

The permittee must perform and report a valid test for each test species during the prescribed reporting period. An invalid test must be repeated during the same reporting period. An invalid test is herein defined as any test failing to satisfy the test acceptability criteria, procedures, and quality assurance requirements specified in the test methods and permit. All test results, valid or invalid, must be submitted as described below.

c. The permittee shall use five effluent dilution concentrations and a control in each toxicity test. These additional effluent concentrations are 27%, 35%, 47%, 63%, and 84% effluent. The critical dilution, defined as 63% effluent, is the effluent concentration representative of the proportion of effluent in the receiving water during critical low flow or critical mixing conditions.

d. This permit may be amended to require a Whole Effluent Toxicity (WET) limit, a Chemical-Specific (CS) limit, a Best Management Practice (BMP), additional toxicity testing, and/or other appropriate actions to address toxicity. The permittee may be required to conduct additional biomonitoring tests and/or a Toxicity Reduction Evaluation (TRE) if biomonitoring data indicate multiple numbers of unconfirmed toxicity events.

e. Testing Frequency Reduction for fathead minnow only

1) If none of the first four consecutive quarterly tests demonstrates significant lethal effects, the permittee may submit this information in writing and, upon approval, reduce the testing frequency to once per year for the fathead minnow.

2) If one or more of the first four consecutive quarterly tests demonstrates significant sub-lethal effects, the permittee shall continue quarterly testing for the fathead minnow until

four consecutive quarterly tests demonstrate no significant sub-lethal effects. At that time, the permittee may apply for the appropriate testing frequency reduction for the fathead minnow.

3) If one or more of the first four consecutive quarterly tests demonstrates significant lethal effects, the permittee shall continue quarterly testing for the fathead minnow until the permit is reissued. If a testing frequency reduction had been previously granted and a subsequent test demonstrates significant lethal effects, the permittee will resume a quarterly testing frequency for the fathead minnow until the permit is reissued.

2. Required Toxicity Testing Conditions

a. Test Acceptance - The permittee shall repeat any toxicity test, including the control and all effluent dilutions, which fail to meet the following criteria:

1) a control mean survival of 80% or greater;

2) a control mean number of water flea neonates per surviving adult of 15 or greater;

3) a control mean dry weight of surviving fathead minnow larvae of 0.25 mg or greater;

4) a control Coefficient of Variation percent (CV%) of 40 or less in between replicates for the young of surviving females in the water flea reproduction and survival test; and the growth and survival endpoints in the fathead minnow growth and survival test;

5) a critical dilution CV% of 40 or less for young of surviving females in the water flea reproduction and survival test; and the growth and survival endpoints for the fathead minnow growth and survival test. However, if statistically significant lethal or nonlethal effects are exhibited at the critical dilution, a CV% greater than 40 shall not invalidate the test;

6) a Percent Minimum Significant Difference of 47 or less for water flea reproduction;

7) a Percent Minimum Significant Difference of 30 or less for fathead minnow growth.

b. Statistical Interpretation

1) For the water flea survival test, the statistical analyses used to determine if there is a significant difference between the control and an effluent dilution shall be Fisher's Exact Test as described in the "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition" (EPA-821-R-02-013), or the most recent update thereof.

2) For the water flea reproduction test and the fathead minnow larval survival and growth tests, the statistical analyses used to determine if there is a significant difference between the control and an effluent dilution shall be in accordance with the methods described in the "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition" (EPA-821-R-02-013), or the most recent update thereof.

3) The permittee is responsible for reviewing test concentration-response relationships to ensure that calculated test-results are interpreted and reported correctly. The EPA manual,

"Method Guidance and Recommendation for Whole Effluent Toxicity (WET) Testing (40 CFR Part 136)" (EPA 821-B-00-004) provides guidance on determining the validity of test results.

4) If significant lethality is demonstrated (that is, there is a statistically significant difference in survival at the critical dilution when compared to the control), the conditions of test acceptability are met, and the survival of the test organisms are equal to or greater than 80% in the critical dilution and all dilutions below that, then the permittee shall report a survival No Observed Effect Concentration (NOEC) of not less than the critical dilution for the reporting requirements.

5) The NOEC is defined as the greatest effluent dilution at which no significant effect is demonstrated. The Lowest Observed Effect Concentration (LOEC) is defined as the lowest effluent dilution at which a significant effect is demonstrated. A significant effect is herein defined as a statistically significant difference at the 95% confidence level between the survival, reproduction, or growth of the test organism(s) in a specified effluent dilution compared to the survival, reproduction, or growth of the test organism(s) in the control (0% effluent).

6) The use of NOECs and LOECs assumes either a monotonic (continuous) concentration-response relationship or a threshold model of the concentration-response relationship. For any test result that demonstrates a non-monotonic (non-continuous) response, the NOEC should be determined based on the guidance manual referenced in Item 3 above.

7) Pursuant to the responsibility assigned to the permittee in Part 2.b.3), test results that demonstrate a non-monotonic (non-continuous) concentration-response relationship may be submitted, prior to the due date, for technical review. The above-referenced guidance manual will be used when making a determination of test acceptability.

8) Staff will review test results for consistency with rules, procedures, and permit requirements.

c. Dilution Water

1) Dilution water used in the toxicity tests shall be the receiving water collected at a point upstream of the discharge as close as possible to the discharge point, but unaffected by the discharge. Where the toxicity tests are conducted on effluent discharges to receiving waters that are classified as intermittent streams, or where the toxicity tests are conducted on effluent discharges where no receiving water is available due to zero flow conditions, the permittee shall; (a) substitute a synthetic dilution water that has a pH, hardness, and alkalinity similar to that of the closest downstream perennial water unaffected by the discharge, or (b) utilize the closest downstream perennial water unaffected by the discharge.

2) Where the receiving water proves unsatisfactory as a result of pre-existing instream toxicity (i.e. fails to fulfill the test acceptance criteria of item 2.a.), the permittee may substitute synthetic dilution water for the receiving water in all subsequent tests provided the unacceptable receiving water test met the following stipulations:

a) a synthetic lab water control was performed (in addition to the receiving water control) which fulfilled the test acceptance requirements of item 2.a;

b) the test indicating receiving water toxicity was carried out to completion (i.e., 7 days);

c) the permittee submitted all test results indicating receiving water toxicity with the reports and information required in Part 3 of this Section.

The synthetic dilution water shall have a pH, hardness, and alkalinity similar to that of the receiving water or a natural water in the drainage basin that is unaffected by the discharge, provided the magnitude of these parameters will not cause toxicity in a synthetic dilution water control that has been formulated to match the pH, hardness, and alkalinity naturally found in the receiving water.

Upon approval, the permittee may substitute other appropriate dilution water with chemical and physical characteristics similar to that of the receiving water.

d. Samples and Composites

1) The permittee shall collect a minimum of three composite samples from Outfall 001. The second and third composite samples will be used for the renewal of the dilution concentrations for each toxicity test.

2) The permittee shall collect the composite samples such that the samples are representative of any periodic episode of chlorination, biocide usage, or other potentially toxic substance discharged on an intermittent basis.

3) The permittee shall initiate the toxicity tests within 36 hours after collection of the last portion of the first composite sample. The holding time for any subsequent composite sample shall not exceed 72 hours. Samples shall be maintained at a temperature of 0-6 degrees Centigrade during collection, shipping, and storage.

4) If Outfall 001 ceases discharging during the collection of effluent samples, the requirements for the minimum number of effluent samples, the minimum numbers of effluent portions, and the sample holding time, are waived during that sampling period. However, the permittee must have collected an effluent composite sample volume sufficient to complete the required toxicity tests with renewal of the effluent. When possible, the effluent samples used for the toxicity tests shall be collected on separate days if the discharge occurs over multiple days. The effluent composite sample collection duration and the static renewal protocol associated with the abbreviated sample collection must be documented in the full report.

5) The effluent samples shall not be dechlorinated after sample collection.

3. Reporting

All reports, tables, plans, summaries, and related correspondence required in any Part of this Section shall be submitted to the attention of the Standards Implementation Team (MC 150) of the Water Quality Division. All DMRs, including DMRs with biomonitoring data, should be sent to the Enforcement Division (MC 224).

a. The permittee shall prepare a full report of the results of all tests conducted pursuant to this permit in accordance with the Report Preparation Section of "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition" (EPA-821-R-02-013), or the most recent update, for every valid and invalid toxicity test initiated

whether carried to completion or not. All full reports shall be retained for 3 years at the plant site and shall be available for inspection by TCEQ personnel.

b. A full report must be submitted with the first valid biomonitoring test results for each test species and with the first test results any time the permittee subsequently employs a different test laboratory. Full reports need not be submitted for subsequent testing unless specifically requested. The permittee shall routinely report the results of each biomonitoring test on the Table 1 forms provided with this permit. All Table 1 reports must include the information specified in the Table 1 form attached to this permit.

1) Annual biomonitoring test results are due on or before January 20th for biomonitoring conducted during the previous 12 month period.

2) Semiannual biomonitoring test results are due on or before July 20th and January 20th for biomonitoring conducted during the previous 6 month period.

3) Quarterly biomonitoring test results are due on or before April 20th, July 20th, October 20th, and January 20th, for biomonitoring conducted during the previous calendar quarter.

4) Monthly biomonitoring test results are due on or before the 20th day of the month following sampling.

c. Enter the following codes on the DMR for the appropriate parameters for valid tests only:

1) For the water flea, Parameter TLP3B, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0. "

2) For the water flea, Parameter TOP3B, report the NOEC for survival.

3) For the water flea, Parameter TXP3B, report the LOEC for survival.

4) For the water flea, Parameter TWP3B, enter a "1" if the NOEC for reproduction is less than the critical dilution; otherwise, enter a "0."

5) For the water flea, Parameter TPP3B, report the NOEC for reproduction.

6) For the water flea, Parameter TYP3B, report the LOEC for reproduction.

7) For the fathead minnow, Parameter TLP6C, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."

8) For the fathead minnow, Parameter TOP6C, report the NOEC for survival.

9) For the fathead minnow, Parameter TXP6C, report the LOEC for survival.

10) For the fathead minnow, Parameter TWP6C, enter a "1" if the NOEC for growth is less than the critical dilution; otherwise, enter a "0."

11) For the fathead minnow, Parameter TPP6C, report the NOEC for growth.

12) For the fathead minnow, Parameter TYP6C, report the LOEC for growth

d. Enter the following codes on the DMR for retests only:

1) For retest number 1, Parameter 22415, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."

2) For retest number 2, Parameter 22416, enter a "1" if the NOEC for survival is less than the critical dilution; otherwise, enter a "0."

4. Persistent Toxicity

The requirements of this Part apply only when a test demonstrates a significant effect at the critical dilution. A significant effect is defined as a statistically significant difference, at the 95% confidence level, between a specified endpoint (survival, growth, or reproduction) of the test organism in a specified effluent dilution when compared to the specified endpoint of the test organism in the control. Significant lethality is defined as a statistically significant difference in survival at the critical dilution when compared to the survival of the test organism in the control. Significant sublethality is defined as a statistically significant difference in growth/reproduction at the critical dilution when compared to the growth/reproduction of the test organism in the control.

a. The permittee shall conduct a total of 2 additional tests (retests) for any species that demonstrates a significant effect (lethal or sublethal) at the critical dilution. The two retests shall be conducted monthly during the next two consecutive months. The permittee shall not substitute either of the two retests in lieu of routine toxicity testing. All reports shall be submitted within 20 days of test completion. Test completion is defined as the last day of the test. The retests shall also be reported on the DMRs as specified in Part 3.d.

b. If the retests are performed due to a demonstration of significant lethality, and one or both of the two retests specified in item 4.a. demonstrates significant lethality, the permittee shall initiate the TRE requirements as specified in Part 5. The provisions of item 4.a. are suspended upon completion of the two retests and submittal of the TRE Action Plan and Schedule defined in Part 5.

If neither test demonstrates significant lethality and the permittee is testing under the reduced testing frequency provision of Part 1.e., the permittee shall return to a quarterly testing frequency for that species.

c. If the two retests are performed due to a demonstration of significant sublethality, and one or both of the two retests specified in item 4.a. demonstrates significant lethality, the permittee shall again perform two retests as stipulated in item 4.a.

d. If the two retests are performed due to a demonstration of significant sublethality, and neither test demonstrates significant lethality, the permittee shall continue testing at the quarterly frequency until such time that the permittee can invoke the reduced testing frequency provision specified in Part 1.e.

e. Regardless of whether retesting for lethal or sublethal effects, or a combination of the two, no more than one retest per month is required for a species.

5. Toxicity Reduction Evaluation

a. Within 45 days of the retest that demonstrates significant lethality, the permittee shall submit a General Outline for initiating a Toxicity Reduction Evaluation (TRE). The outline shall include, but not be limited to, a description of project personnel, a schedule for obtaining consultants (if

needed), a discussion of influent and/or effluent data available for review, a sampling and analytical schedule, and a proposed TRE initiation date.

b. Within 90 days of the retest that demonstrates significant lethality, the permittee shall submit a TRE Action Plan and Schedule for conducting a TRE. The plan shall specify the approach and methodology to be used in performing the TRE. A TRE is a step-wise investigation combining toxicity testing with physical and chemical analysis to determine actions necessary to eliminate or reduce effluent toxicity to a level not effecting significant lethality at the critical dilution. The TRE Action Plan shall lead to the successful elimination of significant lethality for both test species defined in item 1.b. As a minimum, the TRE Action Plan shall include the following:

1) Specific Activities - The TRE Action Plan shall specify the approach the permittee intends to utilize in conducting the TRE, including toxicity characterizations, identifications, confirmations, source evaluations, treatability studies, and/or alternative approaches. When conducting characterization analyses, the permittee shall perform multiple characterizations and follow the procedures specified in the document entitled, "Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I" (EPA/600/6-91/005F), or alternate procedures. The permittee shall perform multiple identifications and follow the methods specified in the documents entitled, "Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/080) and "Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/081). All characterization, identification, and confirmation tests shall be conducted in an orderly and logical progression;

2) Sampling Plan - The TRE Action Plan should describe sampling locations, methods, holding times, chain of custody, and preservation techniques. The effluent sample volume collected for all tests shall be adequate to perform the toxicity characterization/ identification/ confirmation procedures, and chemical-specific analyses when the toxicity tests show significant lethality. Where the permittee has identified or suspects specific pollutant(s) and/or source(s) of effluent toxicity, the permittee shall conduct, concurrent with toxicity testing, chemical-specific analyses for the identified and/or suspected pollutant(s) and/or source(s) of effluent toxicity;

3) Quality Assurance Plan - The TRE Action Plan should address record keeping and data evaluation, calibration and standardization, baseline tests, system blanks, controls, duplicates, spikes, toxicity persistence in the samples, randomization, reference toxicant control charts, as well as mechanisms to detect artifactual toxicity; and

4) Project Organization - The TRE Action Plan should describe the project staff, project manager, consulting engineering services (where applicable), consulting analytical and toxicological services, etc.

c. Within 30 days of submittal of the TRE Action Plan and Schedule, the permittee shall implement the TRE with due diligence.

d. The permittee shall submit quarterly TRE Activities Reports concerning the progress of the TRE. The quarterly reports are due on or before April 20th, July 20th, October 20th, and January 20th. The report shall detail information regarding the TRE activities including:

1) results and interpretation of any chemical-specific analyses for the identified and/or suspected pollutant(s) performed during the quarter;

2) results and interpretation of any characterization, identification, and confirmation tests performed during the quarter;

3) any data and/or substantiating documentation which identifies the pollutant(s) and/or source(s) of effluent toxicity;

4) results of any studies/evaluations concerning the treatability of the facility's effluent toxicity;

5) any data which identifies effluent toxicity control mechanisms that will reduce effluent toxicity to the level necessary to meet no significant lethality at the critical dilution; and

6) any changes to the initial TRE Plan and Schedule that are believed necessary as a result of the TRE findings.

Copies of the TRE Activities Report shall also be submitted to the U.S. EPA Region 6 office.

e. During the TRE, the permittee shall perform, at a minimum, quarterly testing using the more sensitive species; testing for the less sensitive species shall continue at the frequency specified in Part 1.b.

f. If the effluent ceases to effect significant lethality (herein as defined below) the permittee may end the TRE. A "cessation of lethality" is defined as no significant lethality for a period of 12 consecutive months with at least monthly testing. At the end of the 12 months, the permittee shall submit a statement of intent to cease the TRE and may then resume the testing frequency specified in Part 1.b. The permittee may only apply the "cessation of lethality" provision once.

This provision accommodates situations where operational errors and upsets, spills, or sampling errors triggered the TRE, in contrast to a situation where a single toxicant or group of toxicants cause lethality. This provision does not apply as a result of corrective actions taken by the permittee. "Corrective actions" are herein defined as proactive efforts which eliminate or reduce effluent toxicity. These include, but are not limited to, source reduction or elimination, improved housekeeping, changes in chemical usage, and modifications of influent streams and/or effluent treatment.

The permittee may only apply this cessation of lethality provision once. If the effluent again demonstrates significant lethality to the same species, the permit will be amended to add a WET limit with a compliance period, if appropriate. However, prior to the effective date of the WET limit, the permittee may apply for a permit amendment removing and replacing the WET limit with an alternate toxicity control measure by identifying and confirming the toxicant and/or an appropriate control measure.

g. The permittee shall complete the TRE and submit a Final Report on the TRE Activities no later than 28 months from the last test day of the retest that confirmed significant lethal effects at the critical dilution. The permittee may petition the Executive Director (in writing) for an extension of the 28-month limit. However, to warrant an extension the permittee must have demonstrated due diligence in their pursuit of the TIE/TRE and must prove that circumstances beyond their control stalled the TIE/TRE.

The report shall provide information pertaining to the specific control mechanism(s) selected that will, when implemented, result in reduction of effluent toxicity to no significant lethality at the critical dilution. The report will also provide a specific corrective action schedule for implementing the selected control mechanism(s).

A copy of the TRE Final Report shall also be submitted to the U.S. EPA Region 6 office.

h. Based upon the results of the TRE and proposed corrective actions, this permit may be amended to modify the biomonitoring requirements, where necessary, to require a compliance schedule for implementation of corrective actions, to specify a WET limit, to specify a BMP, and/or to specify CS limits.

TABLE 1 (SHEET 1 OF 4)

BIOMONITORING REPORTING

CERIODAPHNIA DUBIA SURVIVAL AND REPRODUCTION

		Date	Time	Date	Time
Dates and Times Composites Collected	No. 1 FROM:			TO:	
	No. 2 FROM:			TO:	
	No. 3 FROM:			TO:	

Test initiated: _____ am/pm _____ date

Dilution water used: _____ Receiving water _____ Synthetic Dilution water

NUMBER OF YOUNG PRODUCED PER ADULT AT END OF TEST

	Percent effluent (%)					
REP	0%	27%	35%	47%	63%	84%
A						
B						
C						
D						
E						
F						
G						
H						
I						
J						
Surviv.						
Total						
CV%*						
PMSD						

*Coefficient of Variation = standard deviation x 100/mean (calculation based on young of the surviving adults)
Designate males (M), and dead females (D), along with number of neonates (x) released prior to death.

TABLE 1 (SHEET 2 OF 4)

CERIODAPHNIA DUBIA SURVIVAL AND REPRODUCTION TEST

1. Dunnett's Procedure or Steel's Many-One Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

Is the mean number of young produced per adult significantly less (p=0.05) than the number of young per adult in the control for the % effluent corresponding to significant nonlethal effects?

CRITICAL DILUTION (63%): _____ YES _____ NO

PERCENT SURVIVAL

	Percent effluent (%)					
Time of Reading	0%	27%	35%	47%	63%	84%
24h						
48h						
End of Test						

2. Fisher's Exact Test:

Is the mean survival at test end significantly less (p=0.05) than the control survival for the % effluent corresponding to lethality?

CRITICAL DILUTION (63%): _____ YES _____ NO

3. Enter percent effluent corresponding to each NOEC\LOEC below:

a.) NOEC survival = _____% effluent

b.) LOEC survival = _____% effluent

c.) NOEC reproduction = _____% effluent

d.) LOEC reproduction = _____% effluent

TABLE 1 (SHEET 3 OF 4)

BIOMONITORING REPORTING

FATHEAD MINNOW LARVAE GROWTH AND SURVIVAL

		Date Time		Date Time
Dates and Times Composites Collected	No. 1 FROM:	_____	TO:	_____
	No. 2 FROM:	_____	TO:	_____
	No. 3 FROM:	_____	TO:	_____

Test initiated: _____ am/pm _____ date

Dilution water used: _____ Receiving water _____ Synthetic dilution water

FATHEAD MINNOW GROWTH DATA

Effluent Concentration (%)	Average Dry Weight in milligrams in replicate chambers					Mean Dry Weight	CV%*
	A	B	C	D	E		
0%							
27%							
35%							
47%							
63%							
84%							
PMSD							

* Coefficient of Variation = standard deviation x 100/mean

1. Dunnett's Procedure or Steel's Many-One Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

   Is the mean dry weight (growth) at 7 days significantly less (p=0.05) than the control's dry weight (growth) for the % effluent corresponding to significant nonlethal effects?

   CRITICAL DILUTION (63%): _____ YES _____ NO

TABLE 1 (SHEET 4 OF 4)

BIOMONITORING REPORTING
FATHEAD MINNOW GROWTH AND SURVIVAL TEST

FATHEAD MINNOW SURVIVAL DATA

Effluent Concentration (%)	Percent Survival in replicate chambers					Mean percent survival			CV%*
	A	B	C	D	E	24h	48h	7 day	
0%									
27%									
35%									
47%									
63%									
84%									

* Coefficient of Variation = standard deviation x 100/mean

2. Dunnett's Procedure or Steel's Many-One Rank Test or Wilcoxon Rank Sum Test (with Bonferroni adjustment) or t-test (with Bonferroni adjustment) as appropriate:

   Is the mean survival at 7 days significantly less (p=0.05) than the control survival for the % effluent corresponding to lethality?

   CRITICAL DILUTION (63%): _____ YES _____ NO

3. Enter percent effluent corresponding to each NOEC\LOEC below:

   a.) NOEC survival = _____% effluent

   b.) LOEC survival = _____% effluent

   c.) NOEC growth = _____% effluent

   d.) LOEC growth = _____% effluent

24-HOUR ACUTE BIOMONITORING REQUIREMENTS: FRESHWATER

The provisions of this section apply to Outfall 001 for whole effluent toxicity testing (biomonitoring)

1. Scope, Frequency and Methodology

a. The permittee shall test the effluent for lethality in accordance with the provisions in this Section. Such testing will determine compliance with the Surface Water Quality Standard, 307.6(e)(2)(B), of greater than 50% survival of the appropriate test organisms in 100% effluent for a 24-hour period.

b. The toxicity tests specified shall be conducted once per six months. The permittee shall conduct the following toxicity tests utilizing the test organisms, procedures, and quality assurance requirements specified in this section of the permit and in accordance with "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition" (EPA-821-R-02-012), or the most recent update thereof:

1) Acute 24-hour static toxicity test using the water flea (*Daphnia pulex* or *Ceriodaphnia dubia*). A minimum of five replicates with eight organisms per replicate shall be used in the control and in each dilution.

2) Acute 24-hour static toxicity test using the fathead minnow (*Pimephales promelas*). A minimum of five replicates with eight organisms per replicate shall be used in the control and in each dilution.

A valid test result must be submitted for each reporting period. The permittee must report, and then repeat, an invalid test during the same reporting period. The repeat test shall include the control and the 100% effluent dilution and use the appropriate number of organisms and replicates, as specified above. An invalid test is herein defined as any test failing to satisfy the test acceptability criteria, procedures, and quality assurance requirements specified in the test methods and permit.

c. In addition to an appropriate control, a 100% effluent concentration shall be used in the toxicity tests. The control and/or dilution water shall consist of standard, synthetic, moderately hard, reconstituted water.

d. This permit may be amended to require a Whole Effluent Toxicity (WET) limit, a Best Management Practice (BMP), Chemical-Specific (CS) limits, additional toxicity testing, and/or other appropriate actions to address toxicity. The permittee may be required to conduct additional biomonitoring tests and/or a Toxicity Reduction Evaluation (TRE) if biomonitoring data indicate multiple numbers of unconfirmed toxicity events.

2. Required Toxicity Testing Conditions

a. Test Acceptance - The permittee shall repeat any toxicity test, including the control, if the control fails to meet a mean survival equal to or greater than 90%.

b. Dilution Water - In accordance with item 1.c., the control and/or dilution water shall consist of standard, synthetic, moderately hard, reconstituted water.

c. Samples and Composites

1) The permittee shall collect one flow-weighted 24-hour composite sample from Outfall 001. A 24-hour composite sample consists of a minimum of 12 effluent portions collected at equal time intervals representative of a 24-hour operating day and combined proportional to flow, or a sample continuously collected proportional to flow over a 24-hour operating day.

2) The permittee shall collect the 24-hour composite samples such that the samples are representative of any periodic episode of chlorination, biocide usage, or other potentially toxic substance discharged on an intermittent basis.

3) The permittee shall initiate the toxicity tests within 36 hours after collection of the last portion of the 24-hour composite sample. Samples shall be maintained at a temperature of 0-6 degrees Centigrade during collection, shipping, and storage.

4) If Outfall 001 ceases discharging during the collection of the effluent composite sample, the requirements for the minimum number of effluent portions are waived. However, the permittee must have collected a composite sample volume sufficient for completion of the required test. The abbreviated sample collection, duration, and methodology must be documented in the full report required in Part 3 of this Section.

5) The effluent samples shall not be dechlorinated after sample collection.

3. Reporting

All reports, tables, plans, summaries, and related correspondence required in any Part of this Section shall be submitted to the attention of the Standards Implementation Team (MC 150) of the Water Quality Division. All DMRs, including DMRs with biomonitoring data, should be sent to the Enforcement Division (MC 224).

a. The permittee shall prepare a full report of the results of all tests conducted pursuant to this permit in accordance with the Report Preparation Section of "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition" (EPA-821-R-02-012), or the most recent update thereof, for every valid and invalid toxicity test initiated. All full reports shall be retained for 3 years at the plant site and shall be available for inspection by TCEQ personnel.

b. A full report must be submitted with the first valid biomonitoring test results for each test species and with the first test results any time the permittee subsequently employs a different test laboratory. Full reports need not be submitted for subsequent testing unless specifically requested. The permittee shall routinely report the results of each biomonitoring test on the Table 2 forms provided with this permit. All Table 2 reports must include the information specified in the Table 2 form attached to this permit.

1) Semiannual biomonitoring test results are due on or before January 20th and July 20th for biomonitoring conducted during the previous 6 month period.

2) Quarterly biomonitoring test results are due on or before January 20th, April 20th, July 20th, and October 20th, for biomonitoring conducted during the previous calendar quarter.

c. Enter the following codes on the DMR for the appropriate parameters for valid tests only:

1) For the water flea, Parameter TIE3D, enter a "0" if the mean survival at 24-hours is greater

than 50% in the 100% effluent dilution; if the mean survival is less than or equal to 50%, enter a "1."

2) For the fathead minnow, Parameter TIE6C, enter a "0" if the mean survival at 24-hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or equal to 50%, enter a "1."

d. Enter the following codes on the DMR for retests only:

1) For retest number 1, Parameter 22415, enter a "0" if the mean survival at 24-hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or equal to 50%, enter a "1."

2) For retest number 2, Parameter 22416, enter a "0" if the mean survival at 24-hours is greater than 50% in the 100% effluent dilution; if the mean survival is less than or equal to 50%, enter a "1."

4. Persistent Mortality

The requirements of this Part apply when a toxicity test demonstrates significant lethality, here defined as a mean mortality of 50% or greater to organisms exposed to the 100% effluent concentration after 24-hours.

a. The permittee shall conduct 2 additional tests (retests) for each species that demonstrates significant lethality. The two retests shall be conducted once per week for 2 weeks. Five effluent dilution concentrations in addition to an appropriate control shall be used in the retests. These additional effluent concentrations are 6%, 13%, 25%, 50% and 100% effluent. The first retest shall be conducted within 15 days of the laboratory determination of significant lethality. All test results shall be submitted within 20 days of test completion of the second retest. Test completion is defined as the 24th hour. The retests shall also be reported on the DMRs as specified in Part 3.d.

b. If one or both of the two retests specified in item 4.a. demonstrates significant lethality, the permittee shall initiate the TRE requirements as specified in Part 5 of this Section.

5. Toxicity Reduction Evaluation

a. Within 45 days of the retest that demonstrates significant lethality, the permittee shall submit a General Outline for initiating a Toxicity Reduction Evaluation (TRE). The outline shall include, but not be limited to, a description of project personnel, a schedule for obtaining consultants (if needed), a discussion of influent and/or effluent data available for review, a sampling and analytical schedule, and a proposed TRE initiation date.

b. Within 90 days of the retest that demonstrates significant lethality, the permittee shall submit a TRE Action Plan and Schedule for conducting a TRE. The plan shall specify the approach and methodology to be used in performing the TRE. A TRE is a step-wise investigation combining toxicity testing with physical and chemical analysis to determine actions necessary to eliminate or reduce effluent toxicity to a level not effecting significant lethality at the critical dilution. The TRE Action Plan shall lead to the successful elimination of significant lethality for both test species defined in item 1.b. As a minimum, the TRE Action Plan shall include the following:

1) Specific Activities - The TRE Action Plan shall specify the approach the permittee intends to utilize in conducting the TRE, including toxicity characterizations, identifications, confirmations, source evaluations, treatability studies, and/or alternative approaches.

When conducting characterization analyses, the permittee shall perform multiple characterizations and follow the procedures specified in the document entitled, "Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures" (EPA/600/6-91/003), or alternate procedures. The permittee shall perform multiple identifications and follow the methods specified in the documents entitled, "Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/080) and "Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/081). All characterization, identification, and confirmation tests shall be conducted in an orderly and logical progression;

2) Sampling Plan - The TRE Action Plan should describe sampling locations, methods, holding times, chain of custody, and preservation techniques. The effluent sample volume collected for all tests shall be adequate to perform the toxicity characterization/ identification/ confirmation procedures, and chemical-specific analyses when the toxicity tests show significant lethality. Where the permittee has identified or suspects specific pollutant(s) and/or source(s) of effluent toxicity, the permittee shall conduct, concurrent with toxicity testing, chemical-specific analyses for the identified and/or suspected pollutant(s) and/or source(s) of effluent toxicity;

3) Quality Assurance Plan - The TRE Action Plan should address record keeping and data evaluation, calibration and standardization, baseline tests, system blanks, controls, duplicates, spikes, toxicity persistence in the samples, randomization, reference toxicant control charts, as well as mechanisms to detect artifactual toxicity; and

4) Project Organization - The TRE Action Plan should describe the project staff, project manager, consulting engineering services (where applicable), consulting analytical and toxicological services, etc.

c. Within 30 days of submittal of the TRE Action Plan and Schedule, the permittee shall implement the TRE with due diligence.

d. The permittee shall submit quarterly TRE Activities Reports concerning the progress of the TRE. The quarterly TRE Activities Reports are due on or before April 20th, July 20th, October 20th, and January 20th. The report shall detail information regarding the TRE activities including:

1) results and interpretation of any chemical-specific analyses for the identified and/or suspected pollutant(s) performed during the quarter;

2) results and interpretation of any characterization, identification, and confirmation tests performed during the quarter;

3) any data and/or substantiating documentation which identifies the pollutant(s) and/or source(s) of effluent toxicity;

4) results of any studies/evaluations concerning the treatability of the facility's effluent toxicity;

5) any data which identifies effluent toxicity control mechanisms that will reduce effluent toxicity to the level necessary to eliminate significant lethality; and

6) any changes to the initial TRE Plan and Schedule that are believed necessary as a result of the TRE findings.

Copies of the TRE Activities Report shall also be submitted to the U.S. EPA Region 6 office.

e. During the TRE, the permittee shall perform, at a minimum, quarterly testing using the more sensitive species; testing for the less sensitive species shall continue at the frequency specified in Part 1.b.

f. If the effluent ceases to effect significant lethality (herein as defined below) the permittee may end the TRE. A "cessation of lethality" is defined as no significant lethality for a period of 12 consecutive weeks with at least weekly testing. At the end of the 12 weeks, the permittee shall submit a statement of intent to cease the TRE and may then resume the testing frequency specified in Part 1.b. The permittee may only apply the "cessation of lethality" provision once.

This provision accommodates situations where operational errors and upsets, spills, or sampling errors triggered the TRE, in contrast to a situation where a single toxicant or group of toxicants cause lethality. This provision does not apply as a result of corrective actions taken by the permittee. "Corrective actions" are herein defined as proactive efforts which eliminate or reduce effluent toxicity. These include, but are not limited to, source reduction or elimination, improved housekeeping, changes in chemical usage, and modifications of influent streams and/or effluent treatment.

The permittee may only apply this cessation of lethality provision once. If the effluent again demonstrates significant lethality to the same species, the permit will be amended to add a WET limit with a compliance period, if appropriate. However, prior to the effective date of the WET limit, the permittee may apply for a permit amendment removing and replacing the WET limit with an alternate toxicity control measure by identifying and confirming the toxicant and/or an appropriate control measure.

g. The permittee shall complete the TRE and submit a Final Report on the TRE Activities no later than 18 months from the last test day of the retest that demonstrates significant lethality. The permittee may petition the Executive Director (in writing) for an extension of the 18-month limit. However, to warrant an extension the permittee must have demonstrated due diligence in their pursuit of the TIE/TRE and must prove that circumstances beyond their control stalled the TIE/TRE. The report shall specify the control mechanism(s) that will, when implemented, reduce effluent toxicity as specified in item 5.g. The report will also specify a corrective action schedule for implementing the selected control mechanism(s). A copy of the TRE Final Report shall also be submitted to the U.S. EPA Region 6 office.

h. Within 3 years of the last day of the test confirming toxicity, the permittee shall comply with 307.6.(e)(2)(B), which requires greater than 50% survival of the test organism in 100% effluent at the end of 24-hours. The permittee may petition the Executive Director (in writing) for an extension of the 3-year limit. However, to warrant an extension the permittee must have demonstrated due diligence in their pursuit of the TIE/TRE and must prove that circumstances beyond their control stalled the TIE/TRE.

The requirement to comply with 307.6.(e)(2)(B) may be exempted upon proof that toxicity is caused by an excess, imbalance, or deficiency of dissolved salts.

This exemption excludes instances where individually toxic components (e.g. metals) form a salt compound. Following the exemption, the permit may be amended to include an ion-adjustment protocol, alternate species testing, or single species testing.

i. Based upon the results of the TRE and proposed corrective actions, this permit may be amended to modify the biomonitoring requirements where necessary, to require a compliance schedule for implementation of corrective actions, to specify a WET limit, to specify a BMP, and/or to specify a CS limit.

TABLE 2 (SHEET 1 OF 2)

WATER FLEA SURVIVAL

GENERAL INFORMATION

	Time (am/pm)	Date
Composite Sample Collected		
Test Initiated		

PERCENT SURVIVAL

Time	Rep	Percent effluent (%)					
		0%	6%	13%	25%	50%	100%
24h	A						
	B						
	C						
	D						
	E						
	MEAN						

Enter percent effluent corresponding to the LC50 below:

24 hour LC50 = _____% effluent

TABLE 2 (SHEET 2 OF 2)

FATHEAD MINNOW SURVIVAL

GENERAL INFORMATION

	Time (am/pm)	Date
Composite Sample Collected		
Test Initiated		

PERCENT SURVIVAL

Time	Rep	Percent effluent (%)					
		0%	6%	13%	25%	50%	100%
24h	A						
	B						
	C						
	D						
	E						
	MEAN						

Enter percent effluent corresponding to the LC50 below:

24 hour LC50 = _____% effluent

Buddy Garcia, *Chairman*
Larry R. Soward, *Commissioner*
Bryan W. Shaw, Ph.D., *Commissioner*
Mark R. Vickery, P.G., *Executive Director*

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TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

April 30, 2009

Mr. Michael G Morrison, P.E. BCEE
Freese and Nichols Inc.
10814 Jollyville Road
Building 4, Suite 100
Austin, Texas 78759

Re: Reclaimed Water Authorization
City of Wichita Falls
Texas Commission on Environmental Quality (TCEQ) Permit No. WQ0010509-001
Authorization No. R10509-001
RN10611275; CN600129316
Wichita County, Texas

Dear Mr. Morrison:

We have completed our review of information on the above referenced project. The project under review consists of the reuse of wastewater effluent from the City of Wichita Falls River Road Wastewater Treatment Plant (TCEQ Permit No.10509-001). The treated effluent will be used for both Type I and Type II uses.

Our review showed that the material generally meets the applicable minimum standards as set forth in the Texas Commission on Environmental Quality's rules titled Use of Reclaimed Water. The project is approved. The attachment to this letter indicates the approved site and conditions that apply to this approval.

If you have any questions or wish to amend the authorization, please contact Mr. Louis C. Herrin, III, P.E. at (512) 239-4552.

Sincerely,

Chris Linendoll, Manager
Wastewater Permitting Section
Water Quality Division

cc: TCEQ, Region 3 Office, w/attachments

Authorization No. R10509-001

AUTHORIZATION FOR RECLAIMED WATER

Producer: City of Wichita Falls
P.O. Box 1431
Wichita Falls, Texas 76307

Provider: City of Wichita Falls
P.O. Box 1431
Wichita Falls, Texas 76307

User: The Permittee that the city permitted as user of the reclaimed water.

Location: The City of Wichita Falls River Road Wastewater Treatment Facility is located immediately south of River Road and approximately 1000 feet northeast of the intersection of River Road and Rosewood Street in the city of Wichita Falls in Wichita County, Texas.

Authorization: Type I and type II reclaimed water from the River Road Wastewater Treatment Facility (TPDES Permit No.WQ00010509001) to be used for Type 1 irrigation sport complexes, athletic fields, school yards, parks, hospitals grounds, industrial centers, apartment complexes, commercial, industrial manufactures, residential, properties, food crops, pasture land for milking animal, roadway right-of-ways; fire protections; maintenance of off channel impoundments (where activities such as wading or fishing are anticipated); and toilet and urinal flush water and for Type II irrigation of golf courses and pasture land for non-milking animals; road construction; construction activities; dust control; industrial, commercial, and manufacturing process water; and uses at government and military facilities. The service area is as shown in Attachment A.

This authorization contains the conditions that apply for the uses of the reclaimed water. The approval of a reclaimed water use project under Chapter 210 does not affect any existing water rights. If applicable, a reclaimed water use authorization in no way affects the need of a producer, provider and/or user to obtain a separate water right authorization from the commission. This authorization does not allow irrigation of any area authorized for irrigation under any other permit issued by Texas Commission on Environmental Quality.

This action is taken under authority delegated by the Executive Director of the Texas Commission on Environmental Quality.

Issued Date: April 30, 2009

Mark Vickery, Executive Director

The authorization is subject to the following requirements:

I. General Requirements

(a) No producer or provider may begin transferring reclaimed water to a user without first notifying the commission.

(b) Reuse of untreated wastewater is prohibited.

(c) Food crops that may be consumed raw by humans must not be spray irrigated. Food crops including orchard crops that will be substantially processed prior to human consumption may be spray irrigated. Other types of irrigation that avoid contact of reclaimed water with edible portions of food crops are acceptable.

(d) There must be no nuisance conditions resulting from the distribution, the use, and/or storage of reclaimed water.

(e) Reclaimed water must not be used in a way that degrades groundwater quality to a degree adversely affecting its actual or potential uses.

(f) Reclaimed water stored in ponds must be prevented from discharging into waters in the state, except for discharges directly resulting from rainfall events, in accordance with a permit issued by the commission, or as authorized under City of Wichita Falls River Road Wastewater Treatment Facility (TPDES Permit No. WQ0001050900l). All other discharges are unauthorized. If any unauthorized overflow of a holding pond occurs causing discharge into or adjacent to waters in the state, the user or provider, as appropriate, shall report any noncompliance. A written submission of such information must be provided to the TCEQ Region 3 in Abilene and to the TCEQ Enforcement Division (MC-149) in Austin, within five (5) working days after becoming aware of the overflow. The written submission must contain a description of the noncompliance and its cause; the potential danger to human health, safety, or the environment; the period of noncompliance, including exact dates and times; if the noncompliance has not been corrected, the anticipated time it is expected to continue; and, steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance, and to mitigate its adverse effects.

(g) Unless otherwise provided in this authorization, there must be no off-site discharge, either airborne or surface runoff, of reclaimed water from the user's property except to a wastewater treatment system or wastewater treatment collection system unless the reclaimed water user applies for and obtains a permit from the commission that authorizes discharge of the water.

(h) All reclaimed water piping must be separated from potable water piping when trenched by a distance of at least nine feet. All buried pipe must be manufactured in purple, painted purple, taped with purple metallic tape or bagged in purple. All exposed piping, hose bibs and faucets must be painted purple, designed to prevent connection to a standard water hose, and stenciled with a warning reading "**NON-POTABLE WATER.**"

(i) The design of any new distribution system that will convey reclaimed water to a user must require the approval of the executive director. Materials must be submitted to the executive director in accordance with the Texas Engineering Practice Act (Article 3271a, Vernon's Annotated Texas Statutes). The plans and specifications for any new distribution system constructed pursuant to this authorization must be approved pursuant to state law, and failure to secure approval before commencing construction of such works or making a transfer of reclaimed water is a violation of this authorization. Each day of a transfer is an additional violation until approval has been secured.

(j) Nothing in this authorization modifies any requirements of the found in 30 TAC Chapter 290, *Public Drinking Water*.

(k) A major change from a prior notification for use of reclaimed water must be approved by the executive director before it can be implemented. A major change includes:

(1) a change in the boundary of the approved service area not including the conversion of individual lots within a subdivision to reclaimed water use;

(2) the addition of a new producer;

(3) a major change in the intended use, such as conversion from irrigation of a golf course to residential irrigation; or

(4) a change from either Type I or Type II use to the other.

(l) The reclaimed water producer, provider, and user shall maintain a current operation and maintenance plan on the sites over which they have operational control. The operation and maintenance plan must contain the following, as a minimum:

(1) a copy of the signed contract between the user and provider and/or a copy of the signed contract between the provider and the producer;

(2) a labeling and separation plan for the prevention of cross connections between reclaimed water distribution lines and potable water lines;

(3) the measures that will be implemented to prevent unauthorized access to reclaimed water facilities (e.g., secured valves);

(4) procedures for monitoring reclaimed water;

(5) a plan for how reclaimed water use will be scheduled to minimize the risk of inadvertent human exposure;

(6) schedules for routine maintenance;

(7) a plan for worker training and safety; and

(8) contingency plan for system failure or upsets.

(m) One of the following requirements must be met by the user or provider, for any area where reclaimed water is stored or where there are hose bibs or faucets:

(1) Signs having a minimum size of eight inches by eight inches must be posted at all storage areas and on all hose bibs and faucets reading, in both English and Spanish, **"Reclaimed Water, Do Not Drink"** or similar warning.

(2) The area must be secured to prevent access by the public.

(n) Where a reclaimed water line parallels a sewer line, the reclaimed water line must be constructed in accordance with subsection (p) or (q) of this section. The horizontal separation distance must be three feet (outside to outside) with the reclaimed water line at the level of or above the sewer line. Reclaimed water lines that parallel sewer lines may be placed in the same benched trench. Where a reclaimed water line crosses a sewer line, the requirement of 30 TAC §290.44(e)(5)(B), *Location of Water Lines*, must be followed with the reclaimed water line substituted for the water line.

(o) Reclaimed water lines that transport reclaimed water under pressure must be sized according to acceptable engineering practices for the needs of the reclaimed water users. The provider shall prevent high velocity scouring and maintain adequate fluid velocity to prevent the deposition of solids in the lines. Pipe specified for reclaimed water force mains must have an expected life of at least as long as that of the associated lift station and must be suitable for the reclaimed water being pumped and operating pressure to which it will be subjected. All pipe must be identified in the technical specifications with appropriate American Society for Testing and Materials, American National Standard Institute, or American Water Works Association standard numbers for both quality control (dimensions, tolerance, and installation such as bedding or backfill). All pipes and fittings must have a minimum working pressure rating of 150 pounds per square inch. Final plans and specifications must describe required pressure testing for all installed reclaimed water force mains. Minimum test pressure must be 1.5 times the maximum design pressure. Allowable leakage rates must be determined as described in 30 TAC §217.97, *Pressure Sewer Systems*.

(p) Gravity flow reclaimed water lines must meet the requirements of 30 TAC Chapter 217, Subchapter C, *Conventional Collection Systems*. The provider shall prevent high velocity scouring and maintain adequate fluid velocity to prevent the deposition of solids in the lines.

(q) All exposed piping and piping within a building must be either purple pipe or painted purple. All exposed piping should be stenciled in white with a warning reading **"NON-POTABLE WATER."** All exposed or buried reclaimed water piping constructed at a wastewater treatment facility is exempt from the color-coding requirement of this section.

(r) When applicable, in accordance with 30 TAC Chapter 217, *Design Criteria for Domestic Wastewater Systems,* the design of the distribution systems that will convey reclaimed water to a user must be submitted to the executive director and must receive an approval before the distribution system may be constructed. The design of the distribution systems must meet the

criteria of 30 TAC Chapter 217, *Design Criteria for Domestic Wastewater Systems*. When a municipality is the plan review authority for certain sewer systems that transport primarily domestic waste, in lieu of the commission, design submittal will not be subject to submittal to the commission and instead must be approved by the municipality.

(s) All ground level and elevated storage tanks must be designed, installed, and constructed in accordance with current AWWA standards with reference to materials to be used and construction practices to be followed, except for health-based standards strictly related to potable water storage and contact practices, where appropriately less restrictive standards may be applied.

II. Storage Requirements for Reclaimed Water

(a) Storage facilities for retaining reclaimed water prior to use must not be located within a floodway and must be protected from a 100-year flood.

(1) Any holding pond designed to contain Type I effluent must have a lining with a permeability of no more than 1×10^{-4} cm/sc and conform to the following requirements:

(A) The ponds must be designed and constructed to prevent groundwater contamination;

(B) Soils used for pond lining must be free from foreign material such as paper, brush, trees, and large rocks; and

(C) All soil liners must be of compacted material, at least 24 inches thick, compacted in lifts no greater than 6 inches thick and compacted to 95% of Standard Proctor Density. In-situ clay soils meeting the soils liner requirements must be excavated and re-compacted a minimum of 6 inches below planned grade to assure a uniformly compacted finished surface.

(D) Soil liners must meet the following particle size gradation and Atterburg limits:

(i) 30% or more passing a number 200 mesh sieve; and

(ii) a liquid limit of 30% or greater; and a plasticity index of 15 or greater and have a permeability less than or equal to 1×10^{-4} cm/sec;

(E) Synthetic membrane linings must have a minimum thickness of 40 mils with a leak detection system. In situ liners at least 24 inches thick meeting a permeability less than or equal to 1×10^{-4} cm/sec are acceptable alternatives;

(F) Certification by a Texas licensed professional engineer must be furnished that the pond lining meets the appropriate criteria prior to utilization of the facilities;

(G) Soil embankment walls must have a top width of at least five feet. The interior and exterior slopes of soil embankment walls must be no steeper than one foot vertical to three feet horizontal unless alternate methods of slope stabilization are utilized. All soil embankment walls must be protected by a vegetative cover or other stabilizing material to prevent erosion. Erosion stops and water seals must be installed on all piping penetrating the embankments;

(H) An alternative method of pond lining that provides equivalent or better water quality protection than provided under this section may be utilized with the prior approval of the executive director.

(2) Any holding pond designed to contain Type II effluent must have a lining with a permeability of no more than 1 x 10^{-7} cm/sc and conform to the following requirements:

(A) The ponds must be designed and constructed to prevent groundwater contamination;

(B) Soils used for pond lining must be free from foreign material such as paper, brush, trees, and large rocks; and

(C) All soil liners must be of compacted material, at least 24 inches thick, compacted in lifts no greater than 6 inches thick and compacted to 95% of Standard Proctor Density. In-situ clay soils meeting the soils liner requirements must be excavated and re-compacted a minimum of 6 inches below planned grade to assure a uniformly compacted finished surface.

(D) Soil liners must meet the following particle size gradation and Atterburg limits:

(i) 30% or more passing a number 200 mesh sieve; and

(ii) a liquid limit of 30% or greater; and a plasticity index of 15 or greater and have a permeability less than or equal to 1 X 10^{-7} cm/sec;

(E) Synthetic membrane linings must have a minimum thickness of 40 mils with a leak detection system. In situ liners at least 24 inches thick meeting a permeability less than or equal to 1 X 10^{-7} cm/sec are acceptable alternatives;

(F) Certification by a Texas licensed professional engineer must be furnished that the pond lining meets the appropriate criteria prior to utilization of the facilities;

(G) Soil embankment walls must have a top width of at least five feet. The interior and exterior slopes of soil embankment walls must be no steeper than one foot vertical to three feet horizontal unless alternate methods of slope stabilization are utilized. All soil embankment walls must be protected by a vegetative cover or other stabilizing material to prevent erosion. Erosion stops and water seals must be installed on all piping penetrating the embankments;

(H) An alternative method of pond lining that provides equivalent or better water quality protection than provided under this section may be utilized with the prior approval of the executive director

(3) Reclaimed water may be stored in leak-proof, fabricated tanks.

(4) Subsequent holding ponds utilized for the receipt and storage of reclaimed water of a quality that could cause or causes a violation of a surface water quality standard or impairment of groundwater for its actual or intended use will be also subject to the storage requirements of this section.

III. Specific Uses and Quality Standards for Reclaimed Water

(a) Numerical parameter limits pertaining to specific reclaimed water use categories are contained in this section. These limits apply to reclaimed water before discharge to initial holding ponds or a reclaimed water distribution system.

(b) The reclaimed water producer shall establish that the reclaimed water meets the quality limits at the sample point for the intended use in accordance with the monitoring requirements identified in Section IV, *Sampling and Analysis.*

(c) Type I Reclaimed Water Use. The type of use is that where the public may come in contact with the reclaimed water. The uses allowed by this authorization are Type 1 irrigation sport complexes, athletic fields, school yards, parks, hospitals grounds, industrial centers, apartment complexes, commercial, industrial manufactures, residential, properties, food crops, pasture land for milking animal, roadway right-of-ways; fire protections; maintenance of off channel impoundments (where activities such as wading or fishing are anticipated); and toilet and urinal flush water.

(d) The following conditions apply to Type I use of reclaimed water. At a minimum, the reclaimed water producer shall transfer only reclaimed water of the following quality as described for Type I reclaimed water use. Type I reclaimed water on a 30-day average must have a quality of no more than:

$CBOD_5$	5 mg/l *(30-day daily average)*
Turbidity	3 NTU *(30-day daily average)*
Fecal Coliform or *E. coli Bacteria*	20 CFU/100 ml (*geometric mean)*
Fecal Coliform or *E. coli Bacteria*	75 CFU/100 ml (*single grab sample)*

(e) Type II Reclaimed Water Use. The type of use is that where the public may not come in contact with the reclaimed water. The uses allowed by this authorization and for Type II irrigation of golf courses and pasture land for non-milking animals; road construction; construction activities; dust control; industrial, commercial, and manufacturing process water; and uses at government and military facilities.

(f) The follcwing conditions apply to Type II use of reclaimed water. At a minimum, the reclaimed water producer shall transfer only reclaimed water of the following quality as described for Type I reclaimed water use. Type I reclaimed water on a 30-day average must have a quality of no more than:

$CBOD_5$	15 mg/l *(30-day daily average)*
Fecal Coliform or *E. coli Bacteria*	200 CFU/100 ml (*geometric mean)*
Fecal Coliform or *E. coli Bacteria*	800 CFU/100 ml (*single grab sample)*

IV. Sampling and Analysis

(a) The reclaimed water producer shall sample the reclaimed water prior to distribution to user to assure that the water quality is in accord with the intended contracted use.

(b) Analytical methods must be in accord with those specified in 30 TAC Chapter 319, *Monitoring and Reporting*. Test procedures for the analysis of pollutants must comply with procedures specified in 30 TAC §§319.11 - 319.12. Measurements, tests, and calculations must accurately represent the reclaimed water. All laboratory tests submitted to demonstrate compliance with this authorization must meet the requirements of 30 TAC Chapter 25, *Environmental Testing Laboratory Accreditation and Certification*

(c) The minimum sampling and analysis frequency for Type I reclaimed water is twice per week and for Type II is once per week..

(d) The monitoring must be done after the final treatment unit.

(e) The records of the monitoring must be done on a monthly basis and be available at the facility site for inspection by representatives of the Commission.

V. Record Keeping and Reporting

(a) The reclaimed water provider and user shall maintain records on site for a period of at least five years.

(1) Records to be maintained by the provider include:

(A) copies of notifications made to the commission concerning reclaimed water projects;

(B) as applicable, copies of contracts made with each reclaimed water user (this requirement does not include reclaimed water users at residences that have separate distribution lines for potable water);

(C) records of volume of water delivered to each reclaimed water user per delivery (this requirement does not apply to reclaimed water users at residences that have separate distribution lines for potable water); and

(D) reclaimed water quality analyses.

(2) The reclaimed water provider or producer s
monthly basis the following information on fo
tor. Such reports are due to the commission b
the reporting period.

(A) volume of reclaimed water delivered

(B) quality of reclaimed water delivered
monthly average for each quality cri
ceed" that must be reported as indivi

DMR
Reuse

(b) The provider shall provide written notice to the Wate
and the appropriate TCEQ regional office at least tl
claimed water.

(c) Monitoring requirements contained in the authorization are suspended from the effective date of the authorization until the reclaim water is transferred.

VI. Transfer of Reclaimed Water

(a) Reclaimed water transferred from a provider to a user must be done on a demand only basis. A reclaimed water user may refuse delivery of such water at any time.

(b) All reclaimed water transferred to a user must be of at least the treatment quality specified in Section IV, *Sampling and Analysis*.

(c) Transfer must be accomplished via pipes or tank trucks.

(d) The transfer of reclaimed water must be terminated immediately if a provider becomes aware of the misuse of the reclaimed water by the user, regardless of contract provisions.

VII. Restrictions

(a) This authorization does not convey any property right and does not grant any exclusive privilege.

(b) This authorization does not allow the use of reclaimed water on a land that is authorized as a disposal site under either a Texas Discharge Pollutant Elimination System (TPDES) permit or a Texas Land Application Permit (TLAP).

VIII. Responsibilities and Contracts

(a) The producer of reclaimed water will not be liable for misapplication of reclaimed water by users, except as provided in this section. Both the reclaimed water provider and user have, but are not limited to, the following responsibilities:

(1) The reclaimed water producer shall:

(A) transfer reclaimed water of at least the minimum quality required by this chapter at the point of delivery to the user for the specified use;

(B) sample and analyze the reclaimed water and report such analyses in accordance with Section IV, *Sampling and Analysis,* and Section V, *Record keeping and Reporting*; and

(C) notify the executive director in writing within five (5) days after obtaining knowledge of reclaimed water use not authorized by the executive director's reclaimed water use approval.

(2) The reclaimed water provider shall:

(A) assure construction of reclaimed water distribution lines/systems in accordance with 30 TAC Chapter 217, *Design of Domestic Wastewater Systems*, and in accordance with approved plans and specifications;

(B) transfer reclaimed water of at least the minimum quality required by this chapter at the point of delivery to the user for the specified use;

(C) notify the executive director in writing within five (5) days after obtaining knowledge of reclaimed water use not authorized by the executive director's reclaimed water use approval; and

(D) not be found in violation of this chapter for the misuse of the reclaimed water by the user if transfer of such water is shut off promptly upon knowledge of misuse regardless of contract provisions.

(3) The reclaimed water user shall:

(A) use the reclaimed water in accordance with this authorization; and

(B) maintain and provide records as required by Section III, *Record Keeping and Reporting.*

IX. Enforcement

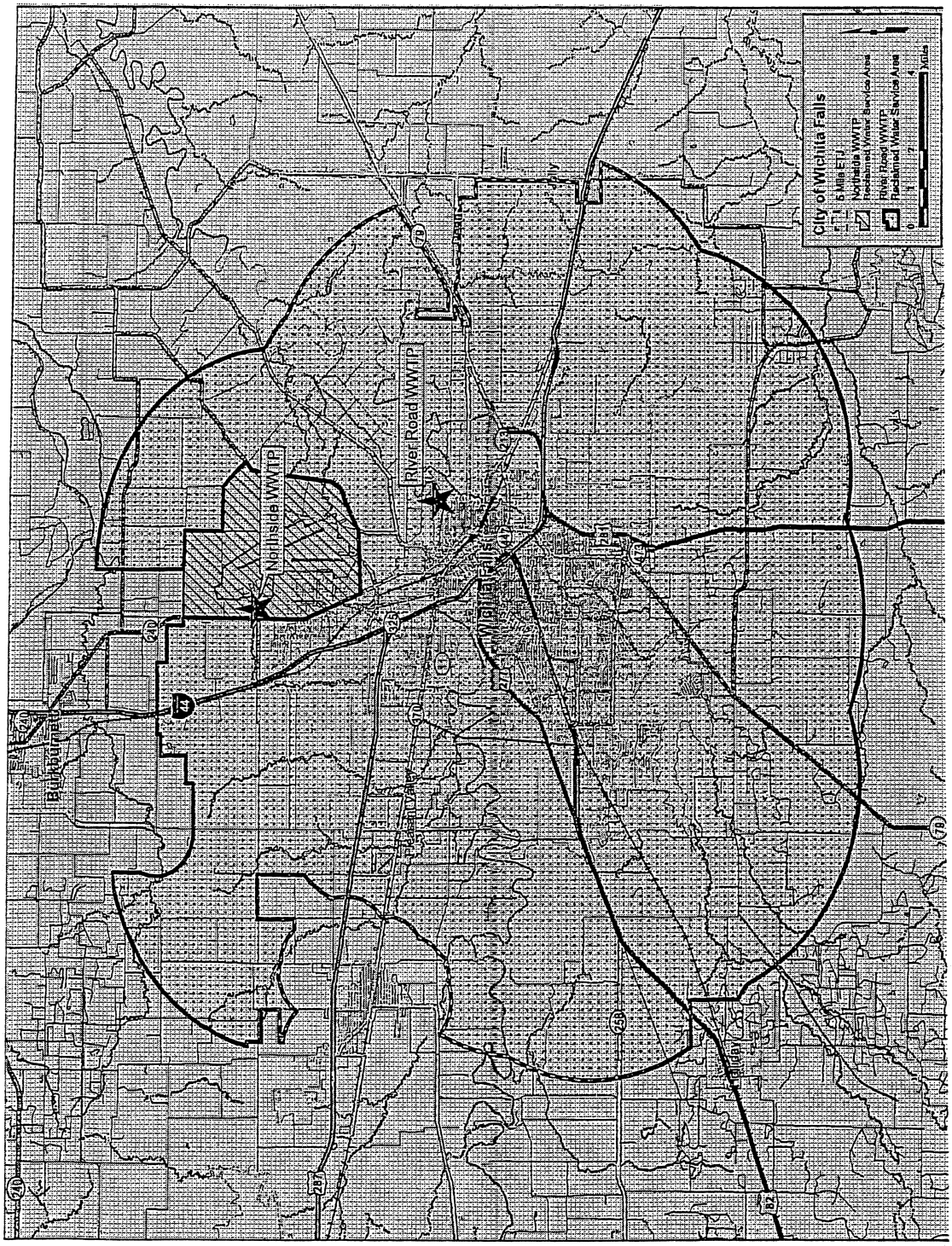
If the producer, provider and/or user fail to comply with the terms of this authorization, the executive director may take enforcement action provided by the Texas Water Code §26.019 and §26.136.

X. Standard Provisions

(a) This authorization is granted in accordance with the rules and orders of the commission and the laws of the state of Texas.

(b) Acceptance of this authorization constitutes an acknowledgment and agreement that the provider and user will comply with all the terms, provisions, conditions, limitations and restrictions embodied in this authorization and with the rules and other orders of the commission and the laws of the state of Texas. Agreement is a condition precedent to the granting of this authorization.

Attachment A



The Wichita Falls Pretreatment Program

Who We Are:

The Wichita Falls Pretreatment Program is an EPA-mandated program required of all Publically Owned Treatment Works (POTWs). The Texas Pollutant Discharge Elimination System (TPDES) permits issued to the City's wastewater plants require Wichita Falls to have a Pretreatment Program.

The Pretreatment Program sets certain restrictions and limitations on all dischargers of non-residential wastewater to the City wastewater treatment system (or POTW). As a result, certain Significant industries, commercial establishments, and/or institutions may be required to "pre-treat" their wastewater before it is discharged to the City treatment system. Besides having to meet local ordinance requirements certain Categories of industries have to meet requirements set forth in State and Federal regulations. The Wichita Falls Pretreatment Program is responsible for enforcing those State and Federal requirements.

Why We Are:

The Purpose of the Pretreatment Program is five-fold:

1. To protect the water quality of the Wichita River by preventing pass-through of pollutants through the POTW into the environment.

2. To ensure the continued functioning of the POTW by preventing interference of its biological processes by pollutants.

3. To prevent the contamination of the sludge produced by the POTW that would limit disposal alternatives and greatly increase sludge disposal costs.

4. To protect the public and City personnel from pollutants in the sewer lines that could produce adverse health effects.

5. To protect the POTW and other public and private property from damage caused by discharged pollutants.

How We Came To Be:

On June 22, 1969, the Cuyahoga River in Cleveland Ohio caught fire due to wastewater discharged by industries. The incident made the cover of Time Magazine. As a result Congress passed The Clean Water Act of 1972. The Act established the National Pollutant Discharge Elimination System (NPDES), which required permits for all facilities which discharged into the navigatable waters of the United States. This included municipal wastewater treatment plants as well as industries. However, to circumvent the requirement of an NPDES permit, many industries stopped discharging into rivers and began discharging their wastes into municipal wastewater plants. The results were often expensive to the municipality and sometimes catastrophic to the community.

For example, on March 17, 1977, employees at the Morris Forman Wastewater Treatment Plant in Louisville Kentucky became sick because of a strong, chemical odor. After investigation it was determined that a local industry was discharging extremely toxic chemicals into the sewer lines. It took three months to clean up the plant and two years to clean up the sewer lines. During that time the raw sewage of the Louisville area had to be discharged directly into the river. Beside millions of dollars of fines and reparations, the president of the responsible company was sent to Federal prison for two years.

As a result of this and other such incidents Congress modified the Clean Water Act to require Pretreatment Programs for all POTWs. (For some POTWs, such as very small ones, the Pretreatment Program is directly enforced and administered by the State or the regional EPA instead of the local government.)

On June 6, 1980, the City of Wichita Falls established the position of Pollution Control Officer and tasked him with the responsibility of developing a Pretreatment Program by 1983.

On April 3, 1981, the Pollution Control Officer began an investigation into an unauthorized industrial discharge into Plum Creek. During the course of the investigation the Texas Water Commission (now the Texas Commission of Environmental Quality) expressed concern regarding potential enforcement problems caused by the overlap of responsibility between the Air and Water Pollution Division of the Health Department and the Pretreatment Program of the Wastewater Treatment Department. As a result, City Manager Stuart A. Bach transferred the Pretreatment Program to the Air and Water Pollution Division of the Health Department.

On November 15, 1983, the United States Environmental Protection Agency approved the Wichita Falls Pretreatment Program. The program was substantially modified October 1993, and December 2002. Since the establishment of the Pretreatment Program in 1983 pollutants entering the River Road POTW have decreased by 97%. (See table below.)

In January of 1985, the Pretreatment Program developed and implemented regulations for the pick-up, transportation and/or discharge of liquid waste (such as from grease interceptors, septic tanks, and portable toilets) within the city limits of Wichita Falls.

In August of 2004 the Pretreatment Program developed and implemented regulations for grease interceptor requirements for food preparation facilities discharging into the POTW. Since the implementation of the regulations City sewer overflows into the environment have been reduced by 50%. The City's grease interceptor ordinance is the most comprehensive in the State of Texas and most of the United States. The City often receives calls from other municipalities throughout the nation for advice in implementing their own grease interceptor program.

Industries currently under permit:

Categorical Industrial Users (CIUs):

These are industries in categories that are specifically regulated by the EPA. The City is required by Federal and State law to permit them.

1. Howmet Corporation (Metal Finishing Category)

2. Liquid Waste Processing (Centralized Waste Treatment Category)

3. Signal Hill (Steam Electric Power Generating Category)

4. P&WC Component Repairs (Metal Finishing Category)

5. Tranter Inc. (Metal Finishing Category)

Categorical Industries have to be tested at least once every six months for up to 129 Priority Pollutants regulated by the EPA.

Significant Industrial Users (SIUs).

A Significant Industrial User is any industry that is:

A. A Categorical Industrial User

B. An industry that discharges an average of 25,000 gallons per day (GPD) to the POTW.

C. An industry whose discharge makes up five percent or more of the capacity of a POTW.

or

D. An industry designated as such by the City on the basis that it has a reasonable potential for adversely affecting the operation of the POTW or for violating any pretreatment standard or requirement.

Besides the CIUs listed above, Significant Industrial Users permitted by the City are:

1. Admiral Linen Services

2. PPG

3. Sheppard Air Force Base – Discharge to Northside Plant

4. Sheppard Air Force Base – Discharge to River Road Plant

Significant Industrial Users (SIUs) are required to test once every six months for the pollutants listed in the local ordinance unless the Control Authority justifies otherwise. They also must sample for any other pollutants of concern as well.

Note: Federal regulations require SIUs to be sampled at least once every six months. Regulations specify that this sampling may be done either by the industry or by the Control Authority. If the industry does the sampling then the Control Authority is required to sample once a year to verify the industry's self monitoring.

To insure a representative sample the City requires industrial self-monitoring to consist of three consecutive days.

Additionally the Control Authority is required to sample the influent (in-flow) and the effluent (out-flow) of the POTWs for EPA's 129 Priority Pollutants. The River Road POTW is required to be sampled twice a year, the smaller Northside POTW is only required to be sampled once a year. It must also sample the influent and the effluent of the POTWs for the 12 Priority Pollutant Metals, Phenols, and Cyanide. (The River Road POTW four times a year, the Northside twice.) The sludge of both POTWs is also sampled for TCLP (Toxicity Characteristic Leaching Procedure), PCB (Poly-Chlorinated Biphenyls), and Priority Pollutant pesticides once a year.

The Control Authority must also sample the influent and effluent of the POTWs for the toxic materials listed in Table 1 of 30 TAC 307.6(c)(1). (River Road twice a year, the Northside once.)

The data from the POTW sampling is used to determine if the Technically Based Local Limits (TBLLs) listed in the local ordinance are still adequate. It is also used to see how well the Pretreatment Program is functioning.

Influent measurements at River Road POTW in mg/l

	Early 1980s	Latest Averages	Percentage Decrease
Antimony	0.16	< 0.001	99.3%
Arsenic	0.1	< 0.001	99%
Beryllium	0.02	< 0.001	95%
Cadmium	0.3	0.0012	99.6%
Chromium	0.56	0.0578	90%
Copper	0.936	0.054	96%
Cyanide	0.34	< 0.01	97%
Lead	0.60	0.0127	97%
Mercury	0.0013	0.00057	56%
Nickel	0.45	0.0153	97%
Phenols	0.43	0.0817	80%
Selenium	0.3	< 0.001	99%
Silver	0.06	0.0052	91%
Zinc	9.912	0.0925	99%

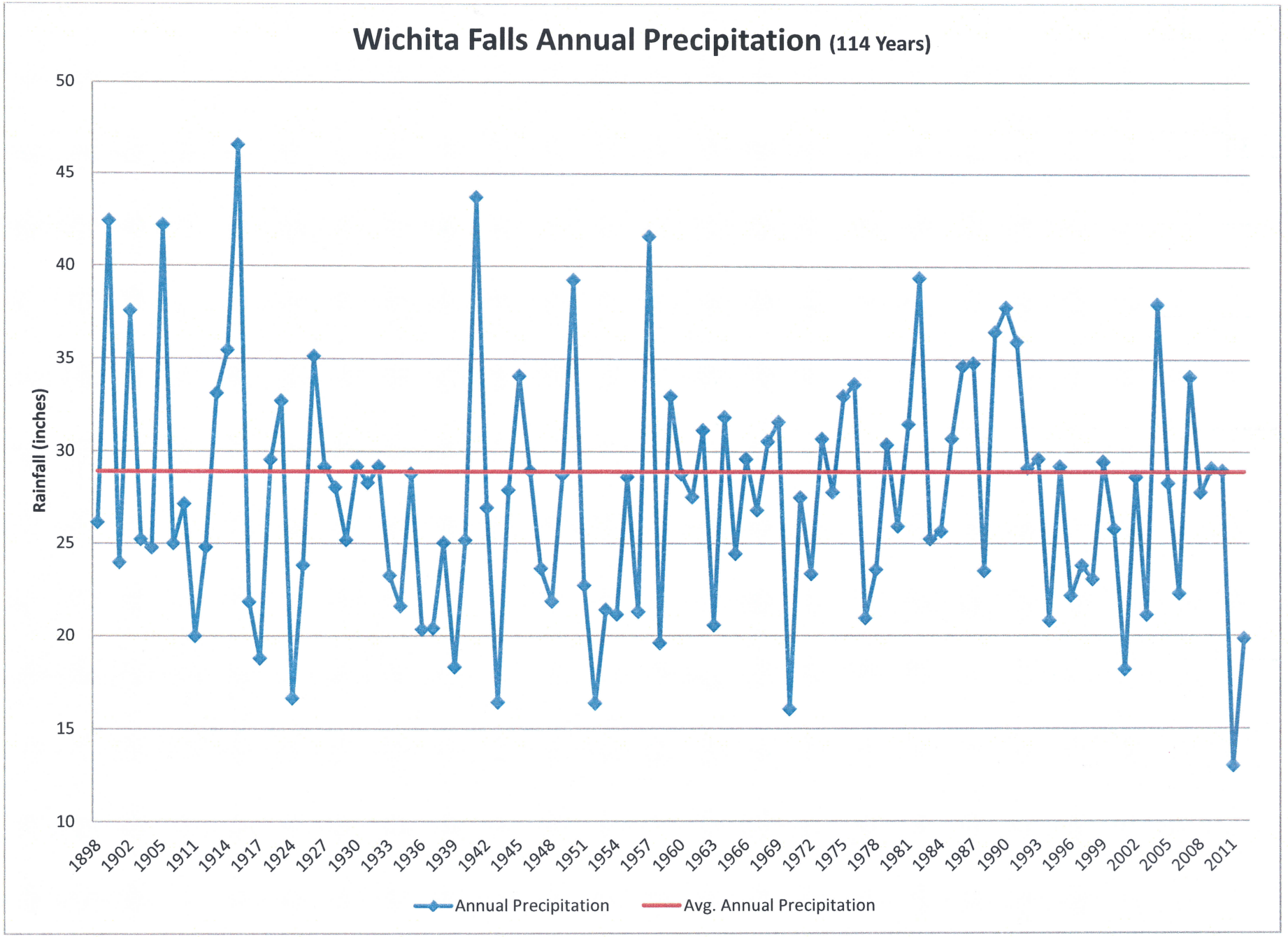
Conclusion:

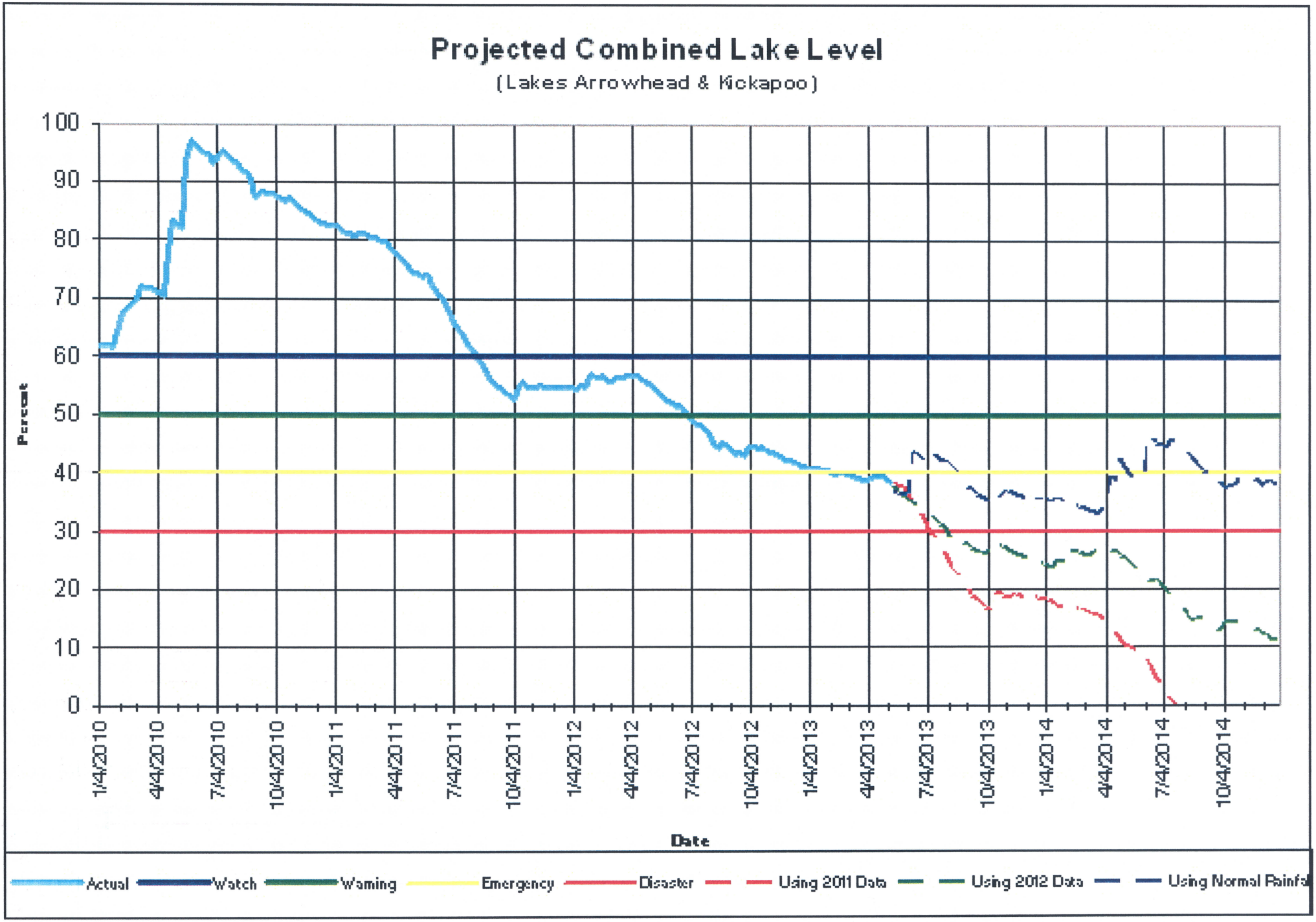
As can be seen, the Pretreatment Program of Wichita Falls is an excellent example of an effective and successful government program. Our success would not be possible without the stalwart support of past and present City Managers and City Councils. But a very large part of our success is due to the sincere cooperation of our local industries and their dedicated commitment to helping us preserve the environment. Throughout the length of the three decades of the program's existence, our relationship with local industry has been cooperative, not adversarial, and therein is the key to the program's success.

APPENDIX C

Wichita Falls Precipitation (114 Years)

Graph of Combined Lake Levels


Wichita Falls Annual Precipitation (114 Years)
Rainfall (inches)
50
45
40
35
30
25
20
15
10
1898
1902
1905
1911
1914
1917
1924
1927
1930
1933
1936
1939
1942
1945
1948
1951
1954
1957
1960
1963
1966
1969
1972
1975
1978
1981
1984
1987
1990
1993
1996
1999
2002
2005
2008
2011
Annual Precipitation
Avg. Annual Precipitation


Projected Combined Lake Level
(Lakes Arrowhead & Kickapoo)
Percent
100
90
80
70
60
50
40
30
20
10
0
1/4/2010
4/4/2010
7/4/2010
10/4/2010
1/4/2011
4/4/2011
7/4/2011
10/4/2011
1/4/2012
4/4/2012
7/4/2012
10/4/2012
1/4/2013
4/4/2013
7/4/2013
10/4/2013
1/4/2014
4/4/2014
7/4/2014
10/4/2014
Date
Actual
Watch
Warning
Emergency
Disaster
Using 2011 Data
Using 2012 Data
Using Normal Rainfa

APPENDIX D

Pipeline Inspection and Emergency Response Plan

Wichita Falls
TEXAS
Blue Skies. Golden Opportunities.

PIPELINE INSPECTION AND EMERGENCY RESPONSE PLAN

City of Wichita Falls Texas
P.O. Box 1431
Wichita Falls Texas 76307

April 25, 2013

CITY OF WICHITA FALLS TEXAS
Inspection and Response Plan for Pipeline

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APPENDIX

1. Aerial Map

I. DEFINITIONS

RRWWTP..... River Road Wastewater Treatment Plant

Cypress SWTP..... Cypress Surface Water Treatment Plant

Cypress DPR WTP..... Cypress Direct Potable Reuse Water Treatment Plant

TCEQ..... Texas Commission on Environmental Quality

HDPE..... High-Density Polyethylene

II. EMERGENCY CONTACTS

Utilities Operations Manager..... 691-1153

Water Superintendent..... 691-1153

Wastewater Superintendent..... 397-2535

Water Distribution Superintendent... 761-4333

Water Plant Operator..... 691-1153

Wastewater Plant Operator..... 397-2542

24 Hour Dispatcher..... 761-4333

III. INTRODUCTION

The purpose of this plan is to provide a systematic way to inspect and make repairs to the 13-mile HDPE pipeline between the River Road plant and the Cypress Water treatment Plant.

To aid in the inspection process, the pipeline will have markings placed every 1,000 feet on it identifying the pipeline segments. The segments will be numbered in ascending order from the pump station at the River Road WWTP to the Cypress WTP. This will assist in communicating locations to others if any problems arise; facilitating response times and to minimize any confusion in identifying locations.

IV. OBJECTIVE

The objective of this document is to provide a plan to inspect and make repairs and communicate shutdowns and startups with plant staff. This is to include but not limited to:

- Protect the public health
- Aid in the inspection process.
- Initiate the appropriate leak response plan.
- Lessen any potential environmental impacts.

V. MONITORING

City staff daily will monitor the HDPE pipeline responsible for transporting water from the River Road WWTP to the Cypress DPR WTP. The City will have a crew that is available 24 hours per day to make a visual inspection if warranted. A detailed journal will be maintained of the inspection. The journal will document the following:

- Who inspected the pipeline.
- Date pipeline was inspected.
- Start and end time of inspection
- Line segments inspected.
- Any deficiencies found during inspection.
- The ambient temperature
- Exterior temperature of the pipeline.

VI. NOTIFICATION

If a failure or potential failure is observed in the HDPE pipeline, staff will take necessary precautions to repair the leak or rectify the problem immediately. Failures may be determined by physical inspection or any abnormalities that may be observed at either facility. This may include but not

limited to loss of flow or a loss of pressure in the system. Any time a leak or a potential area for a leak is observed. The on-call Supervisor for the Water Distribution and Wastewater Treatment Divisions will be notified immediately. If at any time either plant operator at the RRWWTP or the Cypress WTP has any concerns due to things such as drops in pressure or flow velocity. The pipeline will be immediately shutdown and a crew will be dispatched to inspect the line. If a leak has been determined, the response team will be notified by one of two means:

- Called directly via telephone @ 940-761-4333
- Communicate with dispatcher via the Cities two-way radio system. KDL-470

VII. SHUTDOWN

If any leak requires the HDPE pipeline to Cypress DPR WTP to be depressurized or temporarily taken out of service. The plant operators at the River Road WWTP will notify the plant operators at the Cypress DPR WTP via telephone or radio that the HDPE pipeline is out of service until further notice. The pumps at the RRWWTP will be locked out and tagged out to prevent unauthorized startup of the pump station.

Once the HDPE pipeline has been repaired it must be inspected by a Supervisor that is licensed and holds a minimum class C water distribution license issued by the TCEQ.

VIII. LEAK REPAIR

Repairs will be completed by the City of Wichita Falls Water Distribution staff, which has extensive experience in repairing large water main leaks. Repairs will be made under the supervision of an employee that maintains at least a class C Water Distribution license issued by the TCEQ. Repairs will be made as per pipe manufactures recommendation.

If a leak were to occur and depending upon what type it is will dictate the repair procedure. If the leak were to be a puncture or penetration, an electro fusion repair patch would be installed over the area. This is completed using a portable power pack that utilizes heat fusion of the patch to the pipe. If the leak was larger due to a pipe failure, the line would be cut and resurfaced and utilizing heat fusion spliced together. If needed, the repair will be properly disinfected before the pipeline is placed back into service.

If for any reason the City staff can't resolve the problem, a third party vendor will be utilized that can quickly repair the faulty section. The City will have in reserve at all times a clamp and proper materials for repairing a leak on the pipeline and maintain at least two contacts of vendors that could make emergency repairs if needed.

IV. CLEANUP RESPONSE

If a leak were to occur and the re-use water enters into the State waterways, the City staff will immediately start applying chemicals at the leak site that will neutralize any chlorine that would be discharged. Once this is established, staff will go downstream approximately 50 yards dependent upon the estimated size of the leak and monitor for any chlorine residual in the receiving stream using field chlorine test strips. If chlorine is present, chemicals to neutralize the chlorine will be added at this point, tested every 25 yards downstream, and treated with neutralizer. If no chlorine is detected, test will be done upstream every 10 yards and where chlorine is detected chlorine neutralizing chemicals will be applied to these areas.

If a leak were to occur and it did enter into the State waterways. City staff will keep a record of the following:

- Amount of water discharged.
- Beginning and ending time of discharge.
- Gallons of water discharged.
- Waterway where water discharged.
- Chemical and amount applied.
- Any visible fish kills.
- Any other pertinent information observed.

X. STARTUP

Once the Supervisor verifies that the pipeline has been repaired and disinfected (if needed) correctly, they will notify the River Road WWTP plant operators that the system is once again operational and safe to transmit water to Cypress DPR WTP.

The River Road WWTP operator will notify the Cypress DPR WTP operator that the HDPE pipeline is ready for service. The Cypress DPR WTP operator will have sole determination as to when to bring the HDPE pipeline back in service. Once the plant operator at the Cypress DPR WTP determines the need to convey water through the HDPE pipeline, they will contact the River Road WWTP plant operator and notify them of such.

Once the HDPE pipeline is fully pressurized and back in service and transmitting water. The leak site will be monitored for a minimum of 30 minutes to insure that the repair is holding and no leaks are present. Once this has been determined, they will contact the River Road WWTP operator and advise them of such and that they have completed their repairs.

Appendix 1.

Pleasant Valley
Old Iowa Park Rd
Market Rd
RRWWTP
FM171
N Scott Ave
Wichita Falls
Wichita Falls, TX, USA
447
Hardin St
240
11
Broad St
E Scott Ave
Kamp Blvd
Kell Blvd
Seymour Rd
277
82
Central Fwy
Old Jacksboro Hwy
Cypress WTP
Call Field Rd
Southwest Pkwy
281
79
© 2013 Google
Google earth
Imagery Date: 12/6/2011

APPENDIX E

DPR Exception Request

Wichita Falls
TEXAS
Blue Skies. Golden Opportunities.

PUBLIC WORKS DEPARTMENT

April 23, 2013

L'Oreal W. Stepney, P.E.
Deputy Director, Office of Water
Texas Commission on Environmental Quality
Office of Water, MC-158
P.O. Box 13087
Austin, Texas 78711-3087

Re: Request for Exception to Title 30, § 290 Regulations
City of Wichita Falls
Wichita County
CN 600129316 RN 101611275

Dear Mrs. Stepney,

The City of Wichita Falls has submitted to the Texas Commission on Environmental Quality (TCEQ) a Concept Paper detailing a Temporary (Emergency) Direct Potable Reuse (DPR) project in response to the prolonged and persistent drought that it is experiencing. The City is in receipt of the TCEQ's letter, dated February 8, 2013, acknowledging the soundness of the concept and allowing the City to prepare for TCEQ approval a Preliminary Engineering Report (PER) on the design of the DPR project.

On page 3 (of 14) of the letter, the TCEQ outlines the specific exceptions that would need to be acquired to proceed forward with the Temporary (Emergency) DPR project. Therefore, the City of Wichita Falls respectfully request that the TCEQ grant temporary exceptions to the following Title 30, § 290 regulations.

Texas Administrative Code
Title 30
Chapter 290 (Public Drinking Water)
Subchapter D (Rules & Regulations for Public Water Systems)
§290.41 (Water Sources)

Since the use of treated wastewater effluent as a source water for a public water supply is not addressed in either Federal or State regulations, the City of Wichita Falls respectfully request that the TCEQ allow the City an exception to the rules & regulations

detailed in (30 TAC) §290.41 (Water Sources), in accordance with (30 TAC) §290.39(l) (Exceptions).

The City of Wichita Falls has compiled water quality data for the treated wastewater effluent, in accordance with the specifications found in §290.41(c)(3)(G) and §290.41(e)(1)(F). To date, the City has been able to confirm that the treated wastewater effluent is of superior quality than that of most surface or ground water sources within the State of Texas. All of this supporting data will be provided in the PER for review by applicable TCEQ Divisions and Staff.

Texas Administrative Code
Title 30
Chapter 290 (Public Drinking Water)
Subchapter D (Rules & Regulations for Public Water Systems)
§290.42 (Water Treatment)

Since their does not exist any Federal or State design requirements (i.e. minimum design, treatment, operating, maintenance, monitoring and reporting) for DPR plants, the City of Wichita Falls respectfully request that the TCEQ allow the City an exception to the rules & regulations detailed in (30 TAC) §290.42 (Water Treatment), in accordance with (30 TAC) §290.39(l) (Exceptions).

The TCEQ has detailed in its February 8, 2013 letter the guidelines and recommendations that it believes are adequate to design, operate and maintain a DPR facility. The City of Wichita Falls will comply with all of the applicable guidelines and recommendations that are detailed in the afore mentioned letter. Those design requirements are detailed within the City's PER submission.

Texas Administrative Code
Title 30
Chapter 290 (Public Drinking Water)
Subchapter D (Rules & Regulations for Public Water Systems)
§290.42 (Water Treatment)

Since time does not allow for the piloting of this "innovative / alternative" DPR treatment process, the City of Wichita Falls is respectfully requesting an exception to §290.42(g), in accordance with (30 TAC) §290.39(l) (Exceptions). In lieu of the Pilot testing, the TCEQ is requiring the City to develop and submit for approval a "Full Scale Verification Testing Protocol", to ensure that the DPR system meets all of the TCEQ microbial and chemical removal criteria and is robust enough to protect the public health.

The City of Wichita Falls, with the assistance of the TCEQ staff will develop the Full Scale Verification Testing Protocol and submit it with the PER for review and approval by the appropriate TCEQ Division and Staff.

With that, the City of Wichita Falls is unaware of any additional exceptions that would be required for the approval of the Temporary (Emergency) DPR project, at this time. The City fully intends to continue to comply with all other Federal and State

regulations on this DPR project, as they relate to Drinking Water standards and operations.

The City of Wichita Falls appreciates your consideration of this project and the associated exceptions. We believe that the DPR project, as it is conceptualized, will help the City through this extended drought period and help prevent the degradation of public health and sanitation through the potential loss of potable water. If we may be of any further assistance, please do not hesitate to contact me at (940) 691-1153.

Sincerely,

Daniel K. Nix
Utilities Operations Manager
City of Wichita Falls

Cc: Russell Schreiber, P.E., Director of Public Works
Kerry D. Marony, P.E., Biggs & Matthews, Inc.
Mark Southard, Water Purification Superintendent

APPENDIX F

Concept Paper for Emergency Reuse of Wastewater Effluent

TCEQ February 8, 2013 Response Letter

Concept Paper
for the
Emergency Reuse of Wastewater Effluent
as a
Source for Direct Potable Reuse in Wichita Falls

Russell Schreiber, P.E.
Director of Public Works

Daniel K. Nix
Utilities Operations Manager

Executive Summary

The City of Wichita Falls is currently in the second year of an extended drought, which has depleted its source water reservoirs to approximately 40% of their storage capacity. The City of Wichita Falls anticipates that if significant rainfall is not forthcoming, that its source water reservoirs will continue to drop, triggering more advanced stages of its Drought Plan. The City of Wichita Falls' current drought plan has an established goal of 10 MGD maximum daily production when its source water lakes drop below 30% of their combined storage capacity.

In an effort to extend the use of these source water lakes to a point that they receive enough rainfall runoff to raise their levels, the City of Wichita Falls is seeking approval from the Texas Commission on Environmental Quality to utilize a portion of the City's Wastewater Effluent to augment its source waters for drinking water.

The City of Wichita Falls proposes to initially divert 7.5 MGD of its Wastewater Effluent to its Microfiltration/Reverse Osmosis Plant located within its Cypress Water Treatment Facility, and then blend the produced 5.0 MGD of RO Permeate with 5.0 MGD of raw lake water and treat that blend through one of the conventional plants at Cypress.

The City of Wichita Falls has performed extensive monitoring of its wastewater effluent and has calculated that it will be able to comply with all

existing Federal regulations governing surface water treatment, as well as additional requirements that the TCEQ has proposed. The primary focus will be those constituents that would cause problems with short-term (4 to 6 months) consumption of water, such as waterborne pathogens.

The City recognizes the importance of the Wastewater Effluent as a valuable resource that can be utilized in a variety of ways. To that end, the City is also developing a long-term strategy for the permanent reuse of its Wastewater Effluent.

In conclusion, the City of Wichita Falls believes that it has demonstrated through monitoring, calculation, and the development of operational plans that the Wastewater Effluent can be safely and effectively utilized as a source of water for the direct potable reuse for drinking water.

I. Statement of Problem

The Current Drought

The City of Wichita Falls utilizes 3 lakes (Lake Kickapoo, Lake Arrowhead, and Lake Kemp) as its primary sources of water. All 3 of these lakes have been adversely impacted by the drought that began in 2011 and persisted through 2012. (Figure 1 & Figure 2).

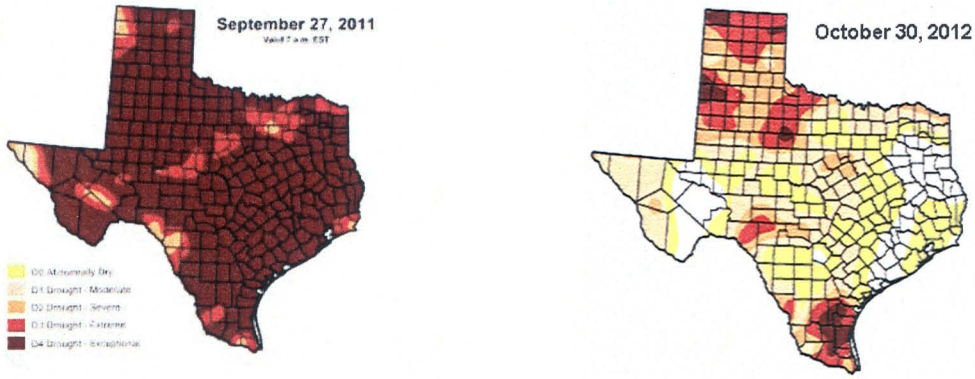


Figure 1: Overall Impact of Drought Throughout Texas

It can be seen that while the whole State of Texas was adversely impacted by the drought of 2011, recent rains have brought the vast majority of the State into a better condition by October 2012. Unfortunately, the Wichita Falls watersheds are still within the areas that are indicating Severe to Extreme Drought conditions as of October 30, 2012.

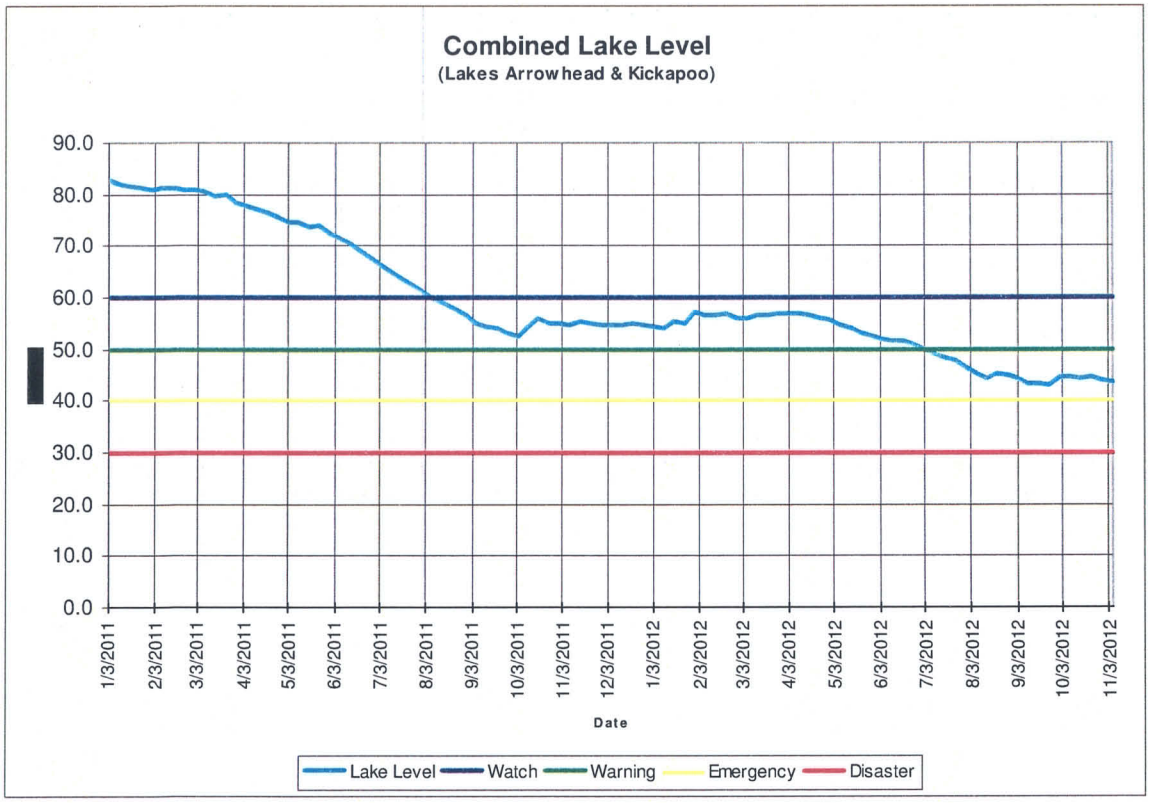


Figure 3: Wichita Falls Lake Combined Lake Levels (January 2011 to Present)

When Wichita Falls started the calendar year 2011, it had a combined lake level of 83.0 %. During the summer of 2011, Wichita Falls experienced over 100 days of temperatures over 100° F and high winds, all of which served to drop the combined lake levels to 55% by the end of the summer.

Wichita Falls started 2012 with a combined lake level of 54%. It did have what is considered an average summer as far as temperatures and rainfall but the combined lake level continued to decline and as of October 30, 2012 is at 43%.

As Wichita Falls attempts to predict the future of its water supplies for the next 6 – 12 months, it takes into account several sources of information. Of those, the two most important are presented below.

The U.S Seasonal Drought Outlook, provided by the National Oceanic & Atmospheric Administration (NOAA) is predicting that the drought throughout the North Central Texas region to persist or intensify through January 31, 2013 (Figure 3)

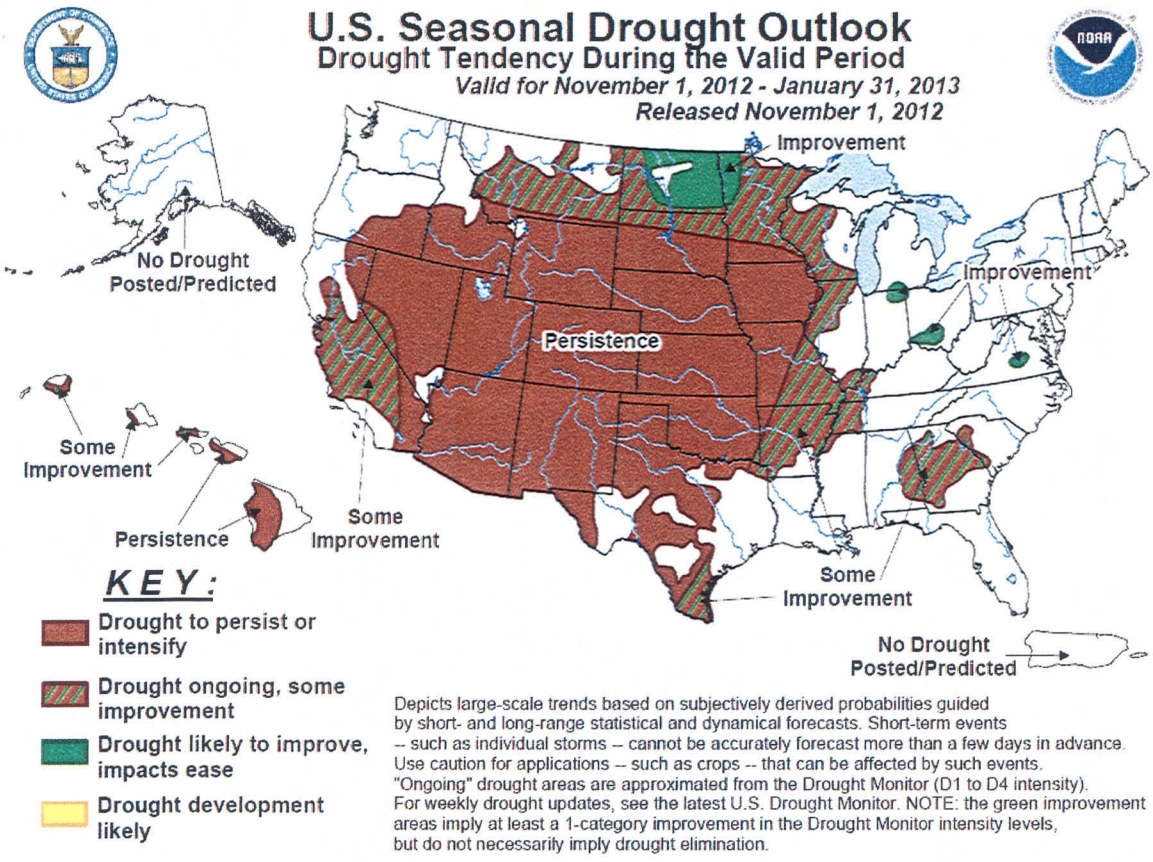


Figure 3: NOAA Drought Outlook through January 31, 2013.

The City of Wichita Falls is also projecting the lake level decline using data that provides for a worst case scenario for lake level decline (2011 Summer Data). This projection indicates that the City of Wichita Falls could trigger its Stage 3 Drought Emergency restrictions as soon as March 2013, followed by the declaration of a Stage 4 Drought Disaster as early as 3 months later, in June 2013. (Figure 4)

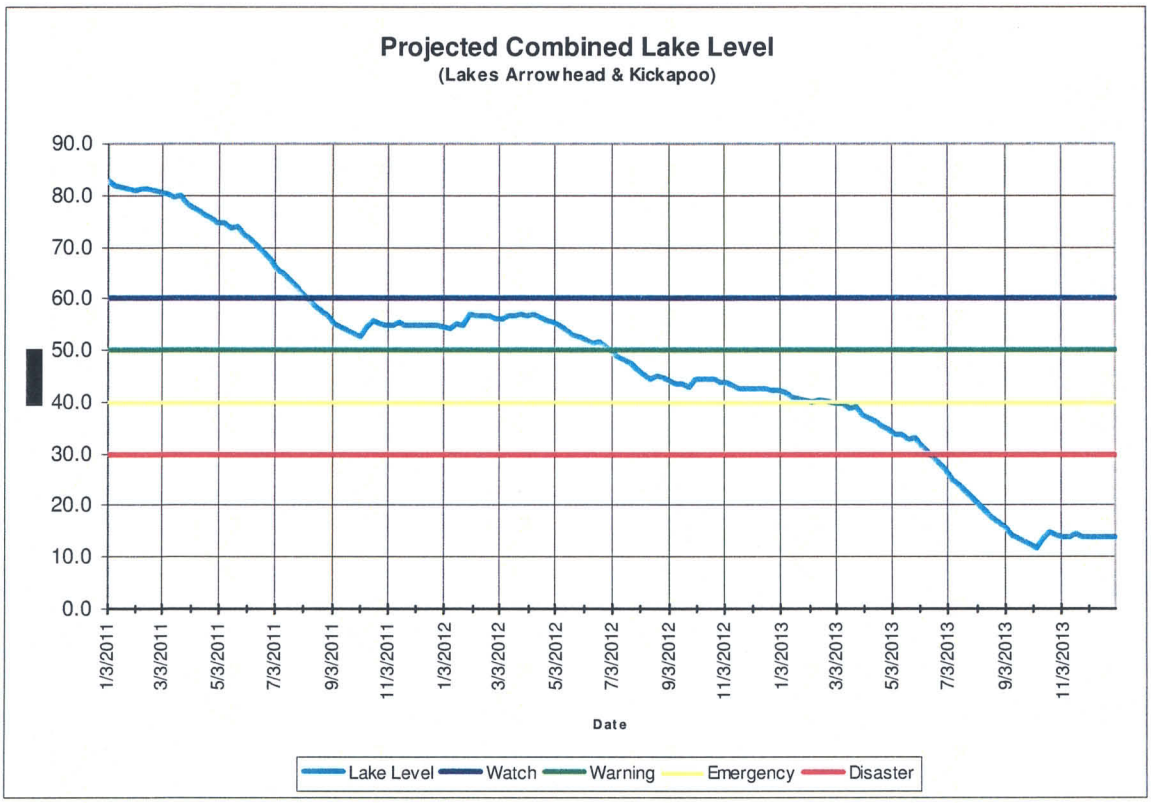


Figure 4: Wichita Falls Projected Lake Level Reduction

As Figure 4 demonstrates, without significant rainfall/runoff within the watershed boundaries of Lake Kickapoo and Lake Arrowhead the City of Wichita

Falls runs the risk of starting its 2013 Summer demand with a combined lake level of 30 % and rapidly declining into the teens before the end of the summer.

This situation not only poses a problem for the citizens of Wichita Falls and its wholesale potable water customers but also those communities that purchase raw water from the City of Wichita Falls. Several of them rely on the sources from Lake Kickapoo and Lake Arrowhead as a backup supply for their smaller sources of water. If these two lakes are not reinforced against a steep decline in their levels, then the City's of Archer City, Olney, Henrietta, and Windthorst run the very real risk of not having any drinking water at all.

Water Conservation / Drought Contingency

The City of Wichita Falls conducted a major revision of its Water Conservation / Drought Contingency Plan in 2008. It raised the trigger levels of the first 3 drought triggers by 10% (triggering them earlier than in the past) and created a new 4th trigger, Stage 4 Drought Disaster.

Wichita Falls triggered its Stage 1 Drought Watch during the summer of 2011. An aggressive conservation Public Education Program was launched, bringing to bear all resources that the City had at its disposal to get the word out to the public.

Within a year, the City triggered its Stage 2 Drought Warning (June 2011). During this stage, the City started issuing water violation citations that had substantial fines associated with them. To date, the City has issued just under

1300 water violation citations. In addition to the citations, the City implemented its surcharging program.

In anticipation of triggering its Stage 3 Drought Emergency, the City of Wichita Falls has coordinated with its Water Resources Committee on the further development of the Stage 3 restrictions, which encompass further restrictions of outside irrigation, increased surcharges, and the restriction of certain industries.

The Stage 4 Drought Disaster is the most restrictive of all the Drought stages in the City's Drought Plan. The stated production goal in the Stage 4 Drought Disaster is a maximum of 10 MGD. This value was derived from the demand flows that are exhibited in the months of January and February, i.e. the flows that are necessary to maintain health, sanitation, and safety of the citizens. The City anticipates that the Public Education message at this stage will be, "If you don't do it in January, Don't do it in July."

The Proposal

If the City's lake levels decline to predicted levels, then the City of Wichita Falls would enter the high demand / evaporation summer months of 2013 with dwindling raw water sources. The City, in an effort to continue to supply drinking water and by extension protect the public health, the City of Wichita Falls is seeking to augment its supply of source water to help see it through the high demand / evaporation summer of 2013.

After considering several options and the timing to achieve them, the City of Wichita Falls proposes to begin utilizing its Wastewater Effluent to augment its

supply of raw source water when it reaches a combined lake level of 30% or less (Stage 4 Drought Disaster declaration). The City is requesting that of the 10 MGD production goal established in its Stage 4 Drought Disaster, that 5 MGD (50%) of that total be Wastewater Effluent.

The City of Wichita Falls proposes to lay a temporary pipeline from its River Road Wastewater Treatment Plant (RRWWTP) to the Cypress Water Treatment Facility. There, it would treat the Wastewater Effluent through the existing Microfiltration/ Reverse Osmosis Plant. The RO Permeate would then be blended with raw lake water, at a 1:1 ratio, and treated through one of its conventional plants at Cypress.

The City anticipates that once the combined lake levels increased to a level that was over 40%, it would cease the use of its Wastewater Effluent under this Emergency configuration.

II. Conceptual Design

Introduction

As stated previously, the City of Wichita Falls proposes to bring the wastewater effluent from the River Road Wastewater Treatment Plant (RRWWTP) to the Cypress Water Treatment Facility. The water would be disinfected using Chloramines down the entire length of the pipeline.

Once at Cypress, the Wastewater Effluent would be treated first through the existing Microfiltration/ Reverse Osmosis Plant. This preliminary processing would entail:

- Treatment through the Microfiltration / Reverse Osmosis Clarifier with Chloramines and Ferric Sulfate
- Clarifier Supernatant passed through MF
- MF Permeate dechlorinated with Sodium Bisulfite and Stored in a Break Tank
- From the Break Tank the water is pumped through the Reverse Osmosis process.

The RO Permeate would then be placed in an existing Backwash Water Lagoon, where it can be blended with filter backwash water from the conventional plants at Cypress.

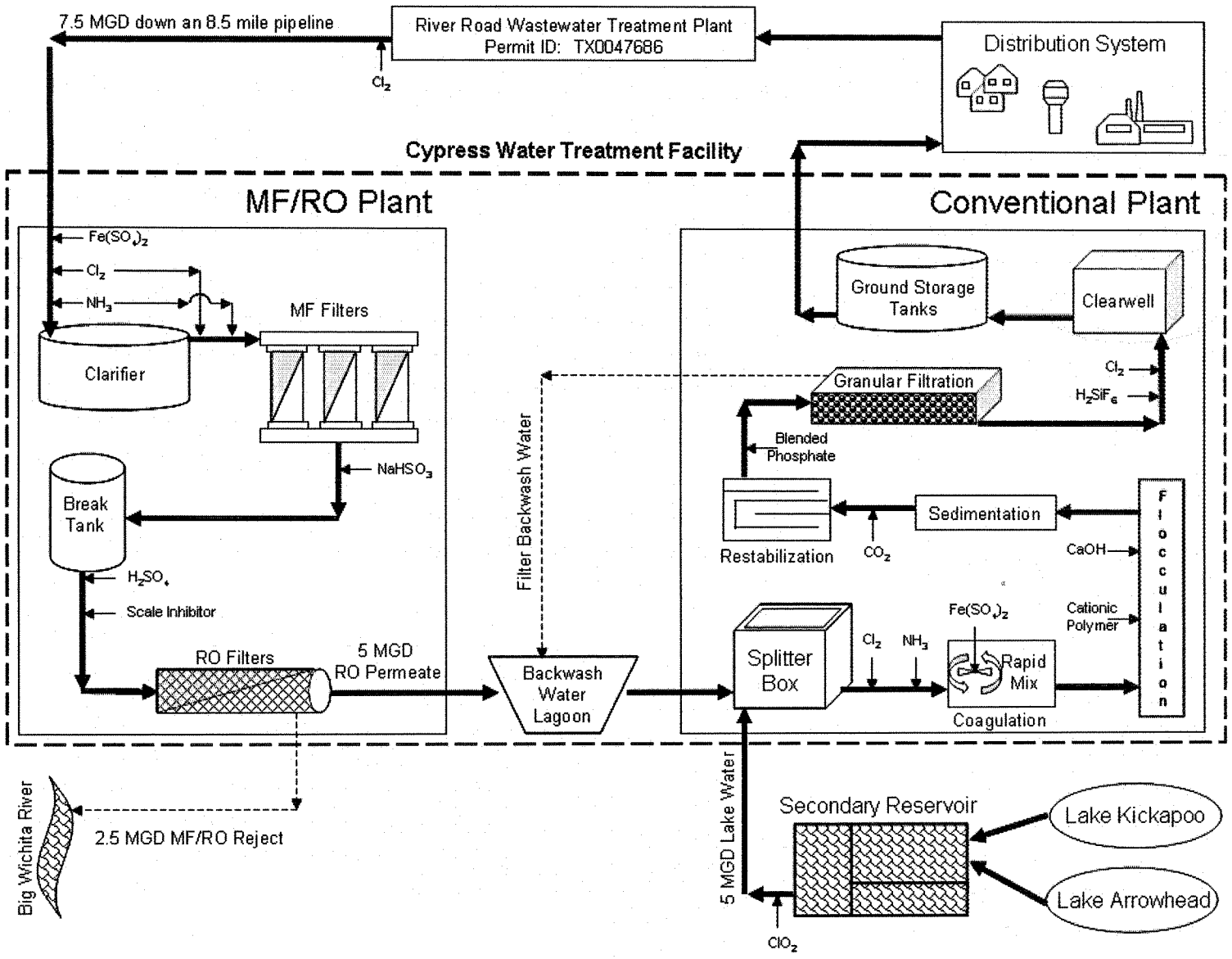
The water from the Backwash Water Lagoon would then be pumped to the Raw Water Splitter Box and blended with raw lake water before it is sent to the Conventional Plants for treatment. The City anticipates a 1:1 blending ratio.

The Conventional Treatment at Cypress consists of the following process:

- Disinfection with Chloramines starting at the Splitter Box
- Coagulation with Ferric Sulfate and Mechanical Rapid Mixing
- Flocculation with the addition of Cationic Polymer for Bridging and Calcium Hydroxide for Lime Softening.
- Sedimentation
- Restablization with Carbon Dioxide and the addition of a Blended Phosphate
- Filtration through Granular Media
- Storage in a Clearwell with the addition of Chloramines for Post-Disinfection and Hydrofluosilicic Acid for Fluoridation.

At this point, the water is stored in Ground Storage Tanks totaling 18 MG in capacity before it is pumped into the Distribution System.

A Flow Diagram of this conceptual design is provided below.


7.5 MGD down an 8.5 mile pipeline
River Road Wastewater Treatment Plant
Permit ID: TX0047686
Cl2
Distribution System
Cypress Water Treatment Facility
MF/RO Plant
Conventional Plant
Fe(SO4)2
Cl2
NH3
MF Filters
Clarifier
NaHSO3
Break Tank
H2SO4
Scale Inhibitor
RO Filters
5 MGD RO Permeate
Filter Backwash Water
Backwash Water Lagoon
Ground Storage Tanks
Clearwell
Granular Filtration
Cl2
H2SiF6
Blended Phosphate
Restabilization
CO2
Sedimentation
CaOH
Flocculation
Splitter Box
Cl2
NH3
Fe(SO4)2
Rapid Mix
Cationic Polymer
Coagulation
Big Wichita River
2.5 MGD MF/RO Reject
5 MGD Lake Water
ClO2
Secondary Reservoir
Lake Kickapoo
Lake Arrowhead

Issues

The use of Wastewater Effluent as a source of drinking water comes with some inherent risk, associated with the fact that the water has come into intimate contact with human fecal waste. Those risks can either be microbial, chemical, or radiological; and they can either cause problems with an acute exposure or require long-term, chronic exposure.

Since the City of Wichita Falls is only seeking to utilize this source on an Emergency basis, thereby requiring only a short duration of use (potentially 4 to 6 months), the City of Wichita Falls is particularly interested in eliminating those contaminants that would pose a threat upon an acute exposure in the drinking water. Examples of those contaminants would include:

- Microbials, such as Giardia, Cryptosporidium, and Viruses that would cause acute waterborne diseases
- Inorganics, such as Nitrate that would cause acute Methemoglobinemia,
- Organic Disinfection By-Products that would cause acute Neural Tube Defects in fetuses

The City has been analyzing the Wastewater Effluent for nearly a year for a parallel project (Permanent Wastewater Reuse) and feels that it has a very good understanding of the contaminants and their concentrations that would be present in the wastewater effluent stream (see Appendix A). The City of Wichita Falls is taking all of this data into consideration in this project, as it relates to the

degree of treatment that would be necessary to bring the Wastewater Effluent to drinking water standards.

Microbial

During preliminary discussions with the TCEQ, it has been stated that the TCEQ would seek the following levels of treatment to ensure that the public health was protected from certain microbial contaminants:

- 8 – log removal of Viruses
- 6 – log removal of Giardia cysts
- 5.5 – log removal of Cryptosporidium oocysts

The City of Wichita Falls has calculated the removal credits that could be expected through the existing treatment processes. In making these calculations, the City used the credits for removal that are allowed through existing Surface Water Treatment Rules, as well as Disinfection credit (CT) spreadsheets and other documentation that states approved removal credits from the TCEQ. The City of Wichita Falls has compiled all of this information into tables and requests the TCEQ approval of the cumulative credits.

Viruses (Need 8 – log Total)

Process	Agent		Log Removal
Pipeline from RRWWTP	Total Chlorine	30° C	4.27 [1]
		7° C	0.85 [1]
MF/RO Clarifier	Total Chlorine	30° C	7.76 [1]
		7° C	1.54 [1]
Microfilters	Total Chlorine	30° C	0.06 [1]
		7° C	0.01 [1]
Microfiltration	Physical Removal		2.0 [2]
Reverse Osmosis	Physical Removal		0.0
Conventional Plant	Total Chlorine	30° C	27.5 [1]
		7° C	5.3 [1]
Conventional Plant	Physical Removal		2.0 [3]
	Total	**30° C**	**43.59**
	Total	**7° C**	**11.7**

1 Calculated using the TCEQ software for CT calculations.
2 Applied based on TCEQ Letter dated April 30, 2012 from Ada Lichaa
3 Applied based on demonstration of Turbidity levels in accordance with Surface Water Treatment Rule

Giardia (Need 6 – log Total)

Process	Agent		Log Removal
Pipeline from RRWWTP	Total Chlorine	30° C	1.24 [1]
		7° C	0.47 [1]
MF/RO Clarifier	Total Chlorine	30° C	2.26 [1]
		7° C	0.86 [1]
Microfilters	Total Chlorine	30° C	0.02 [1]
		7° C	0.01 [1]
Microfiltration	Physical Removal		3.0 [2]
Reverse Osmosis	Physical Removal		0.0
Conventional Plant	Total Chlorine	30° C	8.0 [1]
		7° C	3.0 [1]
Conventional Plant	Physical Removal		2.5 [3]
	Total	**30° C**	**17.02**
	Total	**7° C**	**9.84**

1 Calculated using the TCEQ software for CT calculations.
2 Applied based on TCEQ Letter dated April 30, 2012 from Ada Lichaa
3 Applied based on demonstration of Turbidity levels in accordance with Surface Water Treatment Rule

Cryptosporidium (Need 5.5 – log Total)

Process	Agent		Log Removal
Pipeline from RRWWTP	Total Chlorine	30° C	0
		7° C	0
MF/RO Clarifier	Total Chlorine	30° C	0
		7° C	0
Microfilters	Total Chlorine	30° C	0
		7° C	0
Microfiltration	Physical Removal		2.0 [1]
Reverse Osmosis	Physical Removal		0.0
Conventional Plant	Total Chlorine	30° C	0
		7° C	0
Conventional Plant	Physical Removal		4.0 [2]
	Total	**30° C**	**6.0**
	Total	**7° C**	**6.0**

1 Applied based on TCEQ Letter dated April 30, 2012 from Ada Lichaa
2 Applied based on demonstration of Turbidity levels in accordance with LT2 Enhanced Surface Water Treatment Rule (3-log plus additional 1.0 log for IFE and CFE credits for turbidities below 0.15 NTU 95% of the month)

Chemical

The City's analysis of the Wastewater Effluent (Appendix A) has indicated that several constituents will need to be addressed to bring this source into drinking water standards. Those constituents are pH, Chlorides, Nitrates and the Disinfection By-Products (Total Trihalomethanes and Haloacetic Acid 5's). Below is a synopsis of how the City of Wichita Falls plans on dealing with each of these constituents.

pH

The Wastewater Effluent has exhibited a pH of below 7.0. The City of Wichita Falls utilizes a Lime Softening process within its Conventional Treatment

Plant. This process will enable the City to bring the pH back to an acceptable level before it is used as drinking water.

Chloride

The Wastewater Effluent has an average Chloride (388 ppm) that is slightly over the Secondary Limit of 300 ppm for drinking water. The City's Reverse Osmosis plant is expected to reduce this amount by 90%, which would lower the RO Permeate to approximately 39 ppm. Blending the RO Permeate with the existing source water would help reduce the Chloride concentrations in the lake water which are expected to be elevated due to the continued drought.

Nitrate

It is anticipated that the City will accomplish approximately 70% to 90% reduction in Nitrate through its Reverse Osmosis process, with additional reduction being accomplished through blending with the raw lake water prior to conventional treatment. If the average amount of Nitrate that can be expected is 80 ppm, and an average reduction of 80% through the RO process, that would yield a Nitrate concentration of 16 ppm in the RO Permeate. If the RO permeate is blended with the existing Source water at a 1:1 ratio, then it can be expected that the 16 ppm will be further reduced to 8.0 ppm, which is below the regulatory MCL of 10.0 ppm. The City will continue to evaluate the current RO's performance in removing this constituent and apply that removal efficiency to future reports.

Disinfection By-Products

With an average Total Trihalomethane concentration of 106 ppb and an average Haloacetic Acid concentration of 68 ppb in the Wastewater Effluent, these concentrations will have to be reduced to comply with the Drinking Water regulations of 80 ppb and 60 ppb, respectively for TTHM and HAA5.

The City of Wichita Falls anticipates a low removal rate of TTHM & HAA5 through the Reverse Osmosis plant, on the order of 30% - 60%. Using an average removal rate of 50%, this would yield 53 ppb for TTHM and 34 ppb for HAA5 in the RO Permeate. Further blending with the existing Source Water in a 1:1 ratio would further reduce the TTHM value to 27 ppb and the HAA5 to 17 ppb. It is expected that the conventional disinfection process using Chloramines will add back to those concentrations an additional 20 ppb and 28 ppb, for TTHM and HAA5, respectively. That would yield a final TTHM concentration in the drinking water of 47.0 ppb, which is below the regulatory MCL of 80 ppb; and, 45 ppb for the HAA5's, which is below the regulatory MCL of 60ppb. The City will continue to evaluate the current RO's performance in removing these constituents and apply that removal efficiency to future reports.

Unregulated / Emerging Contaminants

Because the Unregulated / Emerging contaminants were an unknown, the City has submitted samples to laboratories to shed light on these constituents. Please refer to Appendix B for the average concentrations of those unregulated /

emerging contaminants that the City has detected, to date. As more data becomes available, the City will update this Table.

The City plans on evaluating these constituents using methodologies established by the Water Industry, the EPA and the State of California in an attempt to determine if there are any concerns with these levels of constituents in the source water, as well as their removal through the Reverse Osmosis plant.

The City would like to note that concomitant sampling of the City's source water lakes and its Tap water have found many of the same constituents already existing in these waters (see footnotes in Appendix B).

Operations and Monitoring

The City recognizes that the Wastewater Effluent is derived from a source that has had direct contact with human waste, and therefore has already begun to develop the Operational & Monitoring procedures that it feels would be necessary to implement a successful program and ensure the public's health.

The City currently has an established Water Quality Task Force that is comprised of members from the Public Works/Public Utilities staff and the Health Department. This group has established triggers that would activate a meeting and investigation by the Task Force.

On the Public Utilities side, triggers include but are not limited to;

- Failure of the Disinfection Process or Bacteriological Testing
- Failure of the Turbidity MCL

On the Health Department side, triggers include but are not limited to;

- Epidemiological increase of waterborne disease

Additionally, the Utilities Divisions of Water Purification and Wastewater Treatment have developed protocols for the monitoring of the entire treatment system. Those protocols include triggers that would shutdown the use of the wastewater effluent in the event that there was something of operational concern.

On the Wastewater side, shutdown triggers include:

- Failure in the Aeration Basins or Finals.
  a) A low Dissolved Oxygen level for more than two hours in two or more Basins.
  b) Rake failures in the Finals causing an increase in solids going over the weirs.

- A high dissolved oxygen demand in two or more of the Aeration Basins causing an increase in air consumption for more than four hours to maintain the DO set point under normal flow conditions.

- Any sign of soap or suds in the treatment process. Do not wait for it to appear at the out fall.

- Any abnormalities in the quality of the water whether raw or effluent.

- Elevated TSS / Turbidity levels (above average).

- Elevated CBOD levels (above average).

- Elevated E-Coli levels (above average).

- Elevated Phosphorus levels (above average).

- When any parameter as defined in the discharge permit exceeds maximum limits.

- Any indication that there is toxicity in the daily microscopic exam.
  a) A microscopic exam will be done every eight hours while water is being sent to purification and before the start up of sending

water to purification.

- The CCB effluent Chlorine residual is below defined limits.
- Failure of the Chlorination system.
- The indicator fish at the outfall die.

On the Water Treatment side, shutdown triggers include:

- Blended Nitrate/Nitrite concentrations that will not meet MCL's.
- Blended TTHM or HAA5 concentrations that will not meet MCL's.
- Failure of the MF/RO to meet defined criteria on turbidity or removal percentages.
- TOC removal is being adversely affected and Alternative Compliance Criteria will not be sufficient to meet TOC removal regulations

III. Conclusion

The City has performed preliminary research into the viability of utilizing its existing Water Treatment Facilities to treat Wastewater Effluent for a source of drinking water. It has further performed analysis to characterize this source of water and has identified those constituents that would be of an immediate health concern if not removed in the treatment process.

Taking these considerations into account, the City believes that the existing quality of the Wastewater Effluent lends itself to be effectively treated to drinking water standards, by utilizing the existing treatment processes within the City and the application of existing Rules and Regulations that govern Drinking Water Treatment.

The City eagerly awaits the TCEQ's response to this Concept Paper and anticipates that, based off of the data presented here within; the TCEQ will request a Formal Engineering Report to advance the project.

The City of Wichita Falls looks forward to working with the TCEQ in an effort to protect the citizens of Wichita Falls from running out of drinking water, which would ultimately lower the sanitary conditions and reduce the City's abilities to protect the public's health.

Appendix A

Wastewater Effluent Monitoring

Appendix A Wastewater Effluent Monitoring

Inorganic Constituent	Unit of Measure	Regulatory Limit	Wastewater Effluent (avg)
pH		>7.0 [2]	6.62
Temperature	C	N/A	27.0
Total Harness	ppm	N/A	130.0
Total Alkalinity	ppm	N/A	44.0
Turbidity	NTU	0.5 [1]	2.49
TSS	ppm	N/A	4.43
TDS	ppm	1000 [2]	760.0
Conductivity	us/cm	N/A	1232.0
Fluoride	ppm	4.0 [1]	1.96
Chloride	ppm	300 [2]	388.0
Bromide	ppm	N/A	0.6
Nitrite	ppm	1.0 [1]	0.09
Nitrate	ppm	10.0 [1]	78.0
Sulfate	ppm	300 [2]	75.0
Aluminum	ppm	0.05 [2]	0.022
Antimony	ppm	0.006 [1]	0.002
Arsenic	ppm	0.01 [1]	0.001
Barium	ppm	2.0 [1]	0.005
Beryllium	ppm	0.004 [1]	0.00002
Cadmium	ppm	0.005 [1]	0.003
Calcium	ppm	N/A	34.0
Chromium (total)	ppm	0.1 [1]	0.0006
Copper	ppm	1.3 [3]	0.004
Iron	ppm	0.3	0.09
Lead	ppm	0.015 [3]	0.0004
Magnesium	ppm	N/A	9.0
Manganese	ppm	0.05 [2]	0.024
Mercury	ppm	0.002 [1]	<0.0001
Potassium	ppm	N/A	28.19
Selenium	ppm	0.05 [1]	0.0005
Silver	ppm	0.1 [2]	0.002
Sodium	ppm	N/A	180.0
Thallium	ppm	0.002 [1]	0.0003
Zinc	ppm	5.0 [2]	0.07
TOC	ppm	N/A	9.74

1 Primary Drinking Water Standard
2 Secondary Standard
3 Action Level

Organic Constituent	Unit of Measure	Regulatory Limit	Wastewater Effluent (avg)
Alachlor	ppm	0.002	ND
Atrazine	ppm	0.003	ND
Benzopyrene	ppm	0.0002	ND
Carbofuran	ppm	0.04	ND
Chlordane	ppm	0.002	ND
Dalapon	ppm	0.2	ND
Dibromochloropropane	ppm	0.0002	ND
Di(2-ethylhexy 1)adipate	ppm	0.4	ND
Di(2-ethylhexy 1)phthalate	ppm	0.006	0.004
Dinoseb	ppm	0.007	ND
Diquat	ppm	0.02	ND
Endothall	ppm	0.1	ND
Endrin	ppm	0.002	ND
Ethylene Dibromide	ppm	0.00005	ND
Glyphosate	ppm	0.7	ND
Heptachlor	ppm	0.0004	ND
Heptachlor epoxide	ppm	0.0002	ND
Hexachlobenzene	ppm	0.001	ND
Hexachlorocyclopentadiene	ppm	0.05	ND
Lindane	ppm	0.0002	ND
Methoxychlor	ppm	0.04	ND
Oxamyl (Vydate)	ppm	0.2	ND
Pentachlorophenol	ppm	0.001	ND
Picloram	ppm	0.5	ND
Polychlorinated Biphenyls	ppm	0.0005	ND
Simazine	ppm	0.004	0.0011
Toxaphene	ppm	0.003	ND
2,3,7,8 –TCDD (Dioxin)	ppm	3×10^{-8}	ND
2,4,5-TP	ppm	0.05	ND
2,4-D	ppm	0.07	ND
1,1-Dichloroethylene	ppm	0.007	ND
1,1,1-Trichloroethane	ppm	0.2	ND
1,1,2-Trichloroethane	ppm	0.005	ND
1,2-Dichloroethane	ppm	0.005	ND
1,2-Dichloropropane	ppm	0.005	ND
1,2,4-Trichlorobenzene	ppm	0.07	ND
Benzene	ppm	0.005	ND
Carbon Tetrachloride	ppm	0.005	ND
cis- 1,2-Dichloroethylene	ppm	0.07	ND
Dichloromethane	ppm	0.005	ND
Ethylbenzene	ppm	0.7	ND

Monochhlorobenzene	ppm	0.1	ND
o-Dichlorobenzene	ppm	0.6	ND
para-Dichlorobenzene	ppm	0.075	ND
Styrene	ppm	0.1	ND
Tetrachloroethylene	ppm	0.005	ND
Toluene	ppm	1.0	ND
trans- 1,2-Dichloroethylene	ppm	0.1	ND
Trichloroethylene	ppm	0.005	ND
Vinyl Chloride	ppm	0.002	ND
Xylenes	ppm	10.0	ND
Total Trihalomethanes	ppm	0.08	0.106
Chloroform	ppm	0.07 [1]	0.0077
Dibromochloromethane	ppm	0.06 [1]	0.051
Dichlorobromomethane	ppm	0 [1]	0.029
Bromoform	ppm	0 [1]	0.025
Haloacetic Acid 5	ppm	0.06	0.064
Dichloroacetic Acid	ppm	0 [1]	0.015
Trichloracetic Acid	ppm	0.02 [1]	0.011
Monochloroacetic Acid	ppm	0.07 [1]	0.0032
Bromoacetic Acid	ppm	N/A	0.021
Dibromoacetic Acid	ppm	N/A	0.026

1 Maximum Contaminant Level Goal

Radiological Constituent	Unit of Measure	Regulatory Limit	Wastewater Effluent (avg)
Gross Alpha	pCi/L	15.0	-0.93 (± 0.90)
Gross Beta	pCi/L	N/A	20.6 (± 1.2)

Microbiological Constituent	Unit of Measure	Regulatory Limit	Wastewater Effluent (avg)
Cryptosporidium	oocysts/L	N/A	0.566
Giardia	cysts/L	N/A	8.56
Total Coliform	MPN/100mL	N/A	179.3
E. Coli	MPN/100mL	N/A	10.48
Total Culturable Virus	MPN/100mL	N/A	<0.387

Appendix B

Wastewater Effluent Monitoring

for

Unregulated / Emerging Constituents of Concern

Appendix B Wastewater Effluent Monitoring for Unregulated / Emerging Constituents of Concern

Constituent	Unit of Measure	Regulatory Limit	Wastewater Effluent (avg)
Perchlorate	ug/L	N/A	0.17
Sucralose	ug/L	N/A	43.0
Perfluorooctanoic Acid (PFOA)	ng/L	N/A	28.0
Acetaminophen	ug/L	N/A	0.008
Antipyrine	ug/L	N/A	0.004 [2]
Atenolol	ug/L	N/A	0.128
Carbamazepine	ug/L	N/A	0.059
Cotinine	ug/L	N/A	0.025 [1]
DEET	ug/L	N/A	0.116 [1, 2]
Fluoxetine	ug/L	N/A	0.009
Meprobamate	ug/L	N/A	0.505
Nicotine	ug/L	N/A	0.019 [1]
Paraxanthine	ug/L	N/A	0.029
Primidone	ug/L	N/A	0.391
Sulfamethoxazole	ug/L	N/A	0.004
Theobromine	ug/L	N/A	0.465 [1, 2]
Dilantin	ug/L	N/A	0.279
Salicylic Acid	ug/L	N/A	0.18 [2]
Theophyliine	ug/L	N/A	0.040
Triclocarbon	ug/L	N/A	0.076 [1]
Galaxolide	ng/L	N/A	490.0
Tonalid	ng/L	N/A	71.0
Progesterone	ng/L	N/A	0.2 [2]

1 *Detected in Current Lake Water also.*
2 *Detected in Current Tap Water also.*

File PWS 2430001/CO

Bryan W. Shaw, Ph.D., *Chairman*
Carlos Rubinstein, *Commissioner*
Toby Baker, *Commissioner*
Zak Covar, *Executive Director*

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

February 8, 2013

Mr. Russell Schreiber, P.E., Director of Public Works
City of Wichita Falls
P.O. Box 1431
Wichita Falls, TX 76307-1431

Subject: City of Wichita Falls – PWS ID No. 2430001
Review: Concept Paper for the Emergency Reuse of Wastewater Effluent as a Source for Direct Potable Reuse in Wichita Falls
Wichita County, Texas
CN 600129316 RN 101611275

Dear Mr. Schreiber:

On November 13, 2012, the Texas Commission on Environmental Quality (TCEQ) received the City of Wichita Falls' (City's) Concept Paper for the Emergency Reuse of Wastewater Effluent as a Source for Direct Potable Reuse in Wichita Falls (Concept Paper) for review. The City is in an extended drought with source water reservoirs currently at approximately 43 percent capacity. Without any projected rainfall in the future to produce a significant quantity of runoff, the City is proposing to temporarily convert part of the Cypress Surface Water Treatment Plant (SWTP) to a direct potable reuse (DPR) water treatment plant (WTP) for four to six months to extend the existing capacities of the surface water reservoirs. The City proposes to augment its potable water supply with effluent from the temporary DPR WTP once the combined lake levels are 30 percent or less. Once the combined lake levels return to a level over 40 percent, the City would cease use of the temporary Cypress DPR WTP. In addition, the City is working on a proposal for a long-term, permanent DPR WTP. **The comments in this letter are based on the City's proposed temporary project requesting a one-time emergency operation with a duration not to exceed six months.**

The following table lists the City's existing potable water treatment facilities, with their TCEQ-assigned identification numbers and activity status.

Existing Wichita Falls Facilities with TCEQ-Assigned Identification Numbers (IDs)

ID	Plant Name (in TCEQ data)	Type	Status	Availability
TP15131	CYPRESS 1961	Treatment Plant (TP)	Active (A)	Permanent (P)
TP15132	CYPRESS 1987	TP	A	P
TP21567	CYPRESS 2008 RO MEMBRANE PLANT	TP	A	P
TP410071	CYPRESS 2010	TP	A	P
TP15134	JASPER 1951	TP	A	P

ID	Plant Name (in TCEQ data)	Type	Status	Availability
TP20695	JASPER 2005	TP	A	P
TP15133	JASPER 1941	TP	Inactive	P

Proposed DPR WTP

The Cypress Surface Water Treatment Plant (SWTP) currently consists of four parallel treatment trains. Three of the parallel trains are referred to as the 1961 (Plant ID 15131), 1987 (Plant ID 15132) and 2010 (Plant ID 410071) Plants and treat Lake Arrowhead and Lake Kickapoo source water from the City's Secondary Reservoir. These three treatment trains provide conventional surface water treatment using coagulation, flocculation, clarification/sedimentation, filtration, disinfection, and lime softening. The fourth train is referred to as the Cypress 2008 RO Membrane Plant (Plant ID 21567) and currently treats Lake Kemp source water from the Headquarters Road Reservoir. This fourth train consists of coagulation, flocculation, clarification, microfiltration (MF) membranes, reverse osmosis (RO) membranes and disinfection with a 10.0 million gallons per day (MGD) RO permeate capacity. In addition to the Cypress SWTP, the City also operates a second plant, the Jasper SWTP (Plant ID Nos. 15133, 15134, and 20695), on the opposite side of the City. The Jasper SWTP consists of conventional surface water treatment with a total capacity of 42 MGD.

The City's Concept Paper included the following proposed Cypress SWTP modifications for the temporary Cypress DPR WTP treatment train:

- Initially divert 7.5 MGD of River Road Wastewater Treatment Plant (RR WWTP) effluent approximately 8.5 miles away to the Cypress SWTP location;
- Provide total chlorine (chloramines) disinfection of the RR WWTP's effluent in the 8.5 miles of pipeline;
- Disconnect the Cypress 2008 RO Membrane Plant's influent piping from the existing raw surface water source (Lake Kemp) and effluent piping to the 1961 and 2010 Plant's individual clearwell piping;
- Connect the treated wastewater pipe from the RR WWTP to the influent of the Cypress 2008 RO Membrane Plant's train;
- Boost the total chlorine residual before the Cypress 2008 RO Membrane Plant's clarifier;
- Discharge 5.0-MGD of the Cypress 2008 RO Membrane Plant's treated effluent into the existing backwash waste lagoon;
- Transfer the decant water from the backwash waste lagoon to the 1961, 1987, and 2010 Plant's existing raw water splitter box and convert the splitter box to a blending chamber for the temporary Cypress DPR WTP;
- Blend the Cypress 2008 RO Membrane Plant's effluent with 5.0-MGD of raw surface water from the Secondary Reservoir in the converted blending chamber;
- Send 10.0 MGD of blended backwash lagoon and Secondary Reservoir water to one of the three existing conventional surface water treatment trains (which one was not identified);
- Boost the total chlorine residual before discharging the filtered water to the Cypress SWTP's clearwells;
- Discharge to distribution; and

- Return to normal operations of treating only raw surface water after no more than six months of operation.

TCEQ Comments on Concept Paper

The City submitted a Concept Paper for TCEQ review and response. The City will use TCEQ's response to develop and submit an Engineering Report for the proposed temporary DPR WTP. The City's Concept Paper has been reviewed and discussed by technical staff and TCEQ management. Based on our review and discussions of the one-time temporary potable reuse project, we have the following comments:

- The direct use of treated wastewater as a raw water source for a public water supply is not addressed in federal or state regulations; therefore an exception to Title 30 of the Texas Administrative Code (30 TAC) §290.41 is required. Similarly, 30 TAC §290.42 does not address the design requirements for DPR treatment plants. Since the TCEQ does not have rules that contain minimum design, treatment, operating, maintenance, monitoring, and reporting requirements for direct reuse sources or DPR WTPs, the City's proposed temporary DPR WTP will require the submittal of written requests for temporary exceptions to the TCEQ for review under 30 TAC §290.39(l). The requests for exceptions will be reviewed on a site-specific basis. Please note:
  - Any exception granted is subject to revision or revocation if the granting of the exception results in an increase in public health risk or degradation in water service as described in 30 TAC §290.39(l)(2).
  - Please be aware that all exceptions are subject to revision or revocation if the U.S. Environmental Protection Agency (EPA) revises the allowable maximum contaminant levels for existing regulated contaminants or establishes drinking water standards for chemical or microbiological contaminants that are currently unregulated. Exceptions related to the temporary Cypress DPR WTP may also be revised or revoked if substantiated data becomes available establishing public health risk levels for any unregulated contaminants in drinking water.
  - Based on the absence of rules for DPR WTPs, the TCEQ will review each public water system's proposed site-specific minimum design, operation, maintenance, monitoring, and reporting requirements as exceptions as required by 30 TAC §290.39(l). The proposed site-specific design, operation, maintenance, monitoring, and reporting ideas must provide the same or greater levels of public health protection than those provided by the TCEQ design rules for conventional source waters. The TCEQ will review the proposal and the alternative provided by the PWS to ensure public health will be protected to the same level or greater as the minimum requirements for conventional water sources. If the proposed design, operation, maintenance, monitoring, and reporting criteria do not demonstrate adequate protection of public health, the TCEQ can establish more stringent requirements or ask the public water system for another alternative(s).
  - The City will be required to submit an Engineering Report and detailed engineering plans and specification for TCEQ review. The City must receive the TCEQ's approval-to-construct in writing prior to beginning construction.

- Since the City does not plan to conduct a pilot test prior to constructing the proposed DPR WTP, the City will need to request temporary exceptions to allow the TCEQ to review the necessary engineering plans for modification of the Cypress SWTP facility.
- The City must submit a Full-Scale Verification Testing Protocol with the temporary exception requests. Pursuant to the Texas Health & Safety Code (THSC) §341.031 and §341.0351, the TCEQ staff will review the Protocol to determine if sufficient information will be collected during the full-scale verification testing to demonstrate that:
    - The proposed DPR WTP will be able to continuously provide public drinking water that will be free of deleterious matter;
    - The proposed DPR WTP's effluent will comply with the drinking water standards and treatment techniques established by the commission and the United States Environmental Protection Agency (EPA); and
    - The City will continue to provide an adequate and safe drinking water supply.

  The City will be required to conduct the full-scale verification testing in accordance with the conditions in a TCEQ's written response after reviewing the City's verification testing protocol. The full-scale verification test must include at least one continuous test period of **no less than 30 days** with at least one of each of the treatment processes in operation at the City's selected maximum flow rates and operating parameters. After performing a chemical clean-in-place (CIP) procedure on the test microfiltration (MF) and reverse osmosis (RO) membrane units, the full-scale verification testing must continue at the same selected maximum flow rates and operating parameters for at least ten (10) more days to verify the CIP procedures were effective in flux recovery. A CIP procedure is to be performed on the selected RO membrane skid at the same time as the MF membrane unit(s) CIP procedure is performed. Please note, if there are equipment failures or failures to produce a water quality that continuously meets the requirements of 30 TAC Chapter 290, Subchapter F and the City makes a modification to one or more treatment processes to achieve an acceptable water quality, the verification test **must be restarted.**
- During the required full-scale verification testing, the effluent from the proposed temporary Cypress DPR WTP cannot be discharged to the City's potable water system and must be disposed of in accordance with a TCEQ discharge or reclaim permit.
- After completion of the full-scale verification testing, the City must submit an acceptable Full-Scale Verification Testing Report for the TCEQ's review. The TCEQ will review the Full-Scale Verification Report and respond in writing to document whether the City may begin producing water through the temporary Cypress DPR WTP. The City cannot begin discharging the effluent from the temporary DPR WTP to the City's distribution system until written TCEQ approval is received that documents the Cypress DPR WTP can produce finished water that meets all Federal Safe Drinking Water Standards. Please note that if the City fails to meet all TCEQ requirements and limitations contained in the letter approving the discharge the TCEQ can revoke the temporary approval or impose additional requirements.

  - At this time the City has not determined how the finished water generated from the DPR WTP will be managed prior to approval for distribution as potable water. The City will need to identify management options prior to beginning construction on any phase of the Emergency DPR Project. If management options require TCEQ approval, the City will need to submit the necessary information for those approvals. Per discussion at the project meeting on January 18, 2013, the de-chlorinated finished water may be discharged via WQ0004419-000 permitted Outfall 001 as long as the total permitted flow of 6 MGD is not exceeded.

- Under normal circumstances, the TCEQ requires that exception requests be submitted before engineering plans and specifications. However, due to the reported shortage of surface water supplies, the TCEQ will expedite reviews of the above-required submittals.

- The Concept Paper indicated that the City's primary focus will be the removal of contaminants from the RR WWTP's effluent that have short-term (acute) health effects only. Please note that there is no leeway in the federal requirements for primary drinking water standards with long-term health effects for Texas public water systems because of the drought. Therefore, the following provisions apply:
  - The City will not receive any reduced requirements for primary drinking water standards of 30 TAC 290 Subchapter F whether they have long-term or short-term health effects.
  - All treated water compliance sampling must be conducted as specified in the standards of 30 TAC 290 Subchapter F. If the Cypress SWTP has been on reduced chemical monitoring, the City may be required to return to routine chemical monitoring schedules for the Cypress SWTP due to the addition of source water from the RR WWTP.

- In the City's consulting engineer's letter dated February 22, 2012, the City requested approval to use chloramines as a biocide to control corrosion of the microfiltration (MF) membrane unit's piping being caused by iron-related bacteria and sulfur-reducing bacteria. TCEQ approved this treatment change. Please provide information on the effectiveness of this treatment process and if dechlorination is being provided prior to the RO membranes.

- The Concept Paper indicates disinfection byproducts will have to be reduced to comply with the maximum contaminant level (MCL). Although projected levels of these contaminants appear to be acceptable, please note the City should plan to achieve levels lower than the MCL so that the City's wholesale water purchasers receive water of an acceptable quality at the wholesale meters.

- If the City believes that during the operation of the temporary Cypress DPR WTP, it will exceed a secondary drinking water standard and wishes to temporarily produce water that does not meet that secondary drinking water standard, a written request for a conditional approval must be submitted to the TCEQ's Public Drinking Water Section at the following address:

TCEQ Public Drinking Water Section – MC 155
Attn: Bob Patton, Manager
P.O. Box 13087
Austin, TX 78711-3087

- All pipe connections and common walls between basins containing waters in different stages must be examined for cross-connections. The engineering plans and specifications must contain the necessary modifications to eliminate any cross-connection. This includes, but is not limited to, the following:
  - The effluent piping from the Cypress 2008 RO Membrane Plant must be physically disconnected from the 1961 and 2010 Plants' clearwells and any other existing effluent piping from the conventional surface water treatment trains.
  - The effluent piping from the Cypress 2008 RO Membrane Plant's train must be provided with an air gap at the discharge into the existing backwash lagoon.
  - No cross-connection can exist between waters in two different stages of treatment. This includes the MF and RO membrane units during chemical clean-in-place (CIP) procedures.
  - The Concept Paper did not indicate which of the Cypress SWTP's conventional treatment trains will be taken offline during the use of the RR WWTP effluent or whether those trains will continue to treat raw surface water to be blended with the proposed temporary Cypress DPR WTP effluent. If the City plans to operate a conventional treatment train to treat raw surface water, TCEQ acceptable cross-connection protection must be provided.
- The City's planned sanitary procedures and disinfection methods must provide for:
  - Returning all four Cypress SWTP's treatment trains to raw surface water source (current) operation status and physically disconnecting the Cypress 2008 RO Membrane Plant's train from the RR WWTP's piping; and
  - Physically removing the temporary effluent discharge pipe from the Cypress 2008 RO Membrane Plant to the existing backwash waste lagoon and reconnecting it to one or more of the clearwells.
- The City must provide a description, drawings, and specifications describing how the City will control the blend of RO membranes' permeate (delivered from the existing backwash lagoon) with the raw surface **water so that there is always a blending ratio of one-to-one or a ratio that provides more raw surface water than RO membrane permeate.** This should include any rate-of-flow controllers, engineered orifice plates, and flow-indicating devices. Note that the TCEQ will require monitoring, record keeping, and reporting of the daily blending ratios.
- If any of the Cypress SWTP's other conventional treatment trains will remain in service treating raw surface water, the planned blending ratio and what modifications will be necessary for ensuring control and monitoring of the blending ratio must be addressed.

- If either of the other two Cypress SWTP conventional treatment trains will remain in service treating raw surface water, the connections between the clearwells must be piped so that the temporary Cypress DPR WTP's clearwell is completely separated from the conventional SWTP clearwells
- The Concept Paper stated that the City intends to maintain a disinfectant residual using chloramines in the entire 8.5 miles of pipe from the RR WWTP to the temporary Cypress DPR WTP. Since the RR WWTP's effluent will be high in free ammonia, injection of chlorine would form chloramines without injecting additional ammonia. However, viral inactivation credit is not allowed by rule for a total chlorine residual when ammonia is provided prior to chlorine. To receive inactivation credit, the City may pursue one of the following methods:

Cl2 @ 2mg/l

  - Modify the City's proposal to inject sufficient chlorine to achieve break-point chlorination and maintain a continuous measurable free chlorine residual prior to ammonia injection. If this option is selected, the City will need to provide at least 8.0-log of total viral removal or inaction through the temporary Cypress DPR WTP. Please note this option has the potential to form very high levels of disinfection byproducts, so the City must include information on how those levels will be controlled to comply with 30 TAC §290.115.
  - Inject another disinfectant such as chlorine dioxide or ozone and maintain a measurable residual before converting to chloramines. To clarify, since the question has been asked in conference calls, the use of chlorine dioxide or ozone alone is not considered an advanced oxidation process, nor does it provide the same benefits as recognized advanced oxidation processes. If chlorine dioxide or ozone is used, the City must meet the standards of 30 TAC §290.114 and will need to provide at least 8.0-log of total viral removal or inaction through the temporary Cypress DPR WTP.
  - Use the free ammonia present in the WWTP effluent to produce a chloramine residual. If this option is used:
    - The City will need to provide at least 9.0-log of total viral removal or inactivation through the temporary Cypress DPR WTP. Based on consultations with EPA Region 6 staff, the TCEQ has concluded that 1.0 log of additional viral log inactivation, for a total of 9.0-log, will provide an equivalent safety factor to that provided when chlorination precedes ammonia addition.
    - The City must comply with the monitoring and maximum contaminant levels of 30 TAC §290.106 for cyanide at the Cypress SWTP entry point.

- Interferences in the analytical method for determining total chlorine residual in treated wastewater can result in the inclusion of constituents that do not provide quantifiable disinfection. In these cases, the measured total chlorine residual could incorrectly indicate a higher inactivation of viruses and *Giardia* than actually occurred. One method of determining the actual inactivation provided by chloramines is to measure the monochloramine residual and use it to calculate the inactivation for a disinfection zone. The TCEQ routinely requires plants that use chloramines to measure monochloramine, which is the desired disinfectant species.

- The TCEQ is applying the following requirements to DPR WTPs:
  - Effective April 1, 2012, the maximum *Cryptosporidium* removal credit a public water system treating surface water can receive is the lesser of the acceptable Challenge Test log removal credit ($LRC_{C\text{-}test}$) granted by the TCEQ after review of the Challenge Test Report or the removal that can be demonstrated during a direct integrity test (LRC_{DIT}) using a TCEQ-approved test pressure. TCEQ staff are currently reviewing the Challenge Test Report for the US Filter (now owned by Siemens) CMF-S7, Module Part No. 119023, S10V MF membrane modules. This Challenge Test Report for the City's MF membranes was posted on the National Sanitation Foundation's website on December 4, 2012. The TCEQ will notify the City when we have completed the review of the Challenge Test Report and approved an $LRC_{C\text{-}test}$ value for the City's MF membranes.
  - In TCEQ's April 30, 2012 letter, the TCEQ approved direct integrity test (DIT) values for the S10V MF membranes at 3.0-log removal. Because the source of the water has changed, key parameters like temperature, flow, volumetric concentration factor, and the log removal required may change. Please be prepared to resubmit the DIT values with the requests for temporary exceptions for the proposed temporary Cypress DPR WTP. Please note that these DIT values are under review and may be revised.

  Please note that the above information is also necessary for the City to continue to receive removal credit for the Cypress 2008 RO Membrane Plant when treating surface water.

- It was not indicated what waste disposal methods will be used at the Cypress SWTP for all waste streams generated during the temporary Cypress DPR WTP's operation. Specifically, the methods of disposing of the clarifiers' blow-down waste, MF membrane backwash waste, MF and RO membrane clean-in-place waste, and any other liquid or solid waste were not indicated. Consideration must be given to the potential increase of pathogens by any recycling of these wastes. Because of the potential for an increase in pathogen concentrations in the RR WWTP effluent, the City will need to address the following:
  - All clarifier blow-down, MF membrane backwash waste, media filter backwash waste, and other generated waste cannot be sent to the existing backwash waste lagoon receiving effluent from the RO Membrane Plant during operation of the temporary Cypress DPR WTP. Consideration should be given to returning the decant to a point in front of the temporary Cypress DPR WTP, head of the RRWTP, or discharging to a stream. The City will need to identify options for the disposal of the DPR WTP waste streams prior to beginning construction on any phase of the Emergency DPR Project. Per discussion between Mr. Mark Southard, City of Wichita Falls Water Source/Purification Superintendent, and Mr. Michael Sunderlin, TCEQ Water Quality Division, the City plans to dispose of wastes from the DPR WTP via the existing outfall 001 authorized in TPDES Permit No. WQ0004419000. Per Mr. Sunderlin's initial review of data submitted by the City, which projected a worst-case concentration for parameters in the waste to be disposed of at the Cypress plant, it does not appear that the projected parameters would trigger additional requirements or limits in the current permit and no permit amendment would be necessary as long as the total permitted flow of 6 MGD is not exceeded.

- Identifying management options for finished water and disposal options for waste streams are critical for this project. If you have any questions or need further assistance regarding the DPR WTP's finished water or waste streams management options, please contact Ms. Jaya Zyman-Ponebshek, P.E., by email at Jaya.Zyman-Ponebshek@tceq.texas.gov or by telephone at (512) 239-2012 or by correspondence at the following address:

  Water Quality Division – MC 145
  Texas Commission on Environmental Quality
  P.O. Box 13087
  Austin, Texas 78711-3087

- If not currently provided or used, consideration needs to be given to filter-to-waste after backwashing the conventional gravity media filters.

- The TCEQ has continued our research on indirect potable reuse (IPR) and DPR since the City first approached the TCEQ in April 2012. Our research found that a disease outbreak in the City could result in a significant increase in the concentration of pathogens over the normal concentration. Such an increase could overload the RR WWTP's and/or temporary Cypress DPR WTP's treatment processes. The City's submittals must address how public health will be protected under those circumstances based on the continuous removal and/or inactivation, monitoring triggers and frequency, and time required to shut down one or more of the treatment plants.

  Please note that 8.0-log or greater (based on the City's selected disinfection protocol), 6.0-log and 5.5-log of removal and/or inactivation of viruses, *Giardia* cysts and *Cryptosporidium* oocysts, respectively, only provide protection of public health for specific concentration levels of these pathogens in the RR WWTP effluent. To date, the City has reported the following maximum pathogen concentration for the RR WWTP effluent:

  - *Giardia* concentration of 34.82 cysts per liter;
  - *Cryptosporidium* concentration of 5.04 oocysts;
  - *E. coli* concentration of 160 most probable number (MPN) per 100 milliliters (1,600 MPN per liter);
  - Total coliform concentration of 3,200 MPN per 100 milliliters (32,000 MPN per liter); and
  - No maximum data was available for total culturable virus concentrations, but a 2009 average concentration of <0.387 MPN per 100 milliliters (<3.87 MPN per liter) was provided.

  Therefore, the following information must be provided to support the City's proposed site-specific total log removal and/or inactivation:

  - All analytical data results for raw sewage and the RR WWTP's effluent for turbidity, total coliform, *E. coli*, culturable viruses, *Giardia* cysts, *Cryptosporidium* oocysts, and any other pathogens the City has been monitoring for the preceding five years. Include all analytical methods used and the laboratory's quality assurance and control methods and results.

- The proposed location and type of all continuous online monitoring and automatic shutdown triggers at the RR WWTP.
- The proposed location and type of all continuous online monitoring, grab sample monitoring taps, and automatic shutdown equipment at the temporary Cypress DPR WTP.
- The maximum time frames to receive results from grab sample analytical results.
- The CT Study spreadsheet for the proposed temporary Cypress DPR WTP, including the dimensions of all pipelines and treatment units. The spreadsheet should include the minimum detention time in the MF and RO membrane portion of the Cypress DPR WTP, the conventional portion of the Cypress DPR WTP, and any subsequent storage before release to the distribution system.
- The triggers that will be used for shutting down transfer of RR WWTP effluent to the Cypress DPR WTP and Cypress DPR WTP shutdown or alarms and what each of the triggers indicate.
- A description of multi pathogen treatment barriers, an analysis of what levels of treatment will be provided if a single or multi-barriers should fail, and what safeguards will be in place to prevent failure and response actions and timelines for treatment failures.

- If the City determines that the Cypress DPR WTP will be needed on a recurring or more permanent basis, the TCEQ recommends that the City install additional barrier(s) to inactivate *Cryptosporidium* oocysts and control any organic compounds that are not removed by the RO membranes. The proposed treatment configuration for the temporary Cypress DPR WTP includes two barriers for *Cryptosporidium* removal: physical removal through microfiltration membranes and physical removal though the conventional surface water treatment plant. An additional barrier such as advanced oxidation with hydrogen peroxide and ultraviolet (UV) light, or some alternative TCEQ-approved approach, could allow Cypress DPR WTP to remain in service if one of the removal barriers fails and would provide a means of oxidizing any chemical that might not be completely removed by the RO membranes.

- The Concept Paper indicated that the City has established a Water Quality Task Force that is composed of City staff from the Public Works, Public Utilities, and Health Departments. A list of triggers to activate the Water Quality Task Force and conduct an investigation was included. The City will be required to notify the TCEQ Water Supply Division and Abilene Regional Office by email and telephone if an established trigger is reached. TCEQ contacts for these types of notifications are Mr. Joel Klumpp at Joel.Klumpp@tceq.texas.gov or (512) 239-4453 and Mr. Cliff Moore by email at Cliff.Moore@tceq.texas.gov or (325) 698-6115. For notifications outside of normal business hours, call the 24-hour hotline number at (800) 777-3186. Based on the potential acute health risk, the TCEQ will require that the temporary Cypress DPR WTP be immediately shutdown (in addition to conducting an investigation) for:
  - Occurrence of a confirmed waterborne disease outbreak;
  - Failure to meet the TCEQ's minimum required disinfection levels for inactivation of pathogens;

- Any E. coli positive sample in the temporary Cypress DPR WTP plant, entry point, or distribution system; and
- Exceeding the maximum TCEQ-approved turbidity level for any treatment process.

- Please submit the standard operating procedures for the Water Quality Task Force including shut-down criteria with the request for temporary exceptions.

- The Concept Paper included a list of monitoring triggers at the RR WWTP for stopping the use of the RR WWTP effluent as a public water system source water. The City will be required to notify the TCEQ Water Supply Division and Abilene Regional Office by email and telephone if an established trigger is reached. TCEQ contacts for these types of notifications are Mr. Joel Klumpp at Joel.Klumpp@tceq.texas.gov or (512) 239-4453 of the TCEQ Water Supply Division and Mr. Cliff Moore by email at Cliff.Moore@tceq.texas.gov or (325) 698-6115 of the Abilene Regional Office if notification is needed. For notifications outside of normal business hours, call the 24-hour hotline number at (800) 777-3186.
  - The TCEQ will specify minimum and maximum allowable levels to be used for monitoring triggers of the RR WWTP effluent and shutdown of the temporary Cypress DPR WTP.
  - The TCEQ will specify monitoring triggers for the RR WWTP which may include eight-hour toxicity tests using a microscopic examination of samples from the aeration basin. The TCEQ Water Supply Division will require more detailed information on what microbes will be identified through this microscopic examination, analytical method(s) to be used, and the required training and experience for the City staff who will be conducting the tests.
  - Please submit the operations and monitoring plan with the request for temporary exceptions.

- In addition, the City has proposed monitoring triggers for the proposed temporary DPR WTP to initiate shutdown of the DPR WTP. The City shall be required to notify the TCEQ Water Supply Division and Abilene Regional Office by telephone if an established trigger is reached. TCEQ contacts for these types of notifications are Mr. Joel Klumpp at Joel.Klumpp@tceq.texas.gov or (512) 239-4453 and Mr. Cliff Moore by email at Cliff.Moore@tceq.texas.gov or (325) 698-6115. For notifications outside of normal business hours, call the 24-hour hotline number at (800) 777-3186. Additional DPR WTP monitoring triggers that the City should consider include, but are not limited to, the following:
  - A MF membrane unit that fails a DIT must be removed from service until it passes a DIT;
  - An individual MF membrane unit's filtrate turbidity level exceeds 0.100 nephelometric turbidity units (NTUs) for two consecutive five-minute readings; and
  - An individual granular media filter's turbidity level exceeds 0.150 NTUs for two consecutive fifteen-minute readings.

- The Concept Paper's Appendix A included the analytical results of the RR WWTP effluent for chemical and microbiological contaminants. In addition, the TCEQ is requesting additional information related to the City's historical finished drinking water.
  - All chemical and microbiological analytical results for the preceding five years must be provided. In addition, the average, minimum, and maximum reported levels must be included.
  - Appendix A of the Concept Paper indicated that there is not a regulatory limit for total coliform. While that may be true of the permit limits for the RR WWTP discharge permit, it is not true for finished drinking water. The federal rules establish the absence of total coliform as the regulatory limit for total coliform in finished drinking water. Please review 30 TAC §290.109(f) and 40 CFR §141.63 regarding compliance determination for microbial contaminants.
  - Please see 40 CFR §141.52 for maximum contaminant goals for *Giardia*, viruses, *Legionella*, total coliforms (including fecal coliforms and *E. coli*), and *Cryptosporidium*.

- Please note that the DPR facility must be staffed 24 hours a day, 7 days a week by licensed surface water operators unless adequate storage is provided to allow for the treatment but not release of the treated water until an operator is on-site.

- The City must provide documentation regarding coordination with all purchased water systems receiving water from the City regarding how these systems will be notified of the use of wastewater effluent as a source water. Please also address how the City's retail service customers have been informed of the City's plans to supplement the source water.

- The City must also indicate how it will inform its customers and purchased water systems of any exceedance of a drinking water standard contained in 30 TAC, Subchapter F or any failure to meet a TCEQ specified DPR WTP treatment technique requirement. These public notices must be issued in accordance with the requirements of 30 TAC 290.122. The City must also verify that it will include the information in its Consumer Confidence Report required by 30 TAC Subchapter H.

- The City must obtain all required TCEQ wastewater discharge and 210 permits from the TCEQ Water Quality Division. If you have any questions regarding the existing wastewater permits, amendments, or new permits, please contact Ms. Jaya Zyman-Ponebshek, P.E., by email at Jaya.Zyman-Ponebshek@tceq.texas.gov or by telephone at (512) 239-2012, or by correspondence at the following address:

  Drinking Water Quality Division – MC 148
  Texas Commission on Environmental Quality
  P.O. Box 13087
  Austin, Texas 78711-3087

  - Copies of all wastewater permits and discharge limits will need to be provided to the TCEQ Water Supply Division.

- The construction of the 8.5 miles of wastewater pipeline from the RR WWTP to the proposed temporary DPR WTP must be approved by the TCEQ Water Quality Division.
- The City will need to have a spill response plan for the above-ground wastewater transmission pipeline.
- Consideration must be given to security measures for the above-ground wastewater transmission pipeline to prevent accidental or intentional damage.
- At this point it does not appear that the change in the source water being treated by the RO membranes will impact the City's discharge permit No. WQ 00104419-000 to the Wichita River below Diversion Lake in segment No. 0214 of the Red River Basin. However, when the application for renewal of that permit gets submitted to the TCEQ's Water Quality Division, new influent and effluent data, along with stream water quality criteria, will be evaluated and a determination made as to whether additional parameters need to be monitored or limited.
- Our review of the Concept Paper did not find any mention of any modification to the RR WWTP to reduce the nitrate level. Please provide information on the status of this project.

Per discussion at the project meeting on January 18, 2013, the City plans to:

- Explore direct integrity testing of the Hydranautics RO membranes at the DPR WTP in order to receive pathogen removal credit; and
- Contact Hydranautics to inquire if third-party challenge testing of their RO membranes has been conducted in accordance with the 40 CFR §141.719(b)(2) and the EPA's Membrane Filtration Guidance Manual.

City staff also indicated during the January 18, 2013 meeting that the City has been using a "real-time" analytical method for monitoring *Cryptosporidium* oocysts levels in the RR WWTP. Please provide the following:

- Detailed information on the analytical method and quality assurance/quality control methods being used being used;
- Test equipment required;
- Staff training required; and
- Laboratory accreditation (such as through the EPA, National Environmental Laboratory Accreditation Conference, etc.) available for the analytical method.

The TCEQ commends the City for taking this approach to the DPR project, and requests that information regarding these initiatives be included in the City's next submittal to the TCEQ.

If you have other questions concerning this letter or if we may be of further assistance, please contact Mr. Joel Klumpp by email at Joel.Klumpp@tceq.texas.gov, by telephone at (512) 239-4453, or by correspondence at the following address:

Technical Review & Oversight Team – MC 159
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, Texas 78711-3087

Mr. Klumpp has been designated as the TCEQ point-of-contact for this project. Please route all correspondence and requests through him.

Sincerely,

Ada Lichaa

Ada Lichaa, P.G. Manager
Plan and Technical Review Section
Water Supply Division
Texas Commission on Environmental Quality

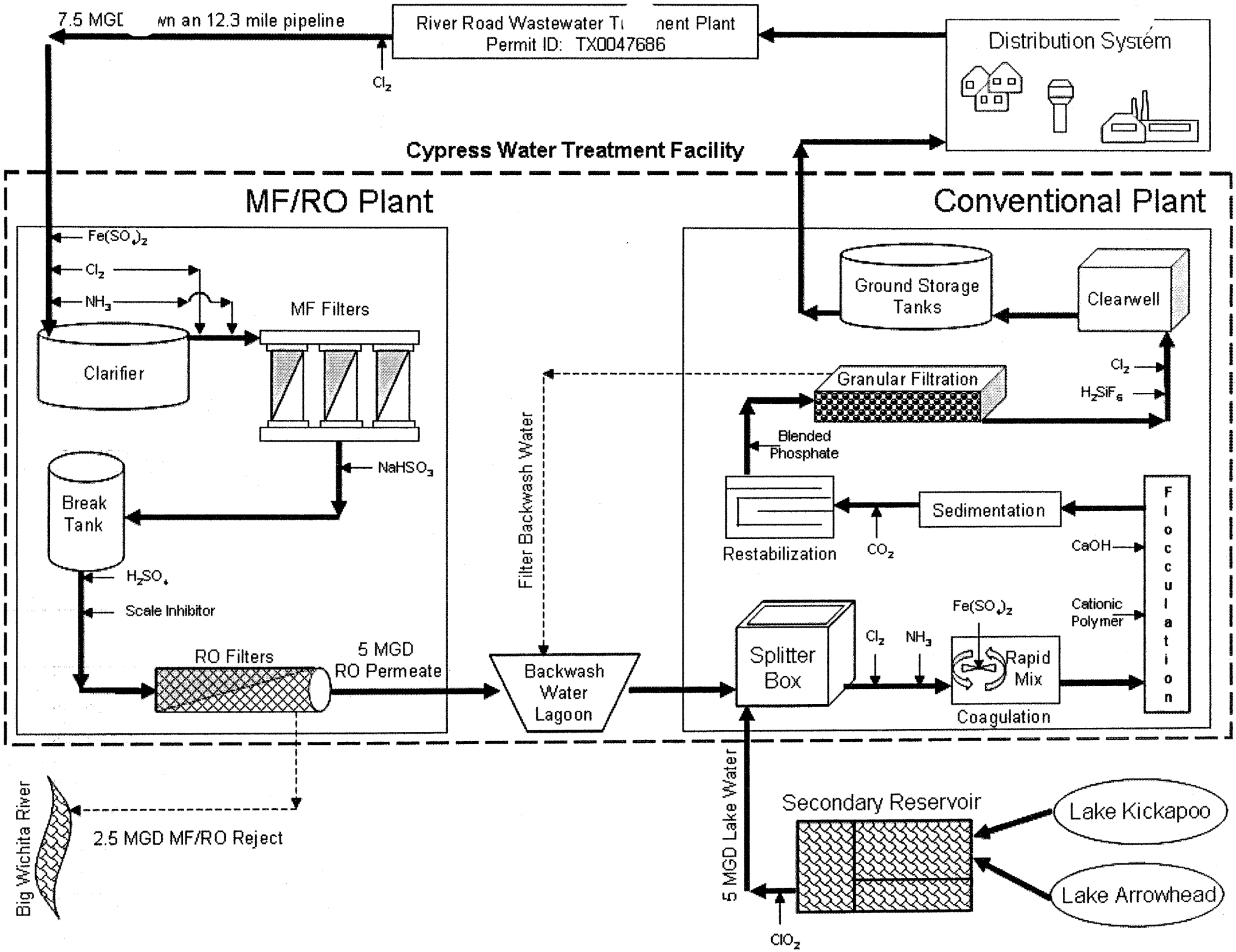
AL/JSW/

cc: The Honorable Glenn Barham, Mayor, City of Wichita Falls, P.O. Box 1431, Wichita Falls, TX 76307-1431
Mr. Daniel Nix, Public Utilities Operations Manager, City of Wichita Falls, P.O. Box 1431, Wichita Falls, TX 76307-143

APPENDIX G

DPR Schematic Diagram

Primary and Secondary Drinking Water Standards


7.5 MGD
River Road Wastewater Treatment Plant
Permit ID: TX0047686
Cl2
Distribution System
Cypress Water Treatment Facility
MF/RO Plant
Conventional Plant
Fe(SO4)2
Cl2
NH3
MF Filters
Clarifier
NaHSO3
Break Tank
H2SO4
Scale Inhibitor
RO Filters
5 MGD RO Permeate
Filter Backwash Water
Backwash Water Lagoon
Ground Storage Tanks
Clearwell
Granular Filtration
Cl2
H2SiF6
Blended Phosphate
Restabilization
CO2
Sedimentation
CaOH
Flocculation
Splitter Box
Cl2
NH3
Fe(SO4)2
Rapid Mix
Cationic Polymer
Coagulation
Big Wichita River
2.5 MGD MF/RO Reject
5 MGD Lake Water
Secondary Reservoir
Lake Kickapoo
Lake Arrowhead
ClO2

Maximum Contaminant Levels For Inorganic Chemicals In Public Drinking Water

Contaminant[2]	mg/L	Applicable Systems[1]
Antimony	0.006	CN
Arsenic	0.010	CN
Asbestos	7 million fibers/liter (longer than 10 μm)	CN
Barium	2.0	CN
Beryllium	0.004	CN
Cadmium	0.005	CN
Chromium	0.1	CN
Cyanide	0.2 (as free cyanide)	CN
Fluoride	4.0	C
Mercury	0.002	CN
Nitrate	10.0 (as nitrogen)	CNT
Nitrite	1.0 (as nitrogen)	CNT
Nitrate + Nitrite (Total)	10.0 (as nitrogen)	CNT
Selenium	0.05	CN
Thallium	0.002	CN

[1] C = Community; N = Non-transient, non-community; T = Transient, non-community

[2] Dissolved fraction analyzed for metals

Maximum Contaminant Levels For Organic Chemicals In Public Drinking Water

Contaminant	mg/L	Contaminant	mg/L
Alachlor	0.002	Ethylbenzene	0.7
Aldicarb	0.003	Ethylene dibromide (EDB)	0.00005
Aldicarb sulfone	0.002	Glyphosate	0.7
Alicarb sulfoxide	0.004	Heptachlor	0.0004
Atrazine	0.003	Heptachlor epoxide	0.0002
Benzene	0.005	Hexachlorobenzene	0.001
Benzo(a)pyrene	0.0002	Hexachlorocyclopentadiene	0.05
Carbofuran	0.04	Lindane	0.0002
Carbon tetrachloride	0.005	Methoxychlor	0.04
Chlordane	0.002	Monochlorobenzene	0.1
2,4-D	0.07	Oxamyl (Vydate)	0.2
Dalapon	0.2	Pentachlorophenol	0.001
Dibromochloropropane (DBCP)	0.0002	Picloram	0.5
Di(2-ethylhexyl) adipate	0.4	Polychlorinated biphenyls (PCB)	0.0005
Di(2-ethylhexyl) pthalate	0.006	Simazine	0.004
o-Dichlorobenzene	0.6	Styrene	0.1
p-Dichlorobenzene	0.075	2,3,7,8-TCDD (Dioxin)	0.00000003
1,2-Dichloroethane	0.005	Tetrachloroethylene	0.005
1,1-Dichloroethylene	0.007	Toluene	1.0
cis-1,2-Dichloroethylene	0.07	Toxaphene	0.003
trans-1,2-Dichloroethylene	0.1	2,4,5-TP (Silvex)	0.05
Dichloromethane	0.005	1,2,4-Trichlorobenzene	0.07
1,2-Dichloropropane	0.005	1,1,1-Trichloroethane	0.2
Dinoseb	0.007	1,1,2-Trichloroethane	0.005
Diquat	0.02	Trichloroethylene	0.005
Endothal	0.1	Vinyl chloride	0.002
Endrin	0.002	Xylenes (total)	10.0

Secondary Maximum Contaminant Levels
In Public Drinking Water

Contaminant[3]	Level[1]
Aluminum[2]	0.05 to 0.2 mg/L
Chloride	300 mg/L
Color	15 color units
Copper	1.0 mg/L
Corrosivity	Non-corrosive
Foaming agents	0.5 mg/L
Fluoride	2.0 mg/L
Hydrogen sulfide	0.05 mg/L
Iron	0.3 mg/L
Manganese	0.05 mg/L
Odor	3 threshold order number
pH	≥ 7.0
Silver	0.10 mg/L
Sulfate	300 mg/L
Total dissolved solids (TDS)	1000 mg/L
Zinc	5.0 mg/L

1 With the exception of the MCL for fluoride, which applies only to community PWS systems, these MCLs apply to both community and non-community systems. Silver was previously listed with a primary maximum contaminant level.

2 Range of values is based on aesthetic considerations and not on known health effects.

3 Dissolved fraction analyzed for metals

APPENDIX H

RRWWTP Effluent Lab Results and QA/QC Data

SUMMARY OF LAB RESULTS AND QA/QC DATA FOR RRWWTP EFFLUENT

Analyte	Min	Max	Average	# of Samples
Alkalinity (ppm)	31.00	118.00	63.27	26
Alkalinity, carbonate (ppm)	0.00	0.00	0.00	26
Ammonia - N (ppm)	0.15	1.10	0.63	6
Ammonium - N (ppm)	0.04	2.60	1.03	6
Bicarbonate alkalinity (ppm)	31.00	118.00	64.08	26
Bromide (ppm)	0.14	1.16	0.53	6
Chlorate (ppm)	0.24	0.69	0.39	6
Color	1.00	18.00	7.20	20
Conductivity (µs/cm)	1155.00	1744.00	1299.33	26
Fluoride (ppm)	0.36	2.64	0.91	6
Hardness, total (ppm)	117.00	251.00	151.08	26
Hardness,calcium (ppm)	59.00	136.00	100.04	26
Orthophosphate (ppm)	15.00	115.00	50.63	6
pH	6.44	7.71	6.80	26
Phosphorus (ppm)	2.20	4.70	3.11	10
TDS (ppm)	640.00	1816.00	816.52	23
Temperature (degrees C)	23.70	30.70	26.93	18
TON	0.00	1.00	0.30	10
TSS (ppm)	2.00	8.40	4.43	18
Turbidity (NTU)	0.85	5.45	2.30	26
Potassium (ppm)	12.35	222.26	71.21	6
17beta-Estradiol (ug/L)	0.00	2.90	0.72	6
Aluminum (ug/L)	14.26	1067.43	162.74	6
Antimony (ug/L)	0.00	2.73	1.20	6
Arsenic (ug/L)	0.93	16.06	5.05	6
Barium (ug/L)	5.07	19.66	12.05	6
Beryllium (ug/L)	0.00	0.30	0.08	6
Bromochloroacetic acid (ug/L)	2.10	21.00	11.42	6
Bromodichloromethane - MRL 0.5 ug/L	3.40	29.00	15.53	6
Bromoform - MRL 0.5 ug/L	1.60	25.00	13.04	6
Cadmium (ug/L)	0.00	2.62	0.93	6
Calcium (ppm)	29.57	220.68	70.90	6
Chloride (ppm)	224.97	400.68	275.28	6
Chlorodibromomethane (ug/L)	8.40	51.00	31.10	6
Chloroform (ug/L)	1.70	8.50	5.03	6
Chromium (Hex) (ug/L)	0.03	0.08	0.05	6

Chromium (Total) (ug/L)	0.10	2.33	1.05	6
Copper (ug/L)	2.81	14.68	5.52	6
Dibromoacetic acid (ug/L)	1.30	26.00	11.43	6
Dibromochloromethane - MRL 0.5 ug/L (ug/L)	3.70	51.00	24.98	6
Dichloroacetic acid (ug/L)	2.80	15.00	10.05	6
Estrone (ug/L)	0.00	30.00	8.70	6
Iron (ppm)	0.09	1.20	0.32	6
Lead (ug/L)	0.00	1.13	0.43	6
Magnesium (ppm)	2.33	86.63	21.08	6
Manganese (ug/L)	12.27	51.58	28.88	6
Monobromoacetic acid (ug/L)	3.00	5.20	4.13	6
Monochloroacetic acid (ug/L)	2.80	3.20	3.07	6
Nickel (ug/L)	5.00	5.50	5.25	6
Nitrate-Nitrogen (ppm)	12.32	21.77	17.45	6
Nitrite - N (ppm)	0.00	0.38	0.11	6
N-Nitrosodimethylamine (NDMA) (ug/L)	0.00	18.00	10.25	6
N-Nitrosopyrrolidine (NPYR) (ug/L)	0.00	2.00	0.50	6
Perchlorate (ug/L)	0.11	0.21	0.16	6
Progesterone (ug/L)	0.00	0.40	0.18	6
Selenium (ug/L)	0.03	10.25	3.35	6
Silica (ppm)	6.30	9.20	7.85	6
Silver (ug/L)	0.00	2.42	1.10	6
Sodium (ppm)	172.27	1473.76	532.68	6
Sulfate (ppm)	45.14	82.69	59.09	6
Thallium (ug/L)	-0.14	0.29	0.14	6
trans-Testosterone (ug/L)	0.00	0.40	0.10	6
Trichloroacetic acid (ug/L)	2.60	12.00	7.55	6
TTHM (Total Trihalomethanes) (ug/L)	18.10	112.70	69.48	6
Zinc (ug/L)	25.99	85.00	54.90	6
Cryptosporidium (oocysts/L)	0.04	5.04	0.69	25
Escherichia coli (CFU)	<4	160.00	44.00	48
Giardia (cysts/L)	0.74	34.82	8.31	25
HPC (MPN)	40.00	530.00	253.33	4
Total Coliform (CFU)	<4	3200.00	190.62	48
2,4,6-Trichlorophenol - MRL 0.1 ug/L	0	0.5	0.133333333	6
Acetaminophen - MRL 0.005 ug/L	0	0.011	0.0052	6
Antipyrine - MRL 0.001 ug/L	0	0.004	0.001	6

Atenolol - MRL 0.001 ug/L	0	0.225	0.1348	6
Azithromycin - MRL 0.005 ug/L	0	0.25	0.058428571	6
Bezafibrate - MRL 0 ug/L	0	0.0006	0.00012	6
Carbamazepine - MRL 0.001 ug/L	0.05	0.348	0.180571429	6
Cotinine - MRL 0.001 ug/L	0	0.025	0.017	6
Cyanide (ug/L)	0.034	0.034	0.034	6
DEET - MRL 0.005 ug/L	0.035	0.197	0.0945	6
Di(2-ethylhexyl)phthalate - MRL 0.6 ug/L	0	4.2	1.4	6
Diazepam - MRL 0.001 ug/L	0	0.002	0.0006	6
Diclofenac - MRL 0 ug/L	0	0.077	0.018833333	6
Dilantin - MRL 0.002 ug/L	0.186	0.513	0.413714286	6
Diltiazem - MRL 0 ug/L	0	0.0877	0.016814286	6
Diuron (ug/L)	0.21	0.21	0.21	6
DOC (ppm)	8.11	10.45	8.947272727	11
Fluoxetine (Prozac) - MRL 0.001 ug/L	0.007	0.035	0.018166667	6
Galaxolide (ug/L)	0.27	1.2	0.658571429	6
Gemfibrozil - MRL 0 ug/L	0	0.2963	0.068614286	6
Meprobamate - MRL 0.001 ug/L	0.412	0.781	0.530714286	6
Naproxen - MRL 0.002 ug/L	0	0.036	0.011	6
Nicotine - MRL 0.005 ug/L	0	0.104	0.042857143	6
Paraxanthine - MRL 0.005 ug/L	0.026	0.21	0.0796	6
Primidone - MRL 0.005 ug/L	0.321	1.1	0.638428571	6
Salicylic acid - MRL 0.05 ug/L	0	0.19	0.11	6
Simazine (6-chloro-N,N'-diethyl-1,3,5-triazine-2,4-diamine)- MRL 0.07 ug/L	0	0.62	0.208333333	6
Sucralose (ug/L)	43	43	43	6
Sulfamethizole - MRL 0.001 ug/L	0	1	0.2	6
Sulfamethoxazole - MRL 0.001 ug/L	0	1.5	0.273166667	6
Sulfasalazine - MRL 0.005 ug/L	0	0.042	0.0108	6
Tetracycline - MRL 0.5 ug/L	0	0.93	0.2325	6
Theobromine - MRL 0.05 ug/L	0.24	0.86	0.608333333	6
Theophylline - MRL 0.005 ug/L	0	0.12	0.052714286	6
TOC (ppm)	8.66	11.84	9.964545455	11
Toluene - MRL 0.5 ug/L	0	1.4	0.35	6
Tonalid (ug/L)	0.042	0.13	0.089	6
Triclocarban - MRL 0.005 ug/L	0.07	0.222	0.12	6
Trimethoprim MRL 0.001 ul/L	0	0.642	0.155857143	6
Vinyl chloride (Chloroethene)- MRL 0.2 ug/L	0	1.6	0.533333333	6
Gross Alpha Particles	-1.9 +- 1	0.78 +- 1.27	-0.21 +- 0.94	6
Gross Beta Particles	13.8 +- 1.2	50.3 +- 2.6	27.8 +- 1.53	6

Wastewater Treatment

All Samples taken after Biological treatment

Summary Results 8/1/12 through 4/3/13

	Minimum	Maximum	Average	units	# Samples
Turbidity	0.88	5.50	2.38	NTU	71
Water Temperature	14.9	30.8	22.5	*C	246
pH	6.0	8.2	6.9		246
Total Suspended solids	2.00	12.40	5.76	mg/l	244
Nitrate	8.1	53.3	15.6	mg/l	223
Alkalinity	28.4	132.0	69.3	mg/l	219
CBOD	2.00	6.02	3.04	mg/l	240
Free NH3 Pre Chlorination	0.25	8.00	3.65	mg/l	97
Total Chlorine	1.00	8.93	1.64	mg/l	246
Mono Chlorine	0.05	2.00	1.02	mg/l	205
Free Chlorine	0.00	1.10	0.04	mg/l	164
Free NH3 post Chlorination	0.10	4.81	0.34	mg/l	235
lbs per day Chlorine	200	1210	605	pounds	246
Ecoli	4	160	9	CFU	173
Total Coliform	4	18100	608	CFU	158

MRSA All results are Zero.

BioVir Laboratories, Inc

NELAC #05234CA
EPA ID# 01401, CA-ELAP #179

685 Stone Road, Unit 6 • Benicia, CA 94510 • (707) 747-5906 • 1-800-GIARDIA • FAX (707) 747-1751 • WEB: www.biovir.com

LAB Sample ID: 130231-001A

Client / Address: Cit of Wichita Falls WWTP, 1005 River Road, Wichita Falls TX 76305
Client No: WIC004 **Purchase Order No:** P1302568
PWS ID: **Facility ID:** Raw Wastewater River Road WWTP
Client Contact: Bill Thornton, **Client Phone:** 940-766-2841

SAMPLE INFORMATION:

Name of Sampler:	Bill Thornton	**Customer Sample No.:**	RR RAW 4-4-13A
Matrix:	Waste Water, untreated	**Date/Time Received:**	3/6/2013 10:05:00 AM
Sample Point ID:		**Check-in Temp. (0-20C)**	0.6
Sample Collection Date:	3/5/2013	**Container Type:**	1 Gallon Cubitainer
Sample Time:	10:00:00 AM		

Comments:

ASSAY RESULTS: 1693 Evaluation Cryptosporidium & Giardia March 200

Sample Preparation

Sample Vol Examined	0.25 L	Number of Filters	0
No. of Slides Examined	1	Resuspended Conc. Vol.	5 mL
Pellet Volume	1.0 mL	Analyst	kw

Sample Results

Analyte	Crypto
No. of Crypto	0
Analyte 2	Giardia
No. of Giardia	369

Sample Q. C

OPR Crypto Results	54 %
OPR Giardia Results	56 %
Method Blank Results	0

SAMPLE EVALUATION PERFORMANCE CRITERIA: The precise rates of recovery of organisms from environmental samples cannot be determined. B ioVir Laboratories has analyzed your sample(s) in accordance with the method described with each analyte above, however, due to inherent limitations of these methods organisms may avoid detection. For additional information regarding the limitations of the method(s) referred to above please call us at 1-800-GIARDIA.

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4/16/2013
Report Date

Richard E Daniel
Signature

Quality Checked DCelio

BioVir Laboratories, Inc

NELAC #05234CA
EPA ID# 01401, CA-ELAP #179

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LAB Sample ID: 130231-001B

Client / Address: Cit of Wichita Falls WWTP, 1005 River Road, Wichita Falls TX 76305
Client No: WIC004 **Purchase Order No:** P1302568
PWS ID: **Facility ID:** Raw Wastewater River Road WWTP
Client Contact: Bill Thornton, **Client Phone:** 940-766-2841

SAMPLE INFORMATION:

Name of Sampler: Bill Thornton **Customer Sample No.:** RR RAW 4-4-13B Matrix Spike
Matrix: Waste Water, untreated **Date/Time Received:** 3/6/2013 10:05:00 AM
Sample Point ID: **Check-in Temp. (0-20C)** 0.6
Sample Collection Date: 3/5/2013 **Container Type:** 1 Gallon Cubitainer
Sample Time: 10:00:00 AM
Comments: 1693 Wastewater Modified G/C Matrix Spike

ASSAY RESULTS: 1693 Evaluation Cryptosporidium & Giardia March 200

Sample Preparation

Sample Vol Examined	0.25 L	Number of Filters	0
No. of Slides Examined	1	Resuspended Conc. Vol.	5 mL
Pellet Volume	1.0 mL	Analyst	kw

Sample Results

Analyte	Crypto
No. of Crypto	5
Analyte 2	Giardia
No. of Giardia	238
Sample Volume Spiked (Matrix Spike)	0.25
No. of Crypto Spiked	100
No. of Giardia Spiked	100

Sample Q. C

OPR Crypto Results	54 %
OPR Giardia Results	56 %
Method Blank Results	0

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REPORT NO.: 130231
PAGE NO.: 1 of 1
CLIENT: Cit of Wichita Falls WWTP
ADDRESS 1005 River Road
Wichita Falls, TX 76305
CLIENT NO WIC004 **CLIENT PO:** P1302568

ASSAY RESULTS:

Test: EPA 1615 **Method: EPA 1615**

BioVir #	Sample ID	Site	Analyte	Result	Units
130231-002A	RR RAW 4-4-13A Culture	Raw Wastewater River Road WWTP	Total Culturable Virus	37.8	MPN/L

Collector: Bill Thornton CollectDate 3/5/2013 CollectTime: 10:00:00 AM
ReceiveDate 3/6/2013 10:05:00 AM Matrix: Waste Water, untreated Temp 0.6
Volume: 3.8 L Analysis Start Date: 3/6/13 Analysis Start Time: 1205
Analyst: ValentinaL Analysis End: 4/9/2013

Comment

SAMPLE EVALUATION PERFORMANCE CRITERIA: The precise rates of recovery of organisms from environmental samples cannot be determined. B ioVir Laboratories has analyzed your sample(s) in accordance with the method described with each analyte above, however, due to inherent limitations of these methods organisms may avoid detection. For additional information regarding the limitations of the method(s) referred to above please call us at 1-800-GIARDIA.
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4/16/2013
Date:

Signature

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REPORT NO.: 130231
PAGE NO.: 1 of 1
CLIENT: Cit of Wichita Falls WWTP
ADDRESS 1005 River Road
Wichita Falls, TX 76305
CLIENT NO WIC004 **CLIENT PO:** P1302568

ASSAY RESULTS:

Test: EPA 1615 **Method: EPA 1615**

BioVir #	Sample ID	Site	Analyte	Result	Units
130231-002B	RR RAW 4-4-13B Culture Matrix Spike	Raw Wastewater River Road WWTP	Total Culturable Virus	5300.4	MPN/L

Collector: Bill Thornton CollectDate 3/5/2013 CollectTime: 10:00:00 AM
ReceiveDate 3/6/2013 10:05:00 AM Matrix: Waste Water, untreated Temp 0.6
Volume: 3.8 L Analysis Start Date: 3/6/13 Analysis Start Time: 1232
Analyst: ValentinaL Analysis End: 4/9/2013

Comment Culture Matrix Spike

SAMPLE EVALUATION PERFORMANCE CRITERIA: The precise rates of recovery of organisms from environmental samples cannot be determined. B ioVir Laboratories has analyzed your sample(s) in accordance with the method described with each analyte above, however, due to inherent limitations of these methods organisms may avoid detection. For additional information regarding the limitations of the method(s) referred to above please call us at 1-800-GIARDIA.
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4/16/2013
Date:

Signature

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REPORT NO.: 130231
PAGE NO.: 1 of 2
CLIENT: Cit of Wichita Falls WWTP
ADDRESS 1005 River Road
Wichita Falls, TX 76305
CLIENT NO WIC004 **CLIENT PO:** P1302568

ASSAY RESULTS:

Test: EPA 1615 **Method: EPA 1615**

BioVir #	Sample ID	Site	Analyte	Result	Units
130231-002D	RR RAW 4-4-13D PCR Matrix Spike	Raw Wastewater River Road WWTP	Enterovirus	1.7e6	copies/L

Collector: Bill Thornton CollectDate 3/5/2013 CollectTime: 10:00:00 AM
ReceiveDate 3/6/2013 10:05:00 AM Matrix: Waste Water, untreated Temp 0.6
Volume: 3.8 L Analysis Start Date: 3/7/13 Analysis Start Time: 1300
Analyst: RNewton Analysis End: 3/26/2013

Comment PCR Matrix Spike

BioVir #	Sample ID	Site	Analyte	Result	Units
130231-002D	RR RAW 4-4-13D PCR Matrix Spike	Raw Wastewater River Road WWTP	Norovirus GI	1.4e7	copies/L

Collector: Bill Thornton CollectDate 3/5/2013 CollectTime: 10:00:00 AM
ReceiveDate 3/6/2013 10:05:00 AM Matrix: Waste Water, untreated Temp 0.6
Volume: 3.8 L Analysis Start Date: 3/7/13 Analysis Start Time: 1300
Analyst: RNewton Analysis End: 3/26/2013

Comment PCR Matrix Spike

BioVir #	Sample ID	Site	Analyte	Result	Units
130231-002D	RR RAW 4-4-13D PCR Matrix Spike	Raw Wastewater River Road WWTP	Norovirus GII	1.2e9	copies/L

Collector: Bill Thornton CollectDate 3/5/2013 CollectTime: 10:00:00 AM
ReceiveDate 3/6/2013 10:05:00 AM Matrix: Waste Water, untreated Temp 0.6
Volume: 3.8 L Analysis Start Date: 3/7/13 Analysis Start Time: 1300
Analyst: RNewton Analysis End: 3/26/2013

Comment PCR Matrix Spike

REPORT NO.:	130231
PAGE NO.:	2 of 2
CLIENT:	Cit of Wichita Falls WWTP
ADDRESS	1005 River Road Wichita Falls, TX 76305
CLIENT NO	WIC004 **CLIENT PO:** P1302568

ASSAY RESULTS:

SAMPLE EVALUATION PERFORMANCE CRITERIA: The precise rates of recovery of organisms from environmental samples cannot be determined. B ioVir Laboratories has analyzed your sample(s) in accordance with the method described with each analyte above, however, due to inherent limitations of these methods organisms may avoid detection. For additional information regarding the limitations of the method(s) referred to above please call us at 1-800-GIARDIA.

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4/16/2013

Date:

Signature

Quality Checked DCelio

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NELAC #05234CA
EPA ID# 01401, CA-ELAP #179

685 Stone Road, Unit 6 • Benicia, CA 94510 • (707) 747-5906 • 1-800-GIARDIA • FAX (707) 747-1751 • WEB: www.biovir.com

REPORT NO.: 130231
PAGE NO.: 1 of 2
CLIENT: Cit of Wichita Falls WWTP
ADDRESS 1005 River Road
Wichita Falls, TX 76305
CLIENT NO WIC004 **CLIENT PO:** P1302568

ASSAY RESULTS:

Test: EPA 1615 **Method: EPA 1615**

BioVir #	Sample ID	Site	Analyte	Result	Units
130231-002C	RR RAW 4-4-13C PCR	Raw Wastewater River Road WWTP	Enterovirus	Non-detect	

Collector: Bill Thornton CollectDate 3/5/2013 CollectTime: 10:00:00 AM
ReceiveDate 3/6/2013 10:05:00 AM Matrix: Waste Water, untreated Temp 0.6
Volume: 3.8 L Analysis Start Date: 3/7/13 Analysis Start Time: 1300
Analyst: RNewton Analysis End: 3/26/2013

Comment

BioVir #	Sample ID	Site	Analyte	Result	Units
130231-002C	RR RAW 4-4-13C PCR	Raw Wastewater River Road WWTP	Norovirus GI	3.1e6 copies/L	

Collector: Bill Thornton CollectDate 3/5/2013 CollectTime: 10:00:00 AM
ReceiveDate 3/6/2013 10:05:00 AM Matrix: Waste Water, untreated Temp 0.6
Volume: 3.8 L Analysis Start Date: 3/7/13 Analysis Start Time: 1300
Analyst: RNewton Analysis End: 3/26/2013

Comment

BioVir #	Sample ID	Site	Analyte	Result	Units
130231-002C	RR RAW 4-4-13C PCR	Raw Wastewater River Road WWTP	Norovirus GII	2.0e9 copies/L	

Collector: Bill Thornton CollectDate 3/5/2013 CollectTime: 10:00:00 AM
ReceiveDate 3/6/2013 10:05:00 AM Matrix: Waste Water, untreated Temp 0.6
Volume: 3.8 L Analysis Start Date: 3/7/13 Analysis Start Time: 1300
Analyst: RNewton Analysis End: 3/26/2013

Comment

REPORT NO.:	130231
PAGE NO.:	2 of 2
CLIENT:	Cit of Wichita Falls WWTP
ADDRESS	1005 River Road Wichita Falls, TX 76305
CLIENT NO	WIC004 **CLIENT PO:** P1302568

ASSAY RESULTS:

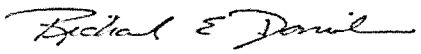
SAMPLE EVALUATION PERFORMANCE CRITERIA: The precise rates of recovery of organisms from environmental samples cannot be determined. B ioVir Laboratories has analyzed your sample(s) in accordance with the method described with each analyte above, however, due to inherent limitations of these methods organisms may avoid detection. For additional information regarding the limitations of the method(s) referred to above please call us at 1-800-GIARDIA.

COMPANY IS NOT AN INSURER: BioVir Laboratories is not an insurer or guarantor of the quality and/or purity of water, wastewater, biosolid or other material from which the sample was taken. BioVir offers no express or implied warranties whatsoever concerning the quality or purity of any water, wastewater, biosolid or other material which is ultimately consumed, distributed, applied or disposed.

MAINTENANCE OF RECORDS: BioVir Laboratories, Inc. shall maintain records pertaining to the historical reconstruction of client's data for a minimum of five years from the date of issuance of the final report. Records m ay be destroyed after that date unless a written client's request for records transfer is received by BioVir which requests otherwise. Records transfer or storage charges may apply after the 5 year period. THIS REPORT SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF BIOVIR LABORATORIES, INC.

4/16/2013

Date:



Signature

Quality Checked DCelio

BioVir Laboratories, Inc

NELAC #05234CA

EPA ID# 01401, CA-ELAP #179

685 Stone Road, Unit 6 • Benicia, CA 94510 • (707) 747-5906 • 1-800-GIARDIA • FAX (707) 747-1751 • WEB: www.biovir.com

LAB Sample ID: 130127-001

Client / Address: Cit of Wichita Falls WWTP, 1005 River Road, Wichita Falls TX 76305

Client No: WIC004 **Purchase Order No:** P1301977

PWS ID: **Facility ID:** RR WWTP Raw Water

Client Contact: Bill Thornton, **Client Phone:** 940-766-2841

SAMPLE INFORMATION:

Name of Sampler: Bill Thornton **Customer Sample No.:** Head Works

Matrix: Waste Water, untreated **Date/Time Received:** 1/30/2013 9:52:00 AM

Sample Point ID: Head Works **Check-in Temp. (0-20C)** 2.1

Sample Collection Date: 1/29/2013 **Container Type:** 1 Gallon Cubitainer

Sample Time: 9:00:00 AM

Comments: Calculated Results: <16 Oocysts / Liter (Crypto), 32 Cysts / Liter (Giardia)

ASSAY RESULTS: 1693 Evaluation Cryptosporidium & Giardia March 200

Sample Preparation

Sample Vol Examined	0.0625 L	Number of Filters	0
No. of Slides Examined	1	Resuspended Conc. Vol.	20 mL
Pellet Volume	4.0 mL	Analyst	kw

Sample Results

Analyte	Crypto
No. of Crypto	0
Analyte 2	Giardia
No. of Giardia	2

Sample Q. C

OPR Crypto Results	70 %
OPR Giardia Results	70 %
Method Blank Results	0

SAMPLE EVALUATION PERFORMANCE CRITERIA: The precise rates of recovery of organisms from environmental samples cannot be determined. B ioVir Laboratories has analyzed your sample(s) in accordance with the method described with each analyte above, however, due to inherent limitations of these methods organisms may avoid detection. For additional information regarding the limitations of the method(s) referred to above please call us at 1-800-GIARDIA.

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4/16/2013

Report Date

Richard E Daniel

Signature

Quality Checked DCelio

BioVir Laboratories, Inc

NELAC #05234CA
EPA ID# 01401, CA-ELAP #179

685 Stone Road, Unit 6 • Benicia, CA 94510 • (707) 747-5906 • 1-800-GIARDIA • FAX (707) 747-1751 • WEB: www.biovir.com

REPORT NO.: 130127
PAGE NO.: 1 of 1
CLIENT: Cit of Wichita Falls WWTP
ADDRESS 1005 River Road
Wichita Falls, TX 76305
CLIENT NO WIC004 **CLIENT PO:** P1301977

ASSAY RESULTS:

Test: EPA 1615 **Method: EPA 1615**

BioVir #	Sample ID	Site	Analyte	Result	Units
130127-002A	A Virus	Raw Wastewater River Road WWTP	Total Culturable Virus	512.4	MPN/L

Collector: Bill Thornton CollectDate 1/29/2013 CollectTime: 9:00:00 AM
ReceiveDate 1/30/2013 9:52:00 AM Matrix: Waste Water, untreated Temp 2.1
Volume: 4 L Analysis Start Date: 1/30/13 Analysis Start Time: 1225
Analyst: ValentinaL Analysis End: 4/8/2013

Comment

SAMPLE EVALUATION PERFORMANCE CRITERIA: The precise rates of recovery of organisms from environmental samples cannot be determined. B ioVir Laboratories has analyzed your sample(s) in accordance with the method described with each analyte above, however, due to inherent limitations of these methods organisms may avoid detection. For additional information regarding the limitations of the method(s) referred to above please call us at 1-800-GIARDIA.
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4/16/2013
Date:

Signature

Quality Checked DCelio

BioVir Laboratories, Inc

NELAC #05234CA
EPA ID# 01401, CA-ELAP #179

685 Stone Road, Unit 6 • Benicia, CA 94510 • (707) 747-5906 • 1-800-GIARDIA • FAX (707) 747-1751 • WEB: www.biovir.com

REPORT NO.: 130127
PAGE NO.: 1 of 2
CLIENT: Cit of Wichita Falls WWTP
ADDRESS 1005 River Road
Wichita Falls, TX 76305
CLIENT NO WIC004 **CLIENT PO:** P1301977

ASSAY RESULTS:

Test: EPA 1615 **Method: EPA 1615**

BioVir #	Sample ID	Site	Analyte	Result	Units
130127-002B	B PCR	Raw Wastewater River Road WWTP	Enterovirus	Non-detect/0.3L	

Collector: Bill Thornton CollectDate 1/29/2013 CollectTime: 9:00:00 AM
ReceiveDate 1/30/2013 9:52:00 AM Matrix: Waste Water, untreated Temp 2.1
Volume: 4 L Analysis Start Date: 2/5/13 Analysis Start Time: 1130
Analyst: RNewton Analysis End: 2/21/2013

Comment

BioVir #	Sample ID	Site	Analyte	Result	Units
130127-002B	B PCR	Raw Wastewater River Road WWTP	Norovirus GI	Non-detect/0.3L	

Collector: Bill Thornton CollectDate 1/29/2013 CollectTime: 9:00:00 AM
ReceiveDate 1/30/2013 9:52:00 AM Matrix: Waste Water, untreated Temp 2.1
Volume: 4 L Analysis Start Date: 2/5/13 Analysis Start Time: 1130
Analyst: RNewton Analysis End: 2/21/2013

Comment

BioVir #	Sample ID	Site	Analyte	Result	Units
130127-002B	B PCR	Raw Wastewater River Road WWTP	Norovirus GII	3.3e8copies/0.3L	

Collector: Bill Thornton CollectDate 1/29/2013 CollectTime: 9:00:00 AM
ReceiveDate 1/30/2013 9:52:00 AM Matrix: Waste Water, untreated Temp 2.1
Volume: 4 L Analysis Start Date: 2/5/13 Analysis Start Time: 1130
Analyst: RNewton Analysis End: 2/21/2013

Comment

REPORT NO.:	130127
PAGE NO.:	2 of 2
CLIENT:	Cit of Wichita Falls WWTP
ADDRESS	1005 River Road Wichita Falls, TX 76305
CLIENT NO	WIC004 **CLIENT PO:** P1301977

ASSAY RESULTS:

SAMPLE EVALUATION PERFORMANCE CRITERIA: The precise rates of recovery of organisms from environmental samples cannot be determined. B ioVir Laboratories has analyzed your sample(s) in accordance with the method described with each analyte above, however, due to inherent limitations of these methods organisms may avoid detection. For additional information regarding the limitations of the method(s) referred to above please call us at 1-800-GIARDIA.

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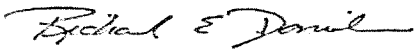
4/16/2013

Date:



Signature

Quality Checked DCelio

eurofins

Eaton Analytical
formerly Alpha Laboratories

Acknowledgement of Samples Received

Addr: **City of Wichita Falls**
4801 Big Ed Neal Dr
Wichita Falls, TX 76310

Client ID: WICHITA-TX
Folder #: 422385
Project: WASTEWATER_REUSE
Sample Group: REUSE STUDY

Attn: Mark Southard
Phone: 940-691-1153

Project Manager: Cam P Pham
Phone: (909) 254-0381

The following samples were received from you on **January 17, 2013**. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact your service representative. Thank you for using Eurofins Eaton Analytical.

Sample #	Sample ID	Sample Date
201301180174	WASTEWATER EFFLUENT	01/16/2013 1500

Chlorpyrifos	Demeton-O	Demeton-S
Diazinon	@508EDD plus Oxyfluorphen	@515_4-REG
@525_ADDITIONAL	@525PLUS C	@532-LCMS
@551_EDB-DBCP	@8270SCR C	@TBTEDD Subbed
@VOAPP C	2-Chloroethylvinylether by 8260	Ammonia Nitrogen
Ammonium ion (as N) at 25C	Asbestos by TEM - >10 microns	Chromium III (Calculated)
Chromium Total ICAP/MS	Cyanide by manual distillation	Hexavalent chromium(Dissolved)
Nickel Total ICAP/MS	Orthophosphate as P (OPO4)	PH (H3=past HT not compliant)
Phenolic Compounds	Silica	

Test Description

@508EDD plus Oxyfluorphen -- @508EDD plus Oxyfluorphen

@515_4-REG -- Chlorophenoxy Herbicides

@525_ADDITIONAL -- EPA 525 N/P Pesticides

@525PLUS C -- Semivolatiles by GCMS

@532-LCMS -- Sulfonyl Urea Compounds

@551_EDB-DBCP -- EDB/DBCP/HAN by EPA 551.1

@8270SCR C -- 8270 Semivolatile, Screen, TIC

@TBTEDD Subbed -- Tributyltin

@VOAPP C -- Volatile Organics by EPA 624

eurofins | Eaton Analytical
formerly MWH Laboratories

750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
Tel: (626) 386-1100
Fax: (626) 386-1101
1 800 566 LABS (1 800 566 5227)

Laboratory Report

for

City of Wichita Falls
4801 Big Ed Neal Dr
Wichita Falls, TX 76310
Attention: Mark Southard
Fax: 940-691-4121

Date of Issue
02/22/2013

EUROFINS EATON
ANALYTICAL

CPP: Cam P Pham

Project Manager

NELAP ACCREDITED TNI LABORATORY
01114CA

Report: 422385
Project: WASTEWATER_REUSE
Group: REUSE STUDY

Laboratory certifies that the test results meet all **TNI NELAP** requirements unless noted in the Comments section or the Case Narrative. Following the cover page are Hits Reports, Comments, QC Summary, QC Report and Regulatory Forms. This report shall not be reproduced except in full, without the written approval of the laboratory.

STATE CERTIFICATION LIST

State	Certification Number	State	Certification Number
Alabama	41060	**Mississippi**	Certified
Alaska	CA00006	**Montana**	Cert 0035
Arizona	AZ0778	**Nevada**	CA00006-2012-1
Arkansas	Certified	**New Hampshire**	2959-11
California – NELAP	01114CA	**New Jersey**	CA 008
California – ELAP	1422	**New Mexico**	Certified
Colorado	Certified	**New York**	11320
Connecticut	PH-0107	**North Carolina**	06701
Delaware	CA 006	**North Dakota**	R-009
Florida	E871024	**Oregon**	CA 200003-010
Georgia	947	**Pennsylvania**	68-565
Guam	11-004r	**Rhode Island**	01114CA
Hawaii	Certified	**South Carolina**	87016001
Idaho	Certified	**South Dakota**	Certified
Illinois	200033	**Tennessee**	TN02839
Indiana	C-CA-01	**Texas**	T104704230-11-2
Kansas	E-10268	**Utah**	Mont-1
Kentucky	90107	**Vermont**	VT0114
Louisiana	LA110022	**Virginia**	00210
Maine	CA0006	**Washington**	C383
Maryland	224	**West Virginia**	9943 C
Commonwealth of Northern Marianas Is.	MP0004	**Wisconsin**	998316660
Massachusetts	M-CA006	**Wyoming**	8TMS-L
Michigan	9906	**EPA Region 5**	Certified

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formerly STL Laboratories

Acknowledgement of Samples Received

Addr: **City of Wichita Falls**
4801 Big Ed Neal Dr
Wichita Falls, TX 76310

Client ID: WICHITA-TX
Folder #: 422385
Project: WASTEWATER_REUSE
Sample Group: REUSE STUDY

Attn: Mark Southard
Phone: 940-691-1153

Project Manager: Cam P Pham
Phone: (909) 254-0381

The following samples were received from you on **January 17, 2013**. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact your service representative. Thank you for using Eurofins Eaton Analytical.

Sample #	Sample ID	Sample Date
201301180174	WASTEWATER EFFLUENT	01/16/2013 1500

Chlorpyrifos	Demeton-O	Demeton-S
Diazinon	@508EDD plus Oxyfluorphen	@515_4-REG
@525_ADDITIONAL	@525PLUS C	@532-LCMS
@551_EDB-DBCP	@8270SCR C	@TBTEDD Subbed
@VOAPP C	2-Chloroethylvinylether by 8260	Ammonia Nitrogen
Ammonium ion (as N) at 25C	Asbestos by TEM - >10 microns	Chromium III (Calculated)
Chromium Total ICAP/MS	Cyanide by manual distillation	Hexavalent chromium(Dissolved)
Nickel Total ICAP/MS	Orthophosphate as P (OPO4)	PH (H3=past HT not compliant)
Phenolic Compounds	Silica	

Test Description

@508EDD plus Oxyfluorphen -- @508EDD plus Oxyfluorphen

@515_4-REG -- Chlorophenoxy Herbicides

@525_ADDITIONAL -- EPA 525 N/P Pesticides

@525PLUS C -- Semivolatiles by GCMS

@532-LCMS -- Sulfonyl Urea Compounds

@551_EDB-DBCP -- EDB/DBCP/HAN by EPA 551.1

@8270SCR C -- 8270 Semivolatile, Screen, TIC

@TBTEDD Subbed -- Tributyltin

@VOAPP C -- Volatile Organics by EPA 624

CHAIN OF CUSTODY RECORD

422985

eurofins | Eaton Analytical

750 Royal Oaks Drive, Suite 100
Monrovia, CA 91016-3629
Phone: 626 386 1100
Fax: 626 386 1101
800 566 LABS (800 566 5227)
Website: www.EatonAnalytical.com

EUROFINS EATON ANALYTICAL USE ONLY:

LOGIN COMMENTS: see PO

SAMPLES CHECKED AGAINST COC BY:

SAMPLES LOGGED IN BY: JS

SAMPLES REC'D DAY OF COLLECTION? [ ] (check for yes)

SAMPLE TEMP RECEIVED AT:

[ ] Colton / No. California / Arizona ____ °C (Compliance: 4 ± 2 °C)

[✓] Monrovia 5.9 °C (Compliance: 4 ± 2 °C)

CONDITION OF BLUE ICE: Frozen ✓ Partially Frozen ____ Thawed ____ Wet Ice ____ No Ice ____

METHOD OF SHIPMENT: Pick-Up / Walk-In / FedEx / UPS / DHL / Area Fast / Top Line / Other: ____

TO BE COMPLETED BY SAMPLER:

COMPANY/AGENCY NAME: City of Wichita Falls TX

PROJECT CODE: Wastewater Reuse

EEA CLIENT CODE:

COC ID:

SAMPLE GROUP: Reuse Study

COMPLIANCE SAMPLES [ ] (check for yes) - Requires state forms [ ]

NON-COMPLIANCE SAMPLES [ ] (check for yes)

REGULATION INVOLVED:

Type of samples (circle one): ROUTINE SPECIAL CONFIRMATION (eg. SDWA, Phase V, NPDES, FDA,...)

SEE ATTACHED BOTTLE ORDER FOR ANALYSES [X] (check for yes), OH

list ANALYSES REQUIRED (enter number of bottles sent for each test for each sample)

TAT requested: rush by adv notice only STD ✓ 1 wk ___ 3 day ___ 2 day ___ 1 day ___

SAMPLE DATE	SAMPLE TIME	SAMPLE ID	CLIENT LAB ID	MATRIX *	FIELD DATA	FIELD DATA	SAMPLER COMMENTS
1/16/13	3:45	Wastewater Effluent		WW			

J213 688 386 2

* MATRIX TYPES: RSW = Raw Surface Water; RGW = Raw Ground Water; CFW = Chlor(am)inated Finished Water; FW = Other Finished Water; SEAW = Sea Water; WW = Waste Water; BW = Bottled Water; SW = Storm Water; SO = Soil; SL = Sludge; O = Other - Please Identify

	SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
SAMPLED BY:	Blair Ramon	Blair Ramon	City of Wichita Falls	01/16/13	3:45
RELINQUISHED BY:					
RECEIVED BY:				1-17-13	1140
RELINQUISHED BY:					
RECEIVED BY:					

PAGE 1 OF 1

eurofins

Kit Order for City of W[illegible] Falls

Carn P Pham is your Eurofins Eaton Analytical Project Manager

Eurofins Eaton Analytical
750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
(626) 386-1100 FAX (626) 386-1101

Note: Sampler Please return this paper with your samples

Kit #: 62022
Created By: CPP
Order Date: 01/16/2013
Ship By: Bottle Orders
STG:

Client ID: WICHITA-TX
Project Code: WASTEWATER_REUSE Bottle Orders
Group Name: REUSE STUDY
PO#/JOB#:

Ship Sample Kits to
City of Wichita Falls
4801 Big Ed Neal Dr
Wichita Falls, TX 76310

Attn: Mark Southard
Phone: 940-691-1153
Fax: 940-691-4121

Send Report to
City of Wichita Falls
4801 Big Ed Neal Dr
Wichita Falls, TX 76310

Attn: Mark Southard
Phone: 940-691-1153
Fax: 940-691-4121

Billing Address
City of Wichita Falls
4801 Big Ed Neal Dr
Wichita Falls, TX 76310

Attn: Mark Southard
Phone: 940-691-1153
Fax: 940-691-4121

# of Sample	Tests	Bottles - Qty for each sample, type & preservative if an	UN DOT #
3	@508EDD plus Oxyfluorphen	2 1L amber glass no preservative	
3	@515_4-REG	2 125ml amber glass 7mg SULFITE xls	
1	@525_ADDITIONAL	2 1L amber glass 2ml of 6N HCl	UN1789
2	@525_ADDITIONAL, @525PLUS	2 1L amber glass 2ml of 6N HCl	UN1789
1	@525PLUS C	2 1L amber glass 45mg Sulfite xls+1 vial 2 ml 6N HCl	UN1789
3	@532-LCMS	2 40ml amber glass vial TRIZMA + CuSO4	
3	@551_EDB-DBCP	3 60ml amber glass EDB1g(1%NaP/99%KP)+0.6%NH4CL	
2	@8270SCR	2 1L amber glass BNA_NO_PRESERVATIVE	
1	@8270SCR C	2 1L amber glass BNA_1ML_THIO	
3	@TBTEDD Subbed	2 1L amber glass 1.5ml HCL (6N)	UN1789
1	@VOAPP C	4 40ml amber glass vial 1 drop 8% thio+2ml BOT 1:1 HCL	UN1789
1	@VOAPP C	4 40ml amber glass vial 25mg Ascorbic+drop 2ml 1:1 HCL	UN1789
2	@VOAPP, @VOAPP	4 40ml amber glass vial 4drops 6N HCL (36%)	UN1789
3	2-Chloroethylvinylether by 8260	3 40 ml VOA vial 2CEVE5_NO_PRESERVATIVE	
3	Ammonia Nitrogen	1 250ml poly 0.5ml H2SO4 (50%)	UN1830
3	Asbestos by TEM - >10 microns	1 1L poly sonicated no preservative	
3	Chlorpyrifos, Demeton-O, Demeton-S, Diazinon	2 1L amber glass 8141WRD_NO_PRESERVATIVE	
3	Chromium Total ICAP/MS, Nickel Total ICAP/MS, Silica, Silica	1 500ml acid poly 2ml HNO3 (18%)	UN2031
3	Cyanide by manual distillation	1 250 ml poly 2 ml NaOH (30%)+6 scoops AA	
3	Hexavalent Chromium (Dissolved)	1 125ml poly 1ml NH4SO4/NH4OH buffer	UN1824
3	Orthophosphate as P	1 125ml poly OPO4_no preservative	
3	Phenolic Compounds	1 250ml amber glass 1ml H2SO4	UN1830

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formerly MWH Laboratories

750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
Tel: (626) 386-1100
Fax: (626) 386-1101
1 800 566 LABS (1 800 566 5227)

Laboratory Comments
Report: 422385

City of Wichita Falls
Mark Southard
4801 Big Ed Neal Dr
Wichita Falls, TX 76310

Folder Comments

Analytical results for Tributyl Tin are submitted by EBMUD, Oakland, CA CA ELAP # 1060
Analytical results for 508 are submitted by APPL Labs, Clovis, CA
Analytical results for 8141 are submitted Eurofins Lancaster Laboratories, Lancaster PA

201301180174 @8270 TICs:
unknown Ret Time=11.35 min; Est Conc=16.5 ng/mL
unknown Ret Time=13.59 min; Est Conc=7.7 ng/mL
n-Hexadecanoic acid Ret Time=14.38 min; Est Conc=5.5 ng/mL
Sulfur Ret Time=15.37 min; Est Conc=77.2 ng/mL

Flags Legend:

BA - Target analyte detected in method blank at or above the laboratory minimum reporting limits (MRL), but analyte not present in the sample.

L4 - The associated blank spike recovery was below method acceptance limits.

LE - MRL Check recovery was above laboratory acceptance limits.

LF - MRL Check recovery was below laboratory acceptance limits.

LK - The associated blank spike recovery was above method acceptance limits. This target analyte was not detected in the sample.

MC - Matrix spike recovery was high; the associated blank spike recovery was acceptable. MS/MSD RPD met acceptance criteria.

R7 - LFB/LFBD RPD exceeded the laboratory acceptance limit. Recovery met acceptance criteria.

The Comments Report may be blank if there are no comments for this report.

eurofins | Eaton Analytical
formerly MWH Laboratories

750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
Tel: (626) 386-1100
Fax: (626) 386-1101
1 800 566 LABS (1 800 566 5227)

Laboratory Hits
Report: 422385

City of Wichita Falls
Mark Southard
4801 Big Ed Neal Dr
Wichita Falls, TX 76310

Samples Received on:
01/17/2013

Analyzed	Analyte	Sample ID	Result	Federal MCL	Units	MRL
	201301180174	**WASTEWATER EFFLUENT**				
01/24/2013 13:36	Ammonia Nitrogen		1.1		mg/L	0.05
01/21/2013 09:03	Ammonium ion (as N) at 25C		1.1		mg/L	0.01
01/28/2013 14:51	Bromodichloromethane		6.4		ug/L	0.5
01/28/2013 14:51	Bromoform		5.4		ug/L	0.5
01/28/2013 14:51	Chlorodibromomethane		8.4		ug/L	0.5
01/28/2013 14:51	Chloroform (Trichloromethane)		2.5		ug/L	0.5
01/23/2013 16:02	Nickel Total ICAP/MS		5.5		ug/L	5
01/17/2013 15:46	Orthophosphate as P		5.0		mg/L	0.05
01/19/2013 19:39	PH (H3=past HT not compliant)		7.2		Units	0.1
/23/2013 18:19	Silica		7.7		mg/L	0.5
01/22/2013 19:12	Simazine		0.48	4	ug/L	0.05

SUMMARY OF POSITIVE DATA ONLY

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Laboratory Data
Report: 422385

City of Wichita Falls
Mark Southard
4801 Big Ed Neal Dr
Wichita Falls, TX 76310

Samples Received on:
01/17/2013

Prepared	Analyzed	QC Ref #	Method	Analyte	Result	Units	MRL	Dilution
WASTEWATER EFFLUENT (201301180174)						**Sampled on 01/16/2013 1500**		
		SM (21) 6710B - Tributyltin						
1/29/2013	01/30/2013	23:07	(SM (21) 6710B)	Tributyltin	ND	ug/L	0.005	1
		EPA 508 - @508EDD plus Oxyfluorphen						
1/23/2013	02/01/2013	00:00	(EPA 508)	2,4-DDD	ND	ug/L	0.05	1
1/23/2013	02/01/2013	00:00	(EPA 508)	2,4-DDE	ND	ug/L	0.05	1
1/23/2013	02/01/2013	00:00	(EPA 508)	2,4-DDT	ND	ug/L	0.02	1
1/23/2013	02/01/2013	00:00	(EPA 508)	4,4-DDE	ND	ug/L	0.01	1
1/23/2013	02/01/2013	00:00	(EPA 508)	4,4-DDT	ND	ug/L	0.02	1
23/2013	02/01/2013	00:00	(EPA 508)	4,4-TDE-DDD	ND	ug/L	0.02	1
1/23/2013	02/01/2013	00:00	(EPA 508)	a-BHC	ND	ug/L	0.05	1
1/23/2013	02/01/2013	00:00	(EPA 508)	Alachlor	ND	ug/L	0.1	1
1/23/2013	02/01/2013	00:00	(EPA 508)	Aldrin	ND	ug/L	0.05	1
1/23/2013	02/01/2013	00:00	(EPA 508)	b-BHC	ND	ug/L	0.05	1
1/23/2013	02/01/2013	00:00	(EPA 508)	Benefin	ND	ug/L	0.1	1
1/23/2013	02/01/2013	00:00	(EPA 508)	Captan	ND	ug/L	0.1	1
1/23/2013	02/01/2013	00:00	(EPA 508)	Carbophenothion	ND	ug/L	0.05	1
1/23/2013	02/01/2013	00:00	(EPA 508)	Chlordane	ND	ug/L	0.05	1
1/23/2013	02/01/2013	00:00	(EPA 508)	Chlorothalonil	ND	ug/L	0.05	1
1/23/2013	02/01/2013	00:00	(EPA 508)	d-BHC	ND	ug/L	0.05	1
1/23/2013	02/01/2013	00:00	(EPA 508)	Dicofol	ND	ug/L	0.1	1
1/23/2013	02/01/2013	00:00	(EPA 508)	Dieldrin	ND	ug/L	0.02	1
1/23/2013	02/01/2013	00:00	(EPA 508)	Endosulfan I	ND	ug/L	0.02	1
1/23/2013	02/01/2013	00:00	(EPA 508)	Endosulfan II	ND	ug/L	0.01	1
1/23/2013	02/01/2013	00:00	(EPA 508)	Endosulfan Sulfate	ND	ug/L	0.05	1
1/23/2013	02/01/2013	00:00	(EPA 508)	Endrin	ND	ug/L	0.05	1
1/23/2013	02/01/2013	00:00	(EPA 508)	Endrin Aldehyde	ND	ug/L	0.05	1
1/23/2013	02/01/2013	00:00	(EPA 508)	Endrin Ketone	ND	ug/L	0.05	1
1/23/2013	02/01/2013	00:00	(EPA 508)	g-BHC	ND	ug/L	0.05	1
1/23/2013	02/01/2013	00:00	(EPA 508)	Heptachlor	ND	ug/L	0.01	1
1/23/2013	02/01/2013	00:00	(EPA 508)	Heptachlor Epoxide	ND	ug/L	0.01	1
1/23/2013	02/01/2013	00:00	(EPA 508)	hexachlorobenzene	ND	ug/L	0.05	1
1/23/2013	02/01/2013	00:00	(EPA 508)	Methoxychlor	ND	ug/L	0.05	1
/23/2013	02/01/2013	00:00	(EPA 508)	Nitrofen	ND	ug/L	0.05	1
./23/2013	02/01/2013	00:00	(EPA 508)	Oxyfluorphen	ND	ug/L		1
1/23/2013	02/01/2013	00:00	(EPA 508)	PCB-1016	ND	ug/L	0.5	1

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1/23/2013	02/01/2013 00:00		(EPA 508)	PCB-1221	ND	ug/L	0.5	1
1/23/2013	02/01/2013 00:00		(EPA 508)	PCB-1232	ND	ug/L	0.5	1
1/23/2013	02/01/2013 00:00		(EPA 508)	PCB-1242	ND	ug/L	0.5	1
1/23/2013	02/01/2013 00:00		(EPA 508)	PCB-1248	ND	ug/L	0.5	1
1/23/2013	02/01/2013 00:00		(EPA 508)	PCB-1254	ND	ug/L	0.5	1
1/23/2013	02/01/2013 00:00		(EPA 508)	PCB-1260	ND	ug/L	0.5	1
1/23/2013	02/01/2013 00:00		(EPA 508)	PCNB	ND	ug/L	0.05	1
1/23/2013	02/01/2013 00:00		(EPA 508)	Propachlor	ND	ug/L	0.1	1
1/23/2013	02/01/2013 00:00		(EPA 508)	Toxaphene	ND	ug/L	0.5	1
		EPA 8141 - Demeton-O by 8141						
	01/24/2013 17:29		(EPA 8141)	Demeton-o	ND (U)	ug/L	1.9	1
		EPA 8141 - Demeton-S by 8141						
	01/24/2013 17:29		(EPA 8141)	Demeton-s	ND (U)	ug/L	2.8	1
		EPA 8141 - Chlorpyrifos by 8141						
	01/24/2013 17:29		(EPA 8141)	Chlorpyrifos	ND (U)	ug/L	2.8	1
		EPA 8141 - Diazinon by 8141						
	01/24/2013 17:29		(EPA 8141)	Diazinon	ND (U)	ug/L	5.7	1
		EPA 200.8 - ICPMS Metals						
1/18/2013	01/23/2013 16:02	689809	(EPA 200.8)	Chromium Total ICAP/MS	ND	ug/L	1	1
1/18/2013	01/23/2013 16:02	689809	(EPA 200.8)	Nickel Total ICAP/MS	5.5	ug/L	5	1
		EPA 200.7 - ICP Metals						
1/18/2013	01/23/2013 18:19	689859	(EPA 200.7)	Silica	7.7	mg/L	0.5	1
		EPA 100.2 - Asbestos by TEM - >10 microns						
1/17/2013	01/22/2013 00:00	689635	(EPA 100.2)	Asbestos by TEM - >10 microns	ND	MFL	1.8	1
		Calculated - Ammonium ion (as N) at 25C						
	01/21/2013 09:03		(Calculated)	Ammonium ion (as N) at 25C	1.1	mg/L	0.01	1
		EPA 200.8 - Chromium III (Calculated)						
	01/23/2013 17:18		(EPA 200.8)	Chromium III (Calculated)	ND	ug/L	1	1
		EPA 515.4 - Chlorophenoxy Herbicides						
1/18/2013	01/19/2013 02:28	689256	(EPA 515.4)	2,4,5-TP (Silvex)	ND	ug/L	0.2	1
1/18/2013	01/19/2013 02:28	689256	(EPA 515.4)	2,4-D	ND	ug/L	0.1	1
1/18/2013	01/19/2013 02:28	689256	(EPA 515.4)	Bentazon	ND	ug/L	0.5	1
1/18/2013	01/19/2013 02:28	689256	(EPA 515.4)	Dalapon	ND	ug/L	1	1
1/18/2013	01/19/2013 02:28	689256	(EPA 515.4)	Dinoseb	ND	ug/L	0.2	1
1/18/2013	01/19/2013 02:28	689256	(EPA 515.4)	Pentachlorophenol	ND	ug/L	0.04	1
1/18/2013	01/19/2013 02:28	689256	(EPA 515.4)	Picloram	ND	ug/L	0.1	1
		EPA 551.1 - EDB/DBCP/HAN by EPA 551.1						

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1/22/2013	01/23/2013 13:32	689578	(EPA 551.1)	Dibromochloropropane (DBCP)	ND	ug/L	0.01	1
1/22/2013	01/23/2013 13:32	689578	(EPA 551.1)	Ethylene Dibromide (EDB)	ND (LK)	ug/L	0.01	1
1/22/2013	01/23/2013 13:32	689578	(EPA 551.1)	1,2-Dibromopropane	102	%		1
		SW 8270C - 8270 Semivolatile, Screen, TIC						
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	1,2,4,5-Tetrachlorobenzene Scr	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	1,2,4-Trichlorobenzene	ND	ug/L	5	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	1,2-Diphenylhydrazine	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	1,3,5-Trinitrobenzene Screen	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	1,3-Dinitrobenzene Screen	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	1,4-Naphthoquinone Screen	ND	ug/L	10	1
'21/2013	02/19/2013 14:02	693956	(SW 8270C)	1,4-phenylenediamine Screen	ND	ug/L	50	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	1-Naphthylamine Screen	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	2,3,4,6-tetrachlorophenol Scr	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	2,4,5-Trichlorophenol	ND	ug/L	5	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	2,4,6-Trichlorophenol	ND	ug/L	5	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	2,4-Dichlorophenol	ND	ug/L	5	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	2,4-Dimethylphenol	ND	ug/L	5	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	2,4-Dinitrophenol	ND	ug/L	50	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	2,4-Dinitrotoluene	ND	ug/L	5	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	2,6-Dichlorophenol Screen	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	2,6-Dinitrotoluene	ND	ug/L	5	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	2-Acetylaminofluorene Screen	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	2-Chloronaphthalene	ND	ug/L	5	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	2-Chlorophenol	ND	ug/L	5	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	2-Methylnaphthalene	ND	ug/L	5	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	2-Methylphenol	ND	ug/L	5	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	2-Naphthylamine Screen	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	2-Nitroaniline	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	2-Nitrophenol	ND	ug/L	5	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	2-Picoline Screen	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	3,3-Dichlorobenzidine	ND	ug/L	50	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	3,3-Dimethylbenzidine Screen	ND	ug/L	50	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	3-Methylcholanthrene Screen	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	3-Nitroaniline	ND	ug/L	20	1
/21/2013	02/19/2013 14:02	693956	(SW 8270C)	4,6-Dinitro-o-cresol	ND	ug/L	50	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	4-Aminobiphenyl Screen	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	4-Bromophenylphenylether	ND	ug/L	5	1

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1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	4-Chloroaniline	ND	ug/L	5	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	4-Chlorophenylphenylether	ND	ug/L	5	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	4-Methylphenol	ND	ug/L	5	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	4-Nitroaniline	ND	ug/L	20	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	4-Nitrophenol	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	5-Nitro-o-toluidine Screen	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	7,12-Dimethylbenz(a)anthracene	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	a,a-Dimethylphenethylamine Scr	ND	ug/L	50	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Acenaphthene	ND	ug/L	5	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Acenaphthylene	ND	ug/L	5	1
21/2013	02/19/2013 14:02	693956	(SW 8270C)	Acetophenone Screen	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Aniline	ND	ug/L	5	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Anthracene	ND	ug/L	5	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Aramite Screen	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Benzidine	ND	ug/L	50	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Benzo(a)anthracene	ND	ug/L	5	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Benzo(a)pyrene	ND	ug/L	5	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Benzo(b)fluoranthene	ND	ug/L	5	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Benzo(g,h,i)perylene	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Benzo(k)fluoranthene	ND	ug/L	5	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Benzoic Acid	ND	ug/L	50	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Benzyl Alcohol	ND	ug/L	5	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	bis(2-Chloroethoxy)methane	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	bis(2-Chloroethyl)ether	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	bis(2-Chloroisopropyl)ether	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Butylbenzylphthalate	ND	ug/L	5	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Carbazole Screen	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Chlorobenzilate Screen	ND	ug/L	50	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Chrysene	ND	ug/L	5	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Di(2-Ethylhexyl)phthalate	ND	ug/L	4	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Diallate (cis or trans) Screen	ND	ug/L	50	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Dibenz(a,h)anthracene	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Dibenzofuran	ND	ug/L	5	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Diethylphthalate	ND	ug/L	5	1
/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Dimethoate Screen	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Dimethylaminoazobenzene Screen	ND	ug/L	10	1

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1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Dimethylphthalate	ND	ug/L	5	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Di-n-butylphthalate	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Di-n-octylphthalate	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Dinoseb Screen	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Diphenylamine Screen	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Disulfoton Screen	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Ethyl Methanesulfonate Screen	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Famphur Screen	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Fluoranthene	ND	ug/L	5	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Fluorene	ND	ug/L	5	1
21/2013	02/19/2013 14:02	693956	(SW 8270C)	Hexachlorobenzene	ND	ug/L	5	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Hexachlorobutadiene	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Hexachlorocyclopentadiene	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Hexachloroethane	ND	ug/L	5	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Hexachlorophene Screen	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Hexachloropropene Screen	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Indeno(1,2,3-c,d)pyrene	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Isodrin Screen	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Isophorone	ND	ug/L	5	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Isosafrole Screen	ND	ug/L	50	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Kepone Screen	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	m-Dichlorobenzene (1,3-DCB)	ND	ug/L	5	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Methapyrilene Screen	ND	ug/L	50	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Methyl Methanesulfonate Screen	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Naphthalene	ND	ug/L	5	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Nitrobenzene	ND	ug/L	5	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	N-Nitrosodiethylamine Screen	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	N-Nitrosodimethylamine	ND	ug/L	5	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	N-Nitrosodi-n-butylamine Scr	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	N-Nitrosodi-N-propylamine	ND	ug/L	5	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	N-Nitrosodiphenylamine	ND	ug/L	5	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	n-nitrosomethylethylamine Scr	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	N-Nitrosomorpholine Screen	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	N-Nitrosopiperidine Screen	ND	ug/L	10	1
'21/2013	02/19/2013 14:02	693956	(SW 8270C)	N-Nitrosopyrrolidine Screen	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	o-Dichlorobenzene (1,2-DCB)	ND	ug/L	5	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	ooo-Triethylphosphorothioate S	ND	ug/L	10	1

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1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	o-Toluidine Screen	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Parathion Screen	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	p-Chloro-m-cresol	ND	ug/L	5	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	p-Dichlorobenzene (1,4-DCB)	ND	ug/L	5	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Pentachlorobenzene Screen	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Pentachloroethane Screen	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Pentachloronitrobenzene Screen	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Pentachlorophenol	ND	ug/L	20	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Phenacetin Screen	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Phenanthrene	ND	ug/L	5	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Phenol	ND	ug/L	5	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Phorate Screen	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Pronamide Screen	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Pyrene	ND	ug/L	5	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Pyridine Screen	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Safrole Screen	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Thionazine Screen	ND	ug/L	10	1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	2,4,6-Tribromophenol	81	%		1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	2-Fluorobiphenyl	61	%		1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	2-Fluorophenol	50	%		1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Nitrobenzene-d5	53	%		1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Phenol-d5	57	%		1
1/21/2013	02/19/2013 14:02	693956	(SW 8270C)	Terphenyl-d14	36	%		1
	EPA 525.2 - Semivolatiles by GCMS							
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	2,4-Dinitrotoluene	ND	ug/L	0.1	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	2,6-Dinitrotoluene	ND	ug/L	0.1	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	4,4-DDD	ND	ug/L	0.1	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	4,4-DDE	ND	ug/L	0.1	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	4,4-DDT	ND	ug/L	0.1	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Acenaphthene	ND	ug/L	0.1	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Acenaphthylene	ND	ug/L	0.1	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Acetochlor	ND	ug/L	0.1	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Alachlor	ND	ug/L	0.05	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Aldrin	ND	ug/L	0.05	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Alpha-BHC	ND	ug/L	0.1	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	alpha-Chlordane	ND	ug/L	0.05	1

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1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Anthracene	ND	ug/L	0.02	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Atrazine	ND	ug/L	0.05	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Benz(a)Anthracene	ND	ug/L	0.05	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Benzo(a)pyrene	ND	ug/L	0.02	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Benzo(b)Fluoranthene	ND (R7)	ug/L	0.02	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Benzo(g,h,i)Perylene	ND (R7)	ug/L	0.05	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Benzo(k)Fluoranthene	ND (LK,R7)	ug/L	0.02	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Beta-BHC	ND	ug/L	0.1	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Bromacil	ND	ug/L	0.2	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Butachlor	ND	ug/L	0.05	1
18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Butylbenzylphthalate	ND (LE)	ug/L	0.5	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Caffeine by method 525mod	ND (LE,L4,R7)	ug/L	0.05	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Chlorobenzilate	ND	ug/L	0.1	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Chloroneb	ND	ug/L	0.1	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Chlorothalonil(Draconil,Bravo)	ND	ug/L	0.1	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Chlorpyrifos (Dursban)	ND	ug/L	0.05	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Chrysene	ND	ug/L	0.02	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Delta-BHC	ND	ug/L	0.1	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Di-(2-Ethylhexyl)adipate	ND (LE,LK,R7)	ug/L	0.6	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Di(2-Ethylhexyl)phthalate	ND (LE,LK,BA)	ug/L	0.6	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Diazinon (Qualitative)	ND	ug/L	0.1	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Dibenz(a,h)Anthracene	ND	ug/L	0.05	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Dichlorvos (DDVP)	ND	ug/L	0.05	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Dieldrin	ND	ug/L	0.2	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Diethylphthalate	ND (LE,LK)	ug/L	0.5	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Dimethoate	ND	ug/L	0.1	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Dimethylphthalate	ND	ug/L	0.5	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Di-n-Butylphthalate	ND	ug/L	1	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Di-N-octylphthalate	ND (LE,LK)	ug/L	0.1	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Endosulfan I (Alpha)	ND	ug/L	0.1	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Endosulfan II (Beta)	ND	ug/L	0.1	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Endosulfan Sulfate	ND	ug/L	0.1	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Endrin	ND	ug/L	0.2	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Endrin Aldehyde	ND	ug/L	0.1	1
18/2013	01/22/2013 19:12	690602	(EPA 525.2)	EPTC	ND	ug/L	0.1	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Fluoranthene	ND	ug/L	0.1	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Fluorene	ND	ug/L	0.05	1

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1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	gamma-Chlordane	ND	ug/L	0.05	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Heptachlor	ND	ug/L	0.03	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Heptachlor Epoxide (isomer B)	ND	ug/L	0.05	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Hexachlorobenzene	ND	ug/L	0.05	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Hexachlorocyclopentadiene	ND	ug/L	0.05	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Indeno(1,2,3,c,d)Pyrene	ND	ug/L	0.05	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Isophorone	ND	ug/L	0.5	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Lindane	ND	ug/L	0.04	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Malathion	ND	ug/L	0.1	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Methoxychlor	ND (LK,R7)	ug/L	0.1	1
18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Metolachlor	ND	ug/L	0.05	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Metribuzin	ND	ug/L	0.05	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Molinate	ND	ug/L	0.1	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Naphthalene	ND	ug/L	0.3	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Parathion	ND	ug/L	0.1	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Pendimethalin	ND	ug/L	0.1	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Pentachlorophenol	ND	ug/L	1	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Permethrin (mixed isomers)	ND (LE,LK)	ug/L	0.1	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Phenanthrene	ND	ug/L	0.04	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Propachlor	ND	ug/L	0.05	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Pyrene	ND	ug/L	0.05	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Simazine	0.48	ug/L	0.05	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Terbacil	ND	ug/L	0.1	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Terbuthylazine	ND	ug/L	0.1	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Thiobencarb (ELAP)	ND	ug/L	0.2	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	trans-Nonachlor	ND	ug/L	0.05	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Trifluralin	ND	ug/L	0.1	1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	1,3-Dimethyl-2-nitrobenzene	102	%		1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Acenaphthene-d10	104	%		1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Chrysene-d12	76	%		1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Perylene-d12	76	%		1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Phenanthrene-d10	110	%		1
1/18/2013	01/22/2013 19:12	690602	(EPA 525.2)	Triphenylphosphate	96	%		1
	EPA 525 - EPA 525 N/P Pesticides							
18/2013	01/23/2013 22:34	693891	(EPA 525)	Guthion	ND (LF,LK)	ug/L	0.1	1
1/18/2013	01/23/2013 22:34	693891	(EPA 525)	Mirex	ND	ug/L	0.1	1

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1/18/2013	01/23/2013 22:34	693891	(EPA 525)	1,3-Dimethyl-2-nitrobenzene	101	%		1
1/18/2013	01/23/2013 22:34	693891	(EPA 525)	acenaphthene-d10	102	%		1
1/18/2013	01/23/2013 22:34	693891	(EPA 525)	chrysene-d12	80	%		1
1/18/2013	01/23/2013 22:34	693891	(EPA 525)	perylene-d12	85	%		1
1/18/2013	01/23/2013 22:34	693891	(EPA 525)	phenanthrene-d10	115	%		1
1/18/2013	01/23/2013 22:34	693891	(EPA 525)	Triphenylphosphate	94	%		1
	EPA 218.6 - Hexavalent chromium(Dissolved)							
	01/18/2013 13:58	689552	(EPA 218.6)	Hexavalent chromium(Dissolved)	ND	ug/L	0.02	1
	MWH/ LCMSMS - Sulfonyl Urea Compounds							
	01/18/2013 14:06	688438	(MWH/ LCMSMS)	Chlorotoluron	ND	ug/L	0.1	1
	01/18/2013 14:06	688438	(MWH/ LCMSMS)	Diuron	ND	ug/L	0.1	1
	01/18/2013 14:06	688438	(MWH/ LCMSMS)	Isoproturon	ND	ug/L	0.1	1
	01/18/2013 14:06	688438	(MWH/ LCMSMS)	Linuron	ND	ug/L	0.1	1
	01/18/2013 14:06	688438	(MWH/ LCMSMS)	Metazachlor	ND	ug/L	0.1	1
	01/18/2013 14:06	688438	(MWH/ LCMSMS)	Metoxuron	ND (MC)	ug/L	0.1	1
	01/18/2013 14:06	688438	(MWH/ LCMSMS)	Propanil	ND	ug/L	0.1	1
	01/18/2013 14:06	688438	(MWH/ LCMSMS)	Pyriproxyfen	ND	ug/L	0.1	1
	01/18/2013 14:06	688438	(MWH/ LCMSMS)	Tebuthiuron	ND (MC)	ug/L	0.1	1
	01/18/2013 14:06	688438	(MWH/ LCMSMS)	Monuron	77	%		1
	MWH 420/SW9066 - Phenolic Compounds							
1/24/2013	01/24/2013 15:49	690423	(MWH 420/SW9066)	Phenolic Compounds	ND	mg/L	0.01	1
	EPA 335.4 - Cyanide by manual distillation							
1/23/2013	01/23/2013 18:36	689900	(EPA 335.4)	Cyanide by manual distillation	ND	mg/L	0.005	1
	EPA 350.1 - Ammonia Nitrogen							
	01/24/2013 13:36	689134	(EPA 350.1)	Ammonia Nitrogen	1.1	mg/L	0.05	1
	EPA 8260 - Volatile Organics by GCMS							
2/5/2013	02/05/2013 17:28	692805	(EPA 8260)	2-Chloroethylvinylether	ND	ug/L	0.5	1
2/5/2013	02/05/2013 17:28	692805	(EPA 8260)	1,2-Dichloroethane-d4	96	%		1
2/5/2013	02/05/2013 17:28	692805	(EPA 8260)	4-Bromofluorobenzene	105	%		1
2/5/2013	02/05/2013 17:28	692805	(EPA 8260)	Toluene-d8	103	%		1
	EPA 624 - Volatile Organics by EPA 624							
1/28/2013	01/28/2013 14:51	690772	(EPA 624)	1,1,1-Trichloroethane	ND	ug/L	0.5	1
1/28/2013	01/28/2013 14:51	690772	(EPA 624)	1,1,2,2-Tetrachloroethane	ND	ug/L	0.5	1
1/28/2013	01/28/2013 14:51	690772	(EPA 624)	1,1,2-Trichloroethane	ND	ug/L	0.5	1
*/28/2013	01/28/2013 14:51	690772	(EPA 624)	1,1-Dichloroethane	ND	ug/L	0.5	1
28/2013	01/28/2013 14:51	690772	(EPA 624)	1,1-Dichloroethylene	ND	ug/L	0.5	1
1/28/2013	01/28/2013 14:51	690772	(EPA 624)	1,2-Dichloroethane	ND	ug/L	0.5	1

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01/17/2013

Prepared	Analyzed	QC Ref #	Method	Analyte	Result	Units	MRL	Dilution
1/28/2013	01/28/2013 14:51	690772	(EPA 624)	1,2-Dichloropropane	ND	ug/L	0.5	1
1/28/2013	01/28/2013 14:51	690772	(EPA 624)	2-Butanone (MEK)	ND	ug/L	5	1
1/28/2013	01/28/2013 14:51	690772	(EPA 624)	2-Hexanone	ND	ug/L	10	1
1/28/2013	01/28/2013 14:51	690772	(EPA 624)	4-Methyl-2-Pentanone (MIBK)	ND	ug/L	5	1
1/28/2013	01/28/2013 14:51	690772	(EPA 624)	Acetone	ND (LE)	ug/L	10	1
1/28/2013	01/28/2013 14:51	690772	(EPA 624)	Acrolein (Screen)	ND	ug/L	25	1
1/28/2013	01/28/2013 14:51	690772	(EPA 624)	Acrylonitrile (Screen)	ND	ug/L	25	1
1/28/2013	01/28/2013 14:51	690772	(EPA 624)	Benzene	ND	ug/L	0.5	1
1/28/2013	01/28/2013 14:51	690772	(EPA 624)	Bromodichloromethane	6.4	ug/L	0.5	1
1/28/2013	01/28/2013 14:51	690772	(EPA 624)	Bromoform	5.4	ug/L	0.5	1
28/2013	01/28/2013 14:51	690772	(EPA 624)	Bromomethane (Methyl Bromide)	ND	ug/L	0.5	1
1/28/2013	01/28/2013 14:51	690772	(EPA 624)	Carbon disulfide	ND	ug/L	0.5	1
1/28/2013	01/28/2013 14:51	690772	(EPA 624)	Carbon Tetrachloride	ND	ug/L	0.5	1
1/28/2013	01/28/2013 14:51	690772	(EPA 624)	Chlorobenzene	ND	ug/L	0.5	1
1/28/2013	01/28/2013 14:51	690772	(EPA 624)	Chlorodibromomethane	8.4	ug/L	0.5	1
1/28/2013	01/28/2013 14:51	690772	(EPA 624)	Chloroethane	ND	ug/L	0.5	1
1/28/2013	01/28/2013 14:51	690772	(EPA 624)	Chloroform (Trichloromethane)	2.5	ug/L	0.5	1
1/28/2013	01/28/2013 14:51	690772	(EPA 624)	Chloromethane(Methyl Chloride)	ND	ug/L	0.5	1
1/28/2013	01/28/2013 14:51	690772	(EPA 624)	cis-1,2-Dichloroethylene	ND	ug/L	0.5	1
1/28/2013	01/28/2013 14:51	690772	(EPA 624)	cis-1,3-Dichloropropene	ND	ug/L	0.5	1
1/28/2013	01/28/2013 14:51	690772	(EPA 624)	Dichlorodifluoromethane	ND	ug/L	0.5	1
1/28/2013	01/28/2013 14:51	690772	(EPA 624)	Dichloromethane	ND	ug/L	0.5	1
1/28/2013	01/28/2013 14:51	690772	(EPA 624)	Ethyl benzene	ND	ug/L	0.5	1
1/28/2013	01/28/2013 14:51	690772	(EPA 624)	m,p-Xylenes	ND	ug/L	0.5	1
1/28/2013	01/28/2013 14:51	690772	(EPA 624)	m-Dichlorobenzene (1,3-DCB)	ND	ug/L	0.5	1
1/28/2013	01/28/2013 14:51	690772	(EPA 624)	Methyl Tert-butyl ether (MTBE)	ND	ug/L	0.5	1
1/28/2013	01/28/2013 14:51	690772	(EPA 624)	o-Dichlorobenzene (1,2-DCB)	ND	ug/L	0.5	1
1/28/2013	01/28/2013 14:51	690772	(EPA 624)	o-Xylene	ND	ug/L	0.5	1
1/28/2013	01/28/2013 14:51	690772	(EPA 624)	p-Dichlorobenzene (1,4-DCB)	ND	ug/L	0.5	1
1/28/2013	01/28/2013 14:51	690772	(EPA 624)	Styrene	ND	ug/L	0.5	1
1/28/2013	01/28/2013 14:51	690772	(EPA 624)	Tetrachloroethylene (PCE)	ND	ug/L	0.5	1
1/28/2013	01/28/2013 14:51	690772	(EPA 624)	Tetrahydrofuran	ND	ug/L	10	1
1/28/2013	01/28/2013 14:51	690772	(EPA 624)	Toluene	ND	ug/L	0.5	1
1/28/2013	01/28/2013 14:51	690772	(EPA 624)	Total 1,3-Dichloropropene	ND	ug/L	1	1
'28/2013	01/28/2013 14:51	690772	(EPA 624)	trans-1,2-Dichloroethylene	ND	ug/L	0.5	1
1/28/2013	01/28/2013 14:51	690772	(EPA 624)	trans-1,3-Dichloropropene	ND	ug/L	0.5	1
1/28/2013	01/28/2013 14:51	690772	(EPA 624)	Trichloroethylene (TCE)	ND	ug/L	0.5	1

Rounding on totals after summation.
(c) - indicates calculated results

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Laboratory Data
Report: 422385

City of Wichita Falls
Mark Southard
4801 Big Ed Neal Dr
Wichita Falls, TX 76310

Samples Received on:
01/17/2013

Prepared	Analyzed	QC Ref #	Method	Analyte	Result	Units	MRL	Dilution
1/28/2013	01/28/2013 14:51	690772	(EPA 624)	Trichlorofluoromethane	ND	ug/L	0.5	1
1/28/2013	01/28/2013 14:51	690772	(EPA 624)	Vinyl Acetate	ND	ug/L	10	1
1/28/2013	01/28/2013 14:51	690772	(EPA 624)	Vinyl chloride (VC)	ND	ug/L	0.3	1
1/28/2013	01/28/2013 14:51	690772	(EPA 624)	1,2-Dichloroethane-d4	101	%		1
1/28/2013	01/28/2013 14:51	690772	(EPA 624)	4-Bromofluorobenzene	101	%		1
1/28/2013	01/28/2013 14:51	690772	(EPA 624)	Toluene-d8	95	%		1
	SM4500-HB - PH (H3=past HT not compliant)							
	01/19/2013 19:39	689317	(SM4500-HB)	PH (H3=past HT not compliant)	7.2	Units	0.1	1
	4500P-E/365.1 - Orthophosphate as P (OPO4)							
	01/17/2013 15:46	688964	(4500P-E/365.1)	Orthophosphate as P	5.0	mg/L	0.05	5

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QC Ref # 688438 - Sulfonyl Urea Compounds		**Analysis Date: 01/18/2013**
201301180174	WASTEWATER EFFLUENT	Analyzed by: LHZ
QC Ref # 688964 - Orthophosphate as P (OPO4)		**Analysis Date: 01/17/2013**
201301180174	WASTEWATER EFFLUENT	Analyzed by: ADV
QC Ref # 689134 - Ammonia Nitrogen		**Analysis Date: 01/24/2013**
201301180174	WASTEWATER EFFLUENT	Analyzed by: MYH
QC Ref # 689256 - Chlorophenoxy Herbicides		**Analysis Date: 01/19/2013**
201301180174	WASTEWATER EFFLUENT	Analyzed by: KCL
QC Ref # 689317 - PH (H3=past HT not compliant)		**Analysis Date: 01/19/2013**
201301180174	WASTEWATER EFFLUENT	Analyzed by: ADV
QC Ref # 689552 - Hexavalent chromium(Dissolved)		**Analysis Date: 01/18/2013**
201301180174	WASTEWATER EFFLUENT	Analyzed by: TLH
QC Ref # 689578 - EDB/DBCP/HAN by EPA 551.1		**Analysis Date: 01/23/2013**
201301180174	WASTEWATER EFFLUENT	Analyzed by: MCP
QC Ref # 689635 - Asbestos by TEM - >10 microns		**Analysis Date: 01/22/2013**
201301180174	WASTEWATER EFFLUENT	Analyzed by: CJB
QC Ref # 689809 - ICPMS Metals		**Analysis Date: 01/23/2013**
201301180174	WASTEWATER EFFLUENT	Analyzed by: RPD
QC Ref # 689859 - ICP Metals		**Analysis Date: 01/23/2013**
201301180174	WASTEWATER EFFLUENT	Analyzed by: NINA
QC Ref # 689900 - Cyanide by manual distillation		**Analysis Date: 01/23/2013**
201301180174	WASTEWATER EFFLUENT	Analyzed by: KXS
QC Ref # 690423 - Phenolic Compounds		**Analysis Date: 01/24/2013**
201301180174	WASTEWATER EFFLUENT	Analyzed by: QMK
QC Ref # 690602 - Semivolatiles by GCMS		**Analysis Date: 01/22/2013**
201301180174	WASTEWATER EFFLUENT	Analyzed by: JWC
QC Ref # 690772 - Volatile Organics by EPA 624		**Analysis Date: 01/28/2013**
201301180174	WASTEWATER EFFLUENT	Analyzed by: SZZ
QC Ref # 692805 - Volatile Organics by GCMS		**Analysis Date: 02/05/2013**
201301180174	WASTEWATER EFFLUENT	Analyzed by: SZZ
QC Ref # 693891 - EPA 525 N/P Pesticides		**Analysis Date: 01/23/2013**
201301180174	WASTEWATER EFFLUENT	Analyzed by: JWC
QC Ref # 693956 - 8270 Semivolatile, Screen, TIC		**Analysis Date: 02/19/2013**
201301180174	WASTEWATER EFFLUENT	Analyzed by: PAC

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QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
QC Ref# 688438 - Sulfonyl Urea Compounds by MWH/ LCMSMS						**Analysis Date: 01/18/2013**			
LCS1	Chlorotoluron		1.0	0.912	ug/L	91	(70-130)		
LCS2	Chlorotoluron		1.0	0.882	ug/L	88	(70-130)	30	3.2
MBLK	Chlorotoluron			<0.05	ug/L				
MRL_CHK	Chlorotoluron		0.1	0.113	ug/L	113	(50-150)		
MS_201301180174	Chlorotoluron	ND	1.0	0.927	ug/L	93	(70-130)		
MSD_201301180174	Chlorotoluron	ND	1.0	0.972	ug/L	97	(70-130)	30	4.7
LCS1	Diuron		1.0	0.888	ug/L	89	(70-130)		
LCS2	Diuron		1.0	0.868	ug/L	87	(70-130)	30	2.3
MBLK	Diuron			<0.2	ug/L				
MRL_CHK	Diuron		0.1	0.114	ug/L	114	(50-150)		
MS_201301180174	Diuron	ND	1.0	0.850	ug/L	83	(70-130)		
MSD_201301180174	Diuron	ND	1.0	0.924	ug/L	91	(70-130)	30	8.4
LCS1	Isoproturon		1.0	0.904	ug/L	91	(70-130)		
LCS2	Isoproturon		1.0	0.893	ug/L	89	(70-130)	30	1.3
MBLK	Isoproturon			<0.05	ug/L				
MRL_CHK	Isoproturon		0.1	0.0970	ug/L	97	(50-150)		
MS_201301180174	Isoproturon	ND	1.0	0.994	ug/L	99	(70-130)		
MSD_201301180174	Isoproturon	ND	1.0	1.05	ug/L	105	(70-130)	30	5.5
LCS1	Linuron		1.0	0.969	ug/L	97	(70-130)		
LCS2	Linuron		1.0	0.989	ug/L	99	(70-130)	30	2.0
MBLK	Linuron			<0.05	ug/L				
MRL_CHK	Linuron		0.1	0.127	ug/L	127	(50-150)		
MS_201301180174	Linuron	ND	1.0	1.03	ug/L	99	(70-130)		
MSD_201301180174	Linuron	ND	1.0	1.14	ug/L	111	(70-130)	30	10
LCS1	Metazachlor		1.0	0.876	ug/L	88	(70-130)		
LCS2	Metazachlor		1.0	0.846	ug/L	85	(70-130)	30	3.5
MBLK	Metazachlor			<0.05	ug/L				
MRL_CHK	Metazachlor		0.1	0.0912	ug/L	91	(50-150)		
MS_201301180174	Metazachlor	ND	1.0	0.917	ug/L	92	(70-130)		
MSD_201301180174	Metazachlor	ND	1.0	0.966	ug/L	97	(70-130)	30	5.2
LCS1	Metoxuron		1.0	0.867	ug/L	87	(70-130)		
LCS2	Metoxuron		1.0	0.854	ug/L	85	(70-130)	30	1.5
MBLK	Metoxuron			<0.05	ug/L				
MRL_CHK	Metoxuron		0.1	0.0637	ug/L	64	(50-150)		
MS_201301180174	Metoxuron	ND	1.0	0.572	ug/L	**57**	(70-130)		
MSD_201301180174	Metoxuron	ND	1.0	0.603	ug/L	**60**	(70-130)	30	5.3

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RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level).
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QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
LCS1	Monuron			88.8	%	89	(70-130)		
LCS2	Monuron			86.3	%	86	(70-130)		
MBLK	Monuron			91.8	%				
MRL_CHK	Monuron			88.1	%	88	(70-130)		
MS_201301180174	Monuron	77		106	%	106	(70-130)		
MSD_201301180174	Monuron	77		110	%	110	(70-130)		
LCS1	Propanil		1.0	1.03	ug/L	103	(70-130)		
LCS2	Propanil		1.0	1.06	ug/L	106	(70-130)	30	2.9
MBLK	Propanil			<0.05	ug/L				
MRL_CHK	Propanil		0.1	0.137	ug/L	137	(50-150)		
MS_201301180174	Propanil	ND	1.0	1.14	ug/L	110	(70-130)		
MSD_201301180174	Propanil	ND	1.0	1.17	ug/L	113	(70-130)	30	1.7
LCS1	Pyriproxyfen		1.0	1.04	ug/L	104	(70-130)		
LCS2	Pyriproxyfen		1.0	1.03	ug/L	103	(70-130)	30	0.97
MBLK	Pyriproxyfen			<0.05	ug/L				
MRL_CHK	Pyriproxyfen		0.1	0.106	ug/L	106	(50-150)		
MS_201301180174	Pyriproxyfen	ND	1.0	1.30	ug/L	129	(70-130)		
MSD_201301180174	Pyriproxyfen	ND	1.0	1.30	ug/L	129	(70-130)	30	0.0
LCS1	Tebuthiuron		1.0	0.898	ug/L	90	(70-130)		
LCS2	Tebuthiuron		1.0	0.900	ug/L	90	(70-130)	30	0.22
MBLK	Tebuthiuron			<0.05	ug/L				
MRL_CHK	Tebuthiuron		0.1	0.107	ug/L	107	(50-150)		
MS_201301180174	Tebuthiuron	ND	1.0	0.663	ug/L	**65**	(70-130)		
MSD_201301180174	Tebuthiuron	ND	1.0	0.713	ug/L	71	(70-130)	30	7.3
QC Ref# 688964 - Orthophosphate as P (OPO4) by 4500P-E/365.1						**Analysis Date: 01/17/2013**			
LCS1	Orthophosphate as P		0.25	0.260	mg/L	104	(90-110)		
LCS2	Orthophosphate as P		0.25	0.272	mg/L	109	(90-110)	20	4.5
MBLK	Orthophosphate as P			<0.01	mg/L				
MRL_CHK	Orthophosphate as P		0.01	0.00800	mg/L	80	(50-150)		
MS_201301180187	Orthophosphate as P	0.022	0.5	0.518	mg/L	99	(90-110)		
MS_201301170329	Orthophosphate as P	0.015	0.5	0.526	mg/L	102	(90-110)		
MSD_201301180187	Orthophosphate as P	0.022	0.5	0.536	mg/L	103	(90-110)	20	3.4
MSD_201301170329	Orthophosphate as P	0.015	0.5	0.537	mg/L	104	(90-110)	20	2.1
QC Ref# 689134 - Ammonia Nitrogen by EPA 350.1						**Analysis Date: 01/24/2013**			
LCS1	Ammonia Nitrogen		1.0	1.07	mg/L	107	(90-110)		
LCS2	Ammonia Nitrogen		1.0	1.07	mg/L	107	(90-110)	20	0.0
MBLK	Ammonia Nitrogen			<0.05	mg/L				

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RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level).
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QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MRL_CHK	Ammonia Nitrogen		0.05	0.0443	mg/L	89	(50-112)		
MRLLW	Ammonia Nitrogen		0.03	0.0260	mg/L	87	(50-150)		
MS_201301240339	Ammonia Nitrogen	ND	1.0	0.389	mg/L	**39**	(90-110)		
MS2_201301170700	Ammonia Nitrogen	ND	1.0	0.926	mg/L	93	(90-110)		
MSD_201301240339	Ammonia Nitrogen	ND	1.0	0.390	mg/L	**39**	(90-110)	20	0.26
MSD2_201301170700	Ammonia Nitrogen	ND	1.0	0.939	mg/L	94	(90-110)	20	1.4
QC Ref# 689256 - Chlorophenoxy Herbicides by EPA 515.4						**Analysis Date: 01/18/2013**			
CCCH	2,4,5-TP (Silvex)		4.0	3.99	ug/L	100	(70-130)		
CCCM	2,4,5-TP (Silvex)		1.0	1.01	ug/L	101	(70-130)		
MBLK	2,4,5-TP (Silvex)			<0.1	ug/L				
MRL_CHK	2,4,5-TP (Silvex)		0.2	0.204	ug/L	102	(50-150)		
MS1_201301160446	2,4,5-TP (Silvex)	ND	3.0	3.09	ug/L	103	(70-130)		
MSD1_201301160446	2,4,5-TP (Silvex)	ND	3.0	3.05	ug/L	102	(70-130)	30	1.3
CCH	2,4-D		2.0	2.08	ug/L	104	(70-130)		
CCCM	2,4-D		0.5	0.565	ug/L	113	(70-130)		
MBLK	2,4-D			<0.05	ug/L				
MRL_CHK	2,4-D		0.1	0.139	ug/L	139	(50-150)		
MS1_201301160446	2,4-D	ND	1.5	1.68	ug/L	112	(70-130)		
MSD1_201301160446	2,4-D	ND	1.5	1.63	ug/L	109	(70-130)	30	3.0
CCCH	Bentazon		10	9.90	ug/L	99	(70-130)		
CCCM	Bentazon		2.5	2.25	ug/L	90	(70-130)		
MBLK	Bentazon			<0.25	ug/L				
MRL_CHK	Bentazon		0.5	0.422	ug/L	84	(50-150)		
MS1_201301160446	Bentazon	ND	7.5	7.64	ug/L	102	(70-130)		
MSD1_201301160446	Bentazon	ND	7.5	7.61	ug/L	101	(70-130)	30	0.52
CCCH	Dalapon		20	19.9	ug/L	100	(70-130)		
CCCM	Dalapon		5.0	5.04	ug/L	101	(70-130)		
MBLK	Dalapon			<0.5	ug/L				
MRL_CHK	Dalapon		1.0	0.930	ug/L	93	(50-150)		
MS1_201301160446	Dalapon	ND	15	15.4	ug/L	103	(70-130)		
MSD1_201301160446	Dalapon	ND	15	15.6	ug/L	104	(70-130)	30	1.3
CCCH	Dinoseb		4.0	4.12	ug/L	103	(70-130)		
CCCM	Dinoseb		1.0	1.01	ug/L	101	(70-130)		
MBLK	Dinoseb			<0.1	ug/L				
MRL_CHK	Dinoseb		0.2	0.226	ug/L	113	(50-150)		
MS1_201301160446	Dinoseb	ND	3.0	3.17	ug/L	106	(70-130)		
MSD1_201301160446	Dinoseb	ND	3.0	3.16	ug/L	105	(70-130)	30	0.32
CCH	Pentachlorophenol		0.8	0.787	ug/L	98	(70-130)		

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RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level).
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QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
CCCM	Pentachlorophenol		0.2	0.192	ug/L	96	(70-130)		
MBLK	Pentachlorophenol			<0.02	ug/L				
MRL_CHK	Pentachlorophenol		0.04	0.0416	ug/L	104	(50-150)		
MS1_201301160446	Pentachlorophenol	ND	0.6	0.622	ug/L	104	(70-130)		
MSD1_201301160446	Pentachlorophenol	ND	0.6	0.606	ug/L	101	(70-130)	30	2.6
CCCH	Picloram		2.0	2.09	ug/L	104	(70-130)		
CCCM	Picloram		0.5	0.515	ug/L	103	(70-130)		
MBLK	Picloram			<0.05	ug/L				
MRL_CHK	Picloram		0.1	0.113	ug/L	113	(50-150)		
MS1_201301160446	Picloram	ND	1.5	1.57	ug/L	104	(70-130)		
MSD1_201301160446	Picloram	ND	1.5	1.59	ug/L	106	(70-130)	30	1.3
QC Ref# 689317 - PH (H3=past HT not compliant) by SM4500-HB						**Analysis Date: 01/19/2013**			
DUP_201301180117	PH (H3=past HT not compliant)	7.9		7.94	Units		(0-20)	20	0.25
DUP_201301180409	PH (H3=past HT not compliant)	6.6		6.63	Units		(0-20)	20	0.91
LCS1	PH (H3=past HT not compliant)		6.0	5.98	Units	100	(98-102)		
LCS2	PH (H3=past HT not compliant)		6.0	5.98	Units	100	(98-102)	20	0.0
QC Ref# 689552 - Hexavalent chromium(Dissolved) by EPA 218.6						**Analysis Date: 01/18/2013**			
LCS1	Hexavalent chromium(Dissolved)		2.0	1.99	ug/L	100	(90-110)		
LCS2	Hexavalent chromium(Dissolved)		2.0	2.00	ug/L	100	(90-110)		
MBLK	Hexavalent chromium(Dissolved)			<0.020	ug/L				
MRL_CHK	Hexavalent chromium(Dissolved)		0.02	0.0143	ug/L	72	(50-150)		
MS_201301170696	Hexavalent chromium(Dissolved)	3.0	2.0	5.08	ug/L	105	(90-110)		
MSD_201301170696	Hexavalent chromium(Dissolved)	3.0	2.0	5.07	ug/L	104	(90-110)	20	0.20
QC Ref# 689578 - EDB/DBCP/HAN by EPA 551.1 by EPA 551.1						**Analysis Date: 01/23/2013**			
CCC3	1,2-Dibromopropane (S)			100	%	100	(80-120)		
CCCM2	1,2-Dibromopropane (S)			99.8	%	100	(80-120)		
DUP1_201301210086	1,2-Dibromopropane (S)			115	%	115	(80-120)		
DUP2_201301170135	1,2-Dibromopropane (S)			95.1	%	95	(80-120)		
MBLK	1,2-Dibromopropane (S)			113	%	113	(80-120)		
MRL_CHK	1,2-Dibromopropane (S)			101	%	101	(80-120)		
MS_201301170131	1,2-Dibromopropane (S)			95.5	%	95	(80-120)		
MS2_201301210085	1,2-Dibromopropane (S)			118	%	118	(80-120)		
CCC3	Dibromochloropropane (DBCP)		0.25	0.263	ug/L	105	(80-120)		
CCCM2	Dibromochloropropane (DBCP)		0.05	0.0536	ug/L	107	(80-120)		
DUP1_201301210086	Dibromochloropropane (DBCP)	ND		ND	ug/L		(0-20)		
DUP2_201301170135	Dibromochloropropane (DBCP)	ND		ND	ug/L		(0-20)		
BLK	Dibromochloropropane (DBCP)			<0.01	ug/L				

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QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MRL_CHK	Dibromochloropropane (DBCP)		0.01	0.0109	ug/L	109	(50-150)		
MS_201301170131	Dibromochloropropane (DBCP)	ND	0.25	0.261	ug/L	104	(80-120)		
MS2_201301210085	Dibromochloropropane (DBCP)	ND	0.05	0.0507	ug/L	101	(80-120)		
CCC3	Ethylene Dibromide (EDB)		0.25	0.252	ug/L	101	(80-120)		
CCCM2	Ethylene Dibromide (EDB)		0.05	0.0545	ug/L	109	(80-120)		
DUP1_201301210086	Ethylene Dibromide (EDB)	ND		ND	ug/L		(0-20)		
DUP2_201301170135	Ethylene Dibromide (EDB)	ND		ND	ug/L		(0-20)		
MBLK	Ethylene Dibromide (EDB)			<0.01	ug/L				
MRL_CHK	Ethylene Dibromide (EDB)		0.01	0.0178	ug/L	**178**	(50-150)		
MS_201301170131	Ethylene Dibromide (EDB)	ND	0.25	0.256	ug/L	102	(80-120)		
MS2_201301210085	Ethylene Dibromide (EDB)	ND	0.05	2.16	ug/L	**4320**	(80-120)		
QC Ref# 689809 - ICPMS Metals by EPA 200.8						**Analysis Date: 01/23/2013**			
LCS1	Chromium Total ICAP/MS		100	100	ug/L	100	(85-115)		
LCS2	Chromium Total ICAP/MS		100	97.4	ug/L	97	(85-115)	20	2.6
MBLK	Chromium Total ICAP/MS			<1	ug/L				
MRL_CHK	Chromium Total ICAP/MS		1.0	1.11	ug/L	111	(50-150)		
MS_201301170289	Chromium Total ICAP/MS	4.4	100	106	ug/L	102	(70-130)		
MS2_201301170296	Chromium Total ICAP/MS	4.5	100	108	ug/L	104	(70-130)		
MSD_201301170289	Chromium Total ICAP/MS	4.4	100	108	ug/L	104	(70-130)	20	1.9
MSD2_201301170296	Chromium Total ICAP/MS	4.5	100	107	ug/L	103	(70-130)	20	0.93
LCS1	Nickel Total ICAP/MS		50	50.5	ug/L	101	(85-115)		
LCS2	Nickel Total ICAP/MS		50	49.5	ug/L	99	(85-115)	20	2.0
MBLK	Nickel Total ICAP/MS			<5	ug/L				
MRL_CHK	Nickel Total ICAP/MS		5.0	5.13	ug/L	103	(50-150)		
MS_201301170289	Nickel Total ICAP/MS	ND	50	49.7	ug/L	97	(70-130)		
MS2_201301170296	Nickel Total ICAP/MS	ND	50	50.5	ug/L	97	(70-130)		
MSD_201301170289	Nickel Total ICAP/MS	ND	50	49.9	ug/L	97	(70-130)	20	0.40
MSD2_201301170296	Nickel Total ICAP/MS	ND	50	50.9	ug/L	98	(70-130)	20	0.79
QC Ref# 689859 - ICP Metals by EPA 200.7						**Analysis Date: 01/23/2013**			
LCS1	Silica		21	24.0	mg/L	112	(85-115)		
LCS2	Silica		21	24.2	mg/L	113	(85-115)	20	0.41
MBLK	Silica			<0.25	mg/L				
MRL_CHK	Silica		0.42	0.505	mg/L	120	(50-150)		
MS_201301170210	Silica	26	21	48.6	mg/L	103	(70-130)		
MS2_201301180001	Silica	33	21	56.7	mg/L	112	(70-130)		
MSD_201301170210	Silica	26	21	49.6	mg/L	108	(70-130)	20	2.0
MSD2_201301180001	Silica	33	21	56.3	mg/L	110	(70-130)	20	0.71

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QC Ref# 689900 - Cyanide by manual distillation by EPA 335.4						**Analysis Date: 01/23/2013**			
LCS1	Cyanide by manual distillation		0.1	0.103	mg/L	103	(90-110)		
LCS2	Cyanide by manual distillation		0.1	0.0993	mg/L	99	(90-110)	20	3.7
MBLK	Cyanide by manual distillation			<0.005	mg/L				
MRL_CHK	Cyanide by manual distillation		0.005	0.00680	mg/L	136	(50-150)		
MS_201301210085	Cyanide by manual distillation	ND	0.1	0.0964	mg/L	96	(90-110)		
MS_201301180210	Cyanide by manual distillation	ND	0.1	0.103	mg/L	101	(90-110)		
MSD_201301180210	Cyanide by manual distillation	ND	0.1	0.107	mg/L	106	(90-110)	20	3.8
MSD_201301210085	Cyanide by manual distillation	ND	0.1	0.0984	mg/L	98	(90-110)	20	2.0
QC Ref# 690423 - Phenolic Compounds by MWH 420/SW9066						**Analysis Date: 01/24/2013**			
LCS1	Phenolic Compounds		0.08	0.0764	mg/L	96	(90-110)		
LCS2	Phenolic Compounds		0.08	0.0800	mg/L	100	(90-110)	20	4.6
MBLK	Phenolic Compounds			<0.01	mg/L				
MRL_CHK	Phenolic Compounds		0.01	0.0102	mg/L	102	(50-150)		
MS_201212190119	Phenolic Compounds	ND	0.08	0.0819	mg/L	101	(90-110)		
MSD_201212190119	Phenolic Compounds	ND	0.08	0.0833	mg/L	103	(90-110)	20	1.7
QC Ref# 690602 - Semivolatiles by GCMS by EPA 525.2						**Analysis Date: 01/22/2013**			
LCS1	1,3-Dimethyl-2-nitrobenzene (S)			106	%	106	(70-130)		
LCS2	1,3-Dimethyl-2-nitrobenzene (S)			97.7	%	98	(70-130)		
MBLK	1,3-Dimethyl-2-nitrobenzene (S)			97.7	%	98	(70-130)		
MRL_CHK	1,3-Dimethyl-2-nitrobenzene (S)			99.4	%	99	(70-130)		
MS_201301170685	1,3-Dimethyl-2-nitrobenzene (S)			110	%	110	(70-130)		
LCS1	2,4-Dinitrotoluene		2.0	2.11	ug/L	106	(70-130)		
LCS2	2,4-Dinitrotoluene		2.0	1.96	ug/L	98	(70-130)	20	7.4
MBLK	2,4-Dinitrotoluene			<0.05	ug/L				
MRL_CHK	2,4-Dinitrotoluene		0.1	0.0900	ug/L	90	(50-150)		
MS_201301170685	2,4-Dinitrotoluene	NR	2.0	2.25	ug/L	113	(70-130)		
LCS1	2,6-Dinitrotoluene		2.0	2.12	ug/L	106	(70-130)		
LCS2	2,6-Dinitrotoluene		2.0	1.93	ug/L	96	(70-130)	20	9.4
MBLK	2,6-Dinitrotoluene			<0.05	ug/L				
MRL_CHK	2,6-Dinitrotoluene		0.1	0.0990	ug/L	99	(50-150)		
MS_201301170685	2,6-Dinitrotoluene	NR	2.0	2.14	ug/L	107	(70-130)		
LCS1	4,4-DDD		2.0	1.95	ug/L	97	(70-130)		
LCS2	4,4-DDD		2.0	1.86	ug/L	93	(70-130)	20	4.7
MBLK	4,4-DDD			<0.05	ug/L				
MRL_CHK	4,4-DDD		0.1	0.0950	ug/L	95	(50-150)		
MS_201301170685	4,4-DDD	NR	2.0	1.95	ug/L	98	(70-130)		

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QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
LCS1	4,4-DDE		2.0	1.79	ug/L	90	(70-130)		
LCS2	4,4-DDE		2.0	1.81	ug/L	91	(70-130)	20	1.1
MBLK	4,4-DDE			<0.05	ug/L				
MRL_CHK	4,4-DDE		0.1	0.0870	ug/L	87	(50-150)		
MS_201301170685	4,4-DDE	NR	2.0	1.84	ug/L	92	(70-130)		
LCS1	4,4-DDT		2.0	1.58	ug/L	79	(70-130)		
LCS2	4,4-DDT		2.0	1.53	ug/L	77	(70-130)	20	3.2
MBLK	4,4-DDT			<0.05	ug/L				
MRL_CHK	4,4-DDT		0.1	0.0880	ug/L	88	(50-150)		
MS_201301170685	4,4-DDT	NR	2.0	1.95	ug/L	97	(70-130)		
LCS1	Acenaphthene		2.0	1.91	ug/L	96	(70-130)		
LCS2	Acenaphthene		2.0	1.97	ug/L	98	(70-130)	20	3.1
MBLK	Acenaphthene			<0.05	ug/L				
RL_CHK	Acenaphthene		0.1	0.102	ug/L	102	(50-150)		
S_201301170685	Acenaphthene	NR	2.0	2.15	ug/L	108	(70-130)		
LCS1	Acenaphthene-d10 (I)			75.4	%	75	(50-150)		
LCS2	Acenaphthene-d10 (I)			91.5	%	92	(50-150)		
MBLK	Acenaphthene-d10 (I)			91.8	%	92	(50-150)		
MRL_CHK	Acenaphthene-d10 (I)			103	%	103	(50-150)		
MS_201301170685	Acenaphthene-d10 (I)			99.0	%	99	(50-150)		
LCS1	Acenaphthylene		2.0	1.78	ug/L	89	(70-130)		
LCS2	Acenaphthylene		2.0	1.84	ug/L	92	(70-130)	20	3.3
MBLK	Acenaphthylene			<0.05	ug/L				
MRL_CHK	Acenaphthylene		0.1	0.0780	ug/L	78	(50-150)		
MS_201301170685	Acenaphthylene	NR	2.0	1.88	ug/L	94	(70-130)		
LCS1	Acetochlor		2.0	2.27	ug/L	114	(70-130)		
LCS2	Acetochlor		2.0	2.14	ug/L	107	(70-130)	20	5.4
MBLK	Acetochlor			<0.05	ug/L				
MRL_CHK	Acetochlor		0.05	0.0560	ug/L	112	(50-150)		
MS_201301170685	Acetochlor	NR	2.0	2.04	ug/L	102	(70-130)		
LCS1	Alachlor		2.0	2.25	ug/L	113	(70-130)		
LCS2	Alachlor		2.0	2.01	ug/L	101	(70-130)	20	11
MBLK	Alachlor			<0.025	ug/L				
MRL_CHK	Alachlor		0.05	0.0430	ug/L	86	(50-150)		
MS_201301170685	Alachlor	NR	2.0	1.95	ug/L	98	(70-130)		
LCS1	Aldrin		2.0	1.64	ug/L	82	(70-130)		
LCS2	Aldrin		2.0	1.74	ug/L	87	(70-130)	20	5.3
BLK	Aldrin			<0.025	ug/L				

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MRL_CHK	Aldrin		0.05	0.0410	ug/L	82	(50-150)		
MS_201301170685	Aldrin	NR	2.0	1.61	ug/L	81	(70-130)		
LCS1	Alpha-BHC		2.0	2.43	ug/L	122	(70-130)		
LCS2	Alpha-BHC		2.0	2.22	ug/L	111	(70-130)	20	9.0
MBLK	Alpha-BHC			<0.05	ug/L				
MRL_CHK	Alpha-BHC		0.1	0.114	ug/L	114	(50-150)		
MS_201301170685	Alpha-BHC	NR	2.0	2.33	ug/L	117	(70-130)		
LCS1	alpha-Chlordane		2.0	1.93	ug/L	97	(70-130)		
LCS2	alpha-Chlordane		2.0	1.92	ug/L	96	(70-130)	20	0.52
MBLK	alpha-Chlordane			<0.025	ug/L				
MRL_CHK	alpha-Chlordane		0.05	0.0310	ug/L	62	(50-150)		
MS_201301170685	alpha-Chlordane	NR	2.0	1.96	ug/L	98	(70-130)		
LCS1	Anthracene		2.0	1.92	ug/L	96	(70-130)		
?CS2	Anthracene		2.0	1.94	ug/L	97	(70-130)	20	1.0
?MBLK	Anthracene			<0.02	ug/L				
MRL_CHK	Anthracene		0.02	0.0210	ug/L	105	(50-150)		
MS_201301170685	Anthracene	NR	2.0	1.88	ug/L	94	(70-130)		
LCS1	Atrazine		2.0	2.29	ug/L	115	(70-130)		
LCS2	Atrazine		2.0	2.21	ug/L	110	(70-130)	20	3.6
MBLK	Atrazine			<0.025	ug/L				
MRL_CHK	Atrazine		0.05	0.0450	ug/L	90	(50-150)		
MS_201301170685	Atrazine	NR	2.0	2.35	ug/L	118	(70-130)		
LCS1	Benz(a)Anthracene		2.0	1.53	ug/L	76	(70-130)		
LCS2	Benz(a)Anthracene		2.0	1.66	ug/L	83	(70-130)	20	8.2
MBLK	Benz(a)Anthracene			<0.025	ug/L				
MRL_CHK	Benz(a)Anthracene		0.05	0.0460	ug/L	92	(50-150)		
MS_201301170685	Benz(a)Anthracene	NR	2.0	1.95	ug/L	97	(70-130)		
LCS1	Benzo(a)pyrene		2.0	2.10	ug/L	105	(70-130)		
LCS2	Benzo(a)pyrene		2.0	2.35	ug/L	118	(70-130)	20	11
MBLK	Benzo(a)pyrene			<0.01	ug/L				
MRL_CHK	Benzo(a)pyrene		0.02	0.0220	ug/L	110	(50-150)		
MS_201301170685	Benzo(a)pyrene	NR	2.0	1.82	ug/L	91	(70-130)		
LCS1	Benzo(b)Fluoranthene		2.0	2.09	ug/L	105	(70-130)		
LCS2	Benzo(b)Fluoranthene		2.0	1.52	ug/L	76	(70-130)	20	**32**
MBLK	Benzo(b)Fluoranthene			<0.01	ug/L				
MRL_CHK	Benzo(b)Fluoranthene		0.02	0.0190	ug/L	95	(50-150)		
MS_201301170685	Benzo(b)Fluoranthene	NR	2.0	2.01	ug/L	101	(70-130)		
?CS1	Benzo(g,h,i)Perylene		2.0	1.84	ug/L	92	(70-130)		

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LCS2	Benzo(g,h,i)Perylene		2.0	2.30	ug/L	115	(70-130)	20	23
MBLK	Benzo(g,h,i)Perylene			<0.025	ug/L				
MRL_CHK	Benzo(g,h,i)Perylene		0.05	0.0450	ug/L	90	(50-150)		
MS_201301170685	Benzo(g,h,i)Perylene	NR	2.0	1.95	ug/L	98	(70-130)		
LCS1	Benzo(k)Fluoranthene		2.0	2.74	ug/L	137	(70-130)		
LCS2	Benzo(k)Fluoranthene		2.0	4.08	ug/L	204	(70-130)	20	39
MBLK	Benzo(k)Fluoranthene			<0.01	ug/L				
MRL_CHK	Benzo(k)Fluoranthene		0.02	0.0230	ug/L	115	(50-150)		
MS_201301170685	Benzo(k)Fluoranthene	NR	2.0	2.06	ug/L	103	(70-130)		
LCS1	Beta-BHC		2.0	2.43	ug/L	122	(70-130)		
LCS2	Beta-BHC		2.0	2.18	ug/L	109	(70-130)	20	11
MBLK	Beta-BHC			<0.05	ug/L				
MRL_CHK	Beta-BHC		0.1	0.108	ug/L	108	(50-150)		
S_201301170685	Beta-BHC	NR	2.0	2.30	ug/L	115	(70-130)		
LCS1	Bromacil		2.0	1.98	ug/L	99	(70-130)		
LCS2	Bromacil		2.0	1.76	ug/L	88	(70-130)	20	12
MBLK	Bromacil			<0.05	ug/L				
MRL_CHK	Bromacil		0.1	0.103	ug/L	103	(50-150)		
MS_201301170685	Bromacil	NR	2.0	2.05	ug/L	102	(70-130)		
LCS1	Butachlor		2.0	2.18	ug/L	109	(70-130)		
LCS2	Butachlor		2.0	1.95	ug/L	97	(70-130)	20	11
MBLK	Butachlor			<0.025	ug/L				
MRL_CHK	Butachlor		0.05	0.0530	ug/L	106	(50-150)		
MS_201301170685	Butachlor	NR	2.0	1.95	ug/L	97	(70-130)		
LCS1	Butylbenzylphthalate		2.0	2.56	ug/L	128	(70-130)		
LCS2	Butylbenzylphthalate		2.0	2.46	ug/L	123	(70-130)	20	4.0
MBLK	Butylbenzylphthalate			<0.15	ug/L				
MRL_CHK	Butylbenzylphthalate		0.15	0.305	ug/L	203	(50-150)		
MS_201301170685	Butylbenzylphthalate	NR	2.0	2.20	ug/L	110	(70-130)		
LCS1	Caffeine by method 525mod		2.0	0.791	ug/L	40	(45-137)		
LCS2	Caffeine by method 525mod		2.0	1.33	ug/L	66	(45-137)	20	51
MBLK	Caffeine by method 525mod			<0.01	ug/L				
MRL_CHK	Caffeine by method 525mod		0.05	0.126	ug/L	252	(50-150)		
MS_201301170685	Caffeine by method 525mod	NR	2.0	1.58	ug/L	79	(46-144)		
LCS1	Chlorobenzilate		2.0	2.25	ug/L	113	(70-130)		
LCS2	Chlorobenzilate		2.0	2.09	ug/L	105	(70-130)	20	7.4
MBLK	Chlorobenzilate			<0.05	ug/L				
MRL_CHK	Chlorobenzilate		0.1	0.106	ug/L	106	(50-150)		

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Laboratory QC
Report: 422385

City of Wichita Falls

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MS_201301170685	Chlorobenzilate	NR	2.0	2.16	ug/L	108	(70-130)		
LCS1	Chloroneb		2.0	2.27	ug/L	114	(70-130)		
LCS2	Chloroneb		2.0	2.15	ug/L	108	(70-130)	20	5.4
MBLK	Chloroneb			<0.05	ug/L				
MRL_CHK	Chloroneb		0.1	0.103	ug/L	103	(50-150)		
MS_201301170685	Chloroneb	NR	2.0	2.22	ug/L	111	(70-130)		
LCS1	Chlorothalonil(Draconil,Bravo)		2.0	2.14	ug/L	107	(70-130)		
LCS2	Chlorothalonil(Draconil,Bravo)		2.0	1.99	ug/L	100	(70-130)	20	7.3
MBLK	Chlorothalonil(Draconil,Bravo)			<0.05	ug/L				
MRL_CHK	Chlorothalonil(Draconil,Bravo)		0.05	0.0520	ug/L	104	(50-150)		
MS_201301170685	Chlorothalonil(Draconil,Bravo)	NR	2.0	2.00	ug/L	100	(70-130)		
LCS1	Chlorpyrifos (Dursban)		2.0	2.19	ug/L	110	(70-130)		
LCS2	Chlorpyrifos (Dursban)		2.0	2.06	ug/L	103	(70-130)	20	6.1
BLK	Chlorpyrifos (Dursban)			<0.025	ug/L				
MRL_CHK	Chlorpyrifos (Dursban)		0.05	0.0460	ug/L	92	(50-150)		
MS_201301170685	Chlorpyrifos (Dursban)	NR	2.0	1.98	ug/L	99	(70-130)		
LCS1	Chrysene		2.0	2.23	ug/L	112	(70-130)		
LCS2	Chrysene		2.0	2.08	ug/L	104	(70-130)	20	7.0
MBLK	Chrysene			<0.01	ug/L				
MRL_CHK	Chrysene		0.02	0.0230	ug/L	115	(50-150)		
MS_201301170685	Chrysene	NR	2.0	1.97	ug/L	98	(70-130)		
LCS1	Chrysene-d12 (I)			55.3	%	55	(50-150)		
LCS2	Chrysene-d12 (I)			81.0	%	81	(50-150)		
MBLK	Chrysene-d12 (I)			74.7	%	75	(50-150)		
MRL_CHK	Chrysene-d12 (I)			92.1	%	92	(50-150)		
MS_201301170685	Chrysene-d12 (I)			116	%	116	(50-150)		
LCS1	Delta-BHC		2.0	2.29	ug/L	114	(70-130)		
LCS2	Delta-BHC		2.0	2.13	ug/L	106	(70-130)	20	7.2
MBLK	Delta-BHC			<0.05	ug/L				
MRL_CHK	Delta-BHC		0.1	0.0750	ug/L	75	(50-150)		
MS_201301170685	Delta-BHC	NR	2.0	2.01	ug/L	100	(70-130)		
LCS1	Di-(2-Ethylhexyl)adipate		2.0	6.62	ug/L	**331**	(70-130)		
LCS2	Di-(2-Ethylhexyl)adipate		2.0	8.20	ug/L	**410**	(70-130)	20	**21**
MBLK	Di-(2-Ethylhexyl)adipate			<0.15	ug/L				
MRL_CHK	Di-(2-Ethylhexyl)adipate		0.3	2.58	ug/L	**861**	(50-150)		
MS_201301170685	Di-(2-Ethylhexyl)adipate	NR	2.0	1.97	ug/L	99	(70-130)		
LCS1	Di(2-Ethylhexyl)phthalate		2.0	30.5	ug/L	**1530**	(70-130)		
LCS2	Di(2-Ethylhexyl)phthalate		2.0	32.6	ug/L	**1630**	(70-130)	20	6.7

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MBLK	Di(2-Ethylhexyl)phthalate			10.1	ug/L				
MRL_CHK	Di(2-Ethylhexyl)phthalate		0.6	12.0	ug/L	**2000**	(50-150)		
MS_201301170685	Di(2-Ethylhexyl)phthalate	NR	2.0	2.15	ug/L	107	(70-130)		
LCS1	Diazinon (Qualitative)		2.0	2.05	ug/L	102	(70-130)		
LCS2	Diazinon (Qualitative)		2.0	1.92	ug/L	96	(70-130)	20	6.5
MBLK	Diazinon (Qualitative)			<0.10	ug/L				
MRL_CHK	Diazinon (Qualitative)		0.1	0.0940	ug/L	94	(50-150)		
MS_201301170685	Diazinon (Qualitative)	NR	2.0	2.05	ug/L	102	(70-130)		
LCS1	Dibenz(a,h)Anthracene		2.0	2.06	ug/L	103	(70-130)		
LCS2	Dibenz(a,h)Anthracene		2.0	2.33	ug/L	117	(70-130)	20	12
MBLK	Dibenz(a,h)Anthracene			<0.025	ug/L				
MRL_CHK	Dibenz(a,h)Anthracene		0.05	0.0550	ug/L	110	(50-150)		
MS_201301170685	Dibenz(a,h)Anthracene	NR	2.0	2.00	ug/L	100	(70-130)		
?S1	Dichlorvos (DDVP)		2.0	2.28	ug/L	114	(70-130)		
_CS2	Dichlorvos (DDVP)		2.0	2.21	ug/L	110	(70-130)	20	3.6
MBLK	Dichlorvos (DDVP)			<0.025	ug/L				
MRL_CHK	Dichlorvos (DDVP)		0.05	0.0600	ug/L	120	(50-150)		
MS_201301170685	Dichlorvos (DDVP)	NR	2.0	2.34	ug/L	117	(70-130)		
LCS1	Dieldrin		2.0	2.09	ug/L	105	(70-130)		
LCS2	Dieldrin		2.0	1.94	ug/L	97	(70-130)	20	7.4
MBLK	Dieldrin			<0.05	ug/L				
MRL_CHK	Dieldrin		0.1	0.113	ug/L	113	(50-150)		
MS_201301170685	Dieldrin	NR	2.0	1.98	ug/L	99	(70-130)		
LCS1	Diethylphthalate		2.0	2.67	ug/L	**134**	(70-130)		
LCS2	Diethylphthalate		2.0	2.55	ug/L	128	(70-130)	20	4.6
MBLK	Diethylphthalate			<0.15	ug/L				
MRL_CHK	Diethylphthalate		0.15	0.283	ug/L	**189**	(50-150)		
MS_201301170685	Diethylphthalate	NR	2.0	2.41	ug/L	121	(70-130)		
LCS1	Dimethoate		2.0	1.36	ug/L	68	(35-100)		
LCS2	Dimethoate		2.0	1.31	ug/L	66	(35-100)	20	3.8
MBLK	Dimethoate			<0.05	ug/L				
MRL_CHK	Dimethoate		0.1	0.0680	ug/L	68	(35-100)		
MS_201301170685	Dimethoate	NR	2.0	1.62	ug/L	81	(34-111)		
LCS1	Dimethylphthalate		2.0	2.29	ug/L	115	(70-130)		
LCS2	Dimethylphthalate		2.0	2.13	ug/L	106	(70-130)	20	7.2
MBLK	Dimethylphthalate			<0.15	ug/L				
MRL_CHK	Dimethylphthalate		0.3	0.304	ug/L	101	(50-150)		
?S_201301170685	Dimethylphthalate	NR	2.0	2.23	ug/L	112	(70-130)		

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LCS1	Di-n-Butylphthalate		4.0	4.68	ug/L	117	(70-130)		
LCS2	Di-n-Butylphthalate		4.0	4.48	ug/L	112	(70-130)	20	4.4
MBLK	Di-n-Butylphthalate			<0.15	ug/L				
MRL_CHK	Di-n-Butylphthalate		0.3	0.436	ug/L	145	(50-150)		
MS_201301170685	Di-n-Butylphthalate	NR	4.0	4.12	ug/L	103	(70-130)		
LCS1	Di-N-octylphthalate		2.0	39.5	ug/L	**1980**	(70-130)		
LCS2	Di-N-octylphthalate		2.0	40.2	ug/L	**2010**	(70-130)	20	1.8
MBLK	Di-N-octylphthalate			<0.05	ug/L				
MRL_CHK	Di-N-octylphthalate		0.1	17.0	ug/L	**0**	(50-150)		
MS_201301170685	Di-N-octylphthalate	NR	2.0	2.02	ug/L	101	(70-130)		
LCS1	Endosulfan I (Alpha)		2.0	1.92	ug/L	96	(70-130)		
LCS2	Endosulfan I (Alpha)		2.0	1.76	ug/L	88	(70-130)	20	8.7
MBLK	Endosulfan I (Alpha)			<0.05	ug/L				
RL_CHK	Endosulfan I (Alpha)		0.1	0.0860	ug/L	86	(50-150)		
MS_201301170685	Endosulfan I (Alpha)	NR	2.0	1.84	ug/L	92	(70-130)		
LCS1	Endosulfan II (Beta)		2.0	1.96	ug/L	98	(70-130)		
LCS2	Endosulfan II (Beta)		2.0	1.86	ug/L	93	(70-130)	20	5.2
MBLK	Endosulfan II (Beta)			<0.05	ug/L				
MRL_CHK	Endosulfan II (Beta)		0.1	0.105	ug/L	105	(50-150)		
MS_201301170685	Endosulfan II (Beta)	NR	2.0	2.06	ug/L	103	(70-130)		
LCS1	Endosulfan Sulfate		2.0	1.97	ug/L	99	(70-130)		
LCS2	Endosulfan Sulfate		2.0	1.86	ug/L	93	(70-130)	20	5.7
MBLK	Endosulfan Sulfate			<0.05	ug/L				
MRL_CHK	Endosulfan Sulfate		0.1	0.0900	ug/L	90	(50-150)		
MS_201301170685	Endosulfan Sulfate	NR	2.0	1.98	ug/L	99	(70-130)		
LCS1	Endrin		2.0	1.85	ug/L	93	(70-130)		
LCS2	Endrin		2.0	1.90	ug/L	95	(70-130)	20	2.7
MBLK	Endrin			<0.05	ug/L				
MRL_CHK	Endrin		0.1	0.131	ug/L	131	(50-150)		
MS_201301170685	Endrin	NR	2.0	1.99	ug/L	100	(70-130)		
LCS1	Endrin Aldehyde		2.0	2.00	ug/L	100	(70-130)		
LCS2	Endrin Aldehyde		2.0	1.92	ug/L	96	(70-130)	20	4.1
MBLK	Endrin Aldehyde			<0.05	ug/L				
MRL_CHK	Endrin Aldehyde		0.1	0.0930	ug/L	93	(50-150)		
MS_201301170685	Endrin Aldehyde	NR	2.0	1.99	ug/L	99	(70-130)		
LCS1	EPTC		2.0	2.16	ug/L	108	(70-130)		
LCS2	EPTC		2.0	2.08	ug/L	104	(70-130)	20	3.8
BLK	EPTC			<0.05	ug/L				

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MRL_CHK	EPTC		0.1	0.108	ug/L	108	(50-150)		
MS_201301170685	EPTC	NR	2.0	2.19	ug/L	109	(70-130)		
LCS1	Fluoranthene		2.0	1.87	ug/L	94	(70-130)		
LCS2	Fluoranthene		2.0	1.90	ug/L	95	(70-130)	20	1.6
MBLK	Fluoranthene			<0.05	ug/L				
MRL_CHK	Fluoranthene		0.05	0.0570	ug/L	114	(50-150)		
MS_201301170685	Fluoranthene	NR	2.0	1.97	ug/L	99	(70-130)		
LCS1	Fluorene		2.0	2.06	ug/L	103	(70-130)		
LCS2	Fluorene		2.0	2.07	ug/L	103	(70-130)	20	0.48
MBLK	Fluorene			<0.05	ug/L				
MRL_CHK	Fluorene		0.05	0.0540	ug/L	108	(50-150)		
MS_201301170685	Fluorene	NR	2.0	2.26	ug/L	113	(70-130)		
LCS1	gamma-Chlordane		2.0	2.01	ug/L	100	(70-130)		
LCS2	gamma-Chlordane		2.0	1.79	ug/L	90	(70-130)	20	12
MBLK	gamma-Chlordane			<0.025	ug/L				
MRL_CHK	gamma-Chlordane		0.05	0.0510	ug/L	102	(50-150)		
MS_201301170685	gamma-Chlordane	NR	2.0	1.86	ug/L	93	(70-130)		
LCS1	Heptachlor		2.0	2.01	ug/L	100	(70-130)		
LCS2	Heptachlor		2.0	1.91	ug/L	96	(70-130)	20	5.1
MBLK	Heptachlor			<0.015	ug/L				
MRL_CHK	Heptachlor		0.04	0.0320	ug/L	80	(50-150)		
MS_201301170685	Heptachlor	NR	2.0	1.98	ug/L	99	(70-130)		
LCS1	Heptachlor Epoxide (isomer B)		2.0	2.08	ug/L	104	(70-130)		
LCS2	Heptachlor Epoxide (isomer B)		2.0	1.95	ug/L	98	(70-130)	20	6.5
MBLK	Heptachlor Epoxide (isomer B)			<0.025	ug/L				
MRL_CHK	Heptachlor Epoxide (isomer B)		0.05	0.0460	ug/L	92	(50-150)		
MS_201301170685	Heptachlor Epoxide (isomer B)	NR	2.0	1.91	ug/L	96	(70-130)		
LCS1	Hexachlorobenzene		2.0	1.65	ug/L	83	(70-130)		
LCS2	Hexachlorobenzene		2.0	1.97	ug/L	99	(70-130)	20	18
MBLK	Hexachlorobenzene			<0.025	ug/L				
MRL_CHK	Hexachlorobenzene		0.05	0.0490	ug/L	98	(50-150)		
MS_201301170685	Hexachlorobenzene	NR	2.0	2.15	ug/L	108	(70-130)		
LCS1	Hexachlorocyclopentadiene		2.0	1.55	ug/L	78	(70-130)		
LCS2	Hexachlorocyclopentadiene		2.0	1.68	ug/L	84	(70-130)	20	8.1
MBLK	Hexachlorocyclopentadiene			<0.025	ug/L				
MRL_CHK	Hexachlorocyclopentadiene		0.05	0.0420	ug/L	84	(50-150)		
MS_201301170685	Hexachlorocyclopentadiene	NR	2.0	2.09	ug/L	105	(70-130)		
LCS1	Indeno(1,2,3,c,d)Pyrene		2.0	1.93	ug/L	96	(70-130)		

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LCS2	Indeno(1,2,3,c,d)Pyrene		2.0	2.24	ug/L	112	(70-130)	20	15
MBLK	Indeno(1,2,3,c,d)Pyrene			<0.025	ug/L				
MRL_CHK	Indeno(1,2,3,c,d)Pyrene		0.05	0.0540	ug/L	108	(50-150)		
MS_201301170685	Indeno(1,2,3,c,d)Pyrene	NR	2.0	1.94	ug/L	97	(70-130)		
LCS1	Isophorone		2.0	2.31	ug/L	115	(70-130)		
LCS2	Isophorone		2.0	2.18	ug/L	109	(70-130)	20	5.8
MBLK	Isophorone			<0.25	ug/L				
MRL_CHK	Isophorone		0.1	0.118	ug/L	118	(50-150)		
MS_201301170685	Isophorone	NR	2.0	2.35	ug/L	117	(70-130)		
LCS1	Lindane		2.0	2.29	ug/L	114	(70-130)		
LCS2	Lindane		2.0	2.22	ug/L	111	(70-130)	20	3.1
MBLK	Lindane			<0.02	ug/L				
MRL_CHK	Lindane		0.04	0.0580	ug/L	145	(50-150)		
3_201301170685	Lindane	NR	2.0	2.28	ug/L	114	(70-130)		
LCS1	Malathion		2.0	2.27	ug/L	113	(70-130)		
LCS2	Malathion		2.0	2.09	ug/L	105	(70-130)	20	8.3
MBLK	Malathion			<0.05	ug/L				
MRL_CHK	Malathion		0.1	0.131	ug/L	131	(50-150)		
MS_201301170685	Malathion	NR	2.0	1.95	ug/L	98	(70-130)		
LCS1	Methoxychlor		2.0	2.61	ug/L	**131**	(70-130)		
LCS2	Methoxychlor		2.0	2.04	ug/L	102	(70-130)	20	**25**
MBLK	Methoxychlor			<0.05	ug/L				
MRL_CHK	Methoxychlor		0.1	0.108	ug/L	108	(50-150)		
MS_201301170685	Methoxychlor	NR	2.0	2.09	ug/L	104	(70-130)		
LCS1	Metolachlor		2.0	2.06	ug/L	103	(70-130)		
LCS2	Metolachlor		2.0	1.99	ug/L	100	(70-130)	20	3.5
MBLK	Metolachlor			<0.025	ug/L				
MRL_CHK	Metolachlor		0.05	0.0660	ug/L	132	(50-150)		
MS_201301170685	Metolachlor	NR	2.0	1.92	ug/L	96	(70-130)		
LCS1	Metribuzin		2.0	2.03	ug/L	102	(70-130)		
LCS2	Metribuzin		2.0	1.90	ug/L	95	(70-130)	20	6.6
MBLK	Metribuzin			<0.05	ug/L				
MRL_CHK	Metribuzin		0.05	0.0650	ug/L	130	(50-150)		
MS_201301170685	Metribuzin	NR	2.0	1.97	ug/L	99	(70-130)		
LCS1	Molinate		2.0	2.22	ug/L	111	(70-130)		
LCS2	Molinate		2.0	2.19	ug/L	110	(70-130)	20	1.4
MBLK	Molinate			<0.05	ug/L				
RL_CHK	Molinate		0.1	0.109	ug/L	109	(50-150)		

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Laboratory QC
Report: 422385

City of Wichita Falls

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MS_201301170685	Molinate	NR	2.0	2.24	ug/L	112	(70-130)		
LCS1	Naphthalene		2.0	1.91	ug/L	96	(70-130)		
LCS2	Naphthalene		2.0	1.88	ug/L	94	(70-130)	20	1.6
MBLK	Naphthalene			<0.05	ug/L				
MRL_CHK	Naphthalene		0.1	0.0960	ug/L	96	(50-150)		
MS_201301170685	Naphthalene	NR	2.0	2.16	ug/L	108	(70-130)		
LCS1	Parathion		2.0	2.10	ug/L	105	(70-130)		
LCS2	Parathion		2.0	1.97	ug/L	98	(70-130)	20	6.4
MBLK	Parathion			<0.05	ug/L				
MRL_CHK	Parathion		0.1	0.0950	ug/L	95	(50-150)		
MS_201301170685	Parathion	NR	2.0	1.98	ug/L	99	(70-130)		
LCS1	Pendimethalin		2.0	1.78	ug/L	89	(70-130)		
LCS2	Pendimethalin		2.0	1.65	ug/L	83	(70-130)	20	7.6
BLK	Pendimethalin			<0.05	ug/L				
MRL_CHK	Pendimethalin		0.1	0.0960	ug/L	96	(50-150)		
MS_201301170685	Pendimethalin	NR	2.0	1.96	ug/L	98	(70-130)		
LCS1	Pentachlorophenol		8.0	8.94	ug/L	112	(70-130)		
LCS2	Pentachlorophenol		8.0	8.91	ug/L	111	(70-130)	20	0.34
MBLK	Pentachlorophenol			<0.6	ug/L				
MRL_CHK	Pentachlorophenol		0.5	0.668	ug/L	134	(50-150)		
MS_201301170685	Pentachlorophenol	NR	8.0	9.31	ug/L	116	(70-130)		
LCS1	Permethrin (mixed isomers)		4.0	5.72	ug/L	**143**	(70-130)		
LCS2	Permethrin (mixed isomers)		4.0	4.88	ug/L	122	(70-130)	20	16
MBLK	Permethrin (mixed isomers)			<0.1	ug/L				
MRL_CHK	Permethrin (mixed isomers)		0.15	0.317	ug/L	**211**	(50-150)		
MS_201301170685	Permethrin (mixed isomers)	NR	4.0	3.99	ug/L	100	(70-130)		
LCS1	Perylene-d12 (S)			81.9	%	82	(70-130)		
LCS2	Perylene-d12 (S)			107	%	107	(70-130)		
MBLK	Perylene-d12 (S)			76.4	%	76	(70-130)		
MRL_CHK	Perylene-d12 (S)			76.6	%	77	(70-130)		
MS_201301170685	Perylene-d12 (S)			89.8	%	90	(70-130)		
LCS1	Phenanthrene		2.0	1.98	ug/L	99	(70-130)		
LCS2	Phenanthrene		2.0	2.02	ug/L	101	(70-130)	20	2.0
MBLK	Phenanthrene			<0.02	ug/L				
MRL_CHK	Phenanthrene		0.02	0.0270	ug/L	135	(50-150)		
MS_201301170685	Phenanthrene	NR	2.0	1.97	ug/L	99	(70-130)		
LCS1	Phenanthrene-d10 (I)			83.1	%	83	(50-150)		
LCS2	Phenanthrene-d10 (I)			98.4	%	98	(50-150)		

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QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MBLK	Phenanthrene-d10 (I)			99.4	%	99	(50-150)		
MRL_CHK	Phenanthrene-d10 (I)			115	%	115	(50-150)		
MS_201301170685	Phenanthrene-d10 (I)			117	%	117	(50-150)		
LCS1	Propachlor		2.0	2.41	ug/L	121	(70-130)		
LCS2	Propachlor		2.0	2.38	ug/L	119	(70-130)	20	1.3
MBLK	Propachlor			<0.025	ug/L				
MRL_CHK	Propachlor		0.05	0.0470	ug/L	94	(50-150)		
MS_201301170685	Propachlor	NR	2.0	2.41	ug/L	121	(70-130)		
LCS1	Pyrene		2.0	1.80	ug/L	90	(70-130)		
LCS2	Pyrene		2.0	1.85	ug/L	93	(70-130)	20	2.7
MBLK	Pyrene			<0.025	ug/L				
MRL_CHK	Pyrene		0.05	0.0480	ug/L	96	(50-150)		
MS_201301170685	Pyrene	NR	2.0	1.98	ug/L	99	(70-130)		
:S1	Simazine		2.0	2.22	ug/L	111	(70-130)		
LCS2	Simazine		2.0	2.16	ug/L	108	(70-130)	20	2.7
MBLK	Simazine			<0.025	ug/L				
MRL_CHK	Simazine		0.05	0.0630	ug/L	126	(50-150)		
MS_201301170685	Simazine	NR	2.0	2.30	ug/L	115	(70-130)		
LCS1	Terbacil		2.0	2.19	ug/L	109	(70-130)		
LCS2	Terbacil		2.0	1.94	ug/L	97	(70-130)	20	12
MBLK	Terbacil			<0.05	ug/L				
MRL_CHK	Terbacil		0.1	0.143	ug/L	143	(50-150)		
MS_201301170685	Terbacil	NR	2.0	2.01	ug/L	101	(70-130)		
LCS1	Terbuthylazine		2.0	2.36	ug/L	118	(70-130)		
LCS2	Terbuthylazine		2.0	2.21	ug/L	110	(70-130)	20	6.6
MBLK	Terbuthylazine			<0.2	ug/L				
MRL_CHK	Terbuthylazine		0.1	0.119	ug/L	119	(50-150)		
MS_201301170685	Terbuthylazine	NR	2.0	2.38	ug/L	119	(70-130)		
LCS1	Thiobencarb		2.0	2.18	ug/L	109	(70-130)		
LCS2	Thiobencarb		2.0	2.06	ug/L	103	(70-130)	20	5.2
MBLK	Thiobencarb			<0.1	ug/L				
MRL_CHK	Thiobencarb		0.1	0.106	ug/L	106	(50-150)		
MS_201301170685	Thiobencarb	NR	2.0	2.02	ug/L	101	(70-130)		
LCS1	trans-Nonachlor		2.0	1.81	ug/L	90	(70-130)		
LCS2	trans-Nonachlor		2.0	1.82	ug/L	91	(70-130)	20	0.55
MBLK	trans-Nonachlor			<0.025	ug/L				
MRL_CHK	trans-Nonachlor		0.05	0.0470	ug/L	94	(50-150)		
S_201301170685	trans-Nonachlor	NR	2.0	1.86	ug/L	93	(70-130)		

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QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
LCS1	Trifluralin		2.0	2.20	ug/L	110	(70-130)		
LCS2	Trifluralin		2.0	2.06	ug/L	103	(70-130)	20	6.6
MBLK	Trifluralin			<0.05	ug/L				
MRL_CHK	Trifluralin		0.1	0.105	ug/L	105	(50-150)		
MS_201301170685	Trifluralin	NR	2.0	2.31	ug/L	115	(70-130)		
LCS1	Triphenylphosphate (S)			199	%	**199**	(70-130)		
LCS2	Triphenylphosphate (S)			217	%	**217**	(70-130)		
MBLK	Triphenylphosphate (S)			133	%	**133**	(70-130)		
MRL_CHK	Triphenylphosphate (S)			144	%	**144**	(70-130)		
MS_201301170685	Triphenylphosphate (S)			106	%	107	(70-130)		
QC Ref# 690772 - Volatile Organics by EPA 624 by EPA 624						**Analysis Date: 01/28/2013**			
LCS1	1,1,1-Trichloroethane		20	19.6	ug/L	98	(79-121)		
LCS2	1,1,1-Trichloroethane		20	21.0	ug/L	105	(79-121)	20	6.9
MBLK	1,1,1-Trichloroethane			<0.25	ug/L				
MRL_CHK	1,1,1-Trichloroethane		0.5	0.520	ug/L	104	(50-150)		
MS_201301160507	1,1,1-Trichloroethane	ND	10	10.2	ug/L	102	(75-144)		
LCS1	1,1,2,2-Tetrachloroethane		20	21.5	ug/L	108	(77-126)		
LCS2	1,1,2,2-Tetrachloroethane		20	22.0	ug/L	110	(77-126)	20	2.3
MBLK	1,1,2,2-Tetrachloroethane			<0.25	ug/L				
MRL_CHK	1,1,2,2-Tetrachloroethane		0.5	0.500	ug/L	100	(50-150)		
MS_201301160507	1,1,2,2-Tetrachloroethane	ND	10	10.6	ug/L	106	(79-130)		
LCS1	1,1,2-Trichloroethane		20	21.4	ug/L	107	(79-116)		
LCS2	1,1,2-Trichloroethane		20	20.4	ug/L	102	(79-116)	20	4.8
MBLK	1,1,2-Trichloroethane			<0.25	ug/L				
MRL_CHK	1,1,2-Trichloroethane		0.5	0.450	ug/L	90	(50-150)		
MS_201301160507	1,1,2-Trichloroethane	ND	10	10.1	ug/L	101	(76-129)		
LCS1	1,1-Dichloroethane		20	18.0	ug/L	90	(77-129)		
LCS2	1,1-Dichloroethane		20	18.9	ug/L	95	(77-129)	20	4.9
MBLK	1,1-Dichloroethane			<0.25	ug/L				
MRL_CHK	1,1-Dichloroethane		0.5	0.510	ug/L	102	(50-150)		
MS_201301160507	1,1-Dichloroethane	ND	10	9.66	ug/L	97	(70-146)		
LCS1	1,1-Dichloroethylene		20	18.3	ug/L	92	(77-139)		
LCS2	1,1-Dichloroethylene		20	19.3	ug/L	97	(77-139)	20	5.3
MBLK	1,1-Dichloroethylene			<0.25	ug/L				
MRL_CHK	1,1-Dichloroethylene		0.5	0.500	ug/L	100	(50-150)		
MS_201301160507	1,1-Dichloroethylene	ND	10	10.6	ug/L	106	(75-134)		
LCS1	1,2-Dichloroethane		20	19.9	ug/L	100	(81-122)		
LCS2	1,2-Dichloroethane		20	20.3	ug/L	102	(81-122)	20	2.0

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MBLK	1,2-Dichloroethane			<0.25	ug/L				
MRL_CHK	1,2-Dichloroethane		0.5	0.470	ug/L	94	(50-150)		
MS_201301160507	1,2-Dichloroethane	ND	10	10.1	ug/L	101	(75-135)		
LCS1	1,2-Dichloroethane-d4 (S)			98.6	%	99	(70-130)		
LCS2	1,2-Dichloroethane-d4 (S)			102	%	102	(70-130)		
MBLK	1,2-Dichloroethane-d4 (S)			104	%	104	(70-130)		
MRL_CHK	1,2-Dichloroethane-d4 (S)			101	%	101	(70-130)		
MRLLW	1,2-Dichloroethane-d4 (S)			101	%	101	(70-130)		
MS_201301160507	1,2-Dichloroethane-d4 (S)			104	%	104	(70-130)		
LCS1	1,2-Dichloropropane		20	20.7	ug/L	104	(77-118)		
LCS2	1,2-Dichloropropane		20	20.6	ug/L	103	(77-118)	20	0.0
MBLK	1,2-Dichloropropane			<0.25	ug/L				
MRL_CHK	1,2-Dichloropropane		0.5	0.440	ug/L	88	(50-150)		
3_201301160507	1,2-Dichloropropane	ND	10	10.8	ug/L	108	(73-132)		
LCS1	2-Butanone (MEK)		200	242	ug/L	121	(65-122)		
LCS2	2-Butanone (MEK)		200	220	ug/L	110	(65-122)	20	9.5
MBLK	2-Butanone (MEK)			<2.5	ug/L				
MRL_CHK	2-Butanone (MEK)		5.0	5.32	ug/L	106	(50-150)		
MS_201301160507	2-Butanone (MEK)	ND	100	117	ug/L	117	(59-129)		
LCS1	2-Hexanone		200	219	ug/L	109	(72-128)		
LCS2	2-Hexanone		200	206	ug/L	103	(72-128)	20	6.1
MBLK	2-Hexanone			<2.5	ug/L				
MRL_CHK	2-Hexanone		5.0	4.42	ug/L	88	(50-150)		
MS_201301160507	2-Hexanone	ND	100	107	ug/L	107	(71-134)		
LCS1	4-Bromofluorobenzene (S)			101	%	101	(70-130)		
LCS2	4-Bromofluorobenzene (S)			105	%	105	(70-130)		
MBLK	4-Bromofluorobenzene (S)			97.8	%	98	(70-130)		
MRL_CHK	4-Bromofluorobenzene (S)			101	%	101	(70-130)		
MRLLW	4-Bromofluorobenzene (S)			101	%	101	(70-130)		
MS_201301160507	4-Bromofluorobenzene (S)			103	%	103	(70-130)		
LCS1	4-Methyl-2-Pentanone (MIBK)		200	224	ug/L	112	(76-130)		
LCS2	4-Methyl-2-Pentanone (MIBK)		200	212	ug/L	106	(76-130)	20	5.5
MBLK	4-Methyl-2-Pentanone (MIBK)			<2.5	ug/L				
MRL_CHK	4-Methyl-2-Pentanone (MIBK)		5.0	4.54	ug/L	91	(50-150)		
MS_201301160507	4-Methyl-2-Pentanone (MIBK)	ND	100	108	ug/L	108	(75-136)		
LCS1	Acetone		200	233	ug/L	117	(47-117)		
LCS2	Acetone		200	204	ug/L	102	(47-117)	20	13
3LK	Acetone			<5	ug/L				

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MRL_CHK	Acetone		5.0	14.1	ug/L	282	(50-150)		
MS_201301160507	Acetone	ND	100	125	ug/L	121	(37-119)		
MBLK	Acrolein (Screen)			<25	ug/L				
MBLK	Acrylonitrile (Screen)			<25	ug/L				
LCS1	Benzene		20	20.0	ug/L	100	(60-156)		
LCS2	Benzene		20	20.5	ug/L	102	(60-156)	20	2.5
MBLK	Benzene			<0.25	ug/L				
MRL_CHK	Benzene		0.5	0.480	ug/L	96	(50-150)		
MS_201301160507	Benzene	ND	10	10.6	ug/L	106	(76-133)		
LCS1	Bromodichloromethane		20	20.3	ug/L	102	(77-113)		
LCS2	Bromodichloromethane		20	20.9	ug/L	105	(77-113)	20	2.9
MBLK	Bromodichloromethane			<0.25	ug/L				
MRL_CHK	Bromodichloromethane		0.5	0.460	ug/L	92	(50-150)		
S_201301160507	Bromodichloromethane	ND	10	9.91	ug/L	99	(77-130)		
LCS1	Bromoform		20	20.1	ug/L	101	(54-134)		
LCS2	Bromoform		20	21.4	ug/L	107	(54-134)	20	6.3
MBLK	Bromoform			<0.25	ug/L				
MRL_CHK	Bromoform		0.5	0.660	ug/L	132	(50-150)		
MS_201301160507	Bromoform	ND	10	9.62	ug/L	96	(51-140)		
LCS1	Bromomethane (Methyl Bromide)		20	16.5	ug/L	82	(67-144)		
LCS2	Bromomethane (Methyl Bromide)		20	17.3	ug/L	86	(67-144)	20	4.7
MBLK	Bromomethane (Methyl Bromide)			<0.25	ug/L				
MRL_CHK	Bromomethane (Methyl Bromide)		0.5	0.510	ug/L	102	(50-150)		
MS_201301160507	Bromomethane (Methyl Bromide)	ND	10	10.3	ug/L	102	(55-147)		
LCS1	Carbon disulfide		20	18.5	ug/L	93	(63-131)		
LCS2	Carbon disulfide		20	19.8	ug/L	99	(63-131)	20	7.3
MBLK	Carbon disulfide			<0.25	ug/L				
MRL_CHK	Carbon disulfide		0.5	0.510	ug/L	102	(50-150)		
MS_201301160507	Carbon disulfide	ND	10	10.3	ug/L	103	(65-155)		
LCS1	Carbon Tetrachloride		20	20.0	ug/L	100	(73-127)		
LCS2	Carbon Tetrachloride		20	22.2	ug/L	111	(73-127)	20	10
MBLK	Carbon Tetrachloride			<0.25	ug/L				
MRL_CHK	Carbon Tetrachloride		0.5	0.380	ug/L	76	(50-150)		
MS_201301160507	Carbon Tetrachloride	ND	10	10.8	ug/L	108	(71-151)		
LCS1	Chlorobenzene		20	21.4	ug/L	107	(57-166)		
LCS2	Chlorobenzene		20	21.4	ug/L	107	(57-166)	20	0.0
MBLK	Chlorobenzene			<0.25	ug/L				
MRL_CHK	Chlorobenzene		0.5	0.480	ug/L	96	(50-150)		

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Laboratory QC
Report: 422385

City of Wichita Falls

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MS_201301160507	Chlorobenzene	ND	10	10.9	ug/L	109	(77-132)		
LCS1	Chlorodibromomethane		20	19.7	ug/L	98	(77-113)		
LCS2	Chlorodibromomethane		20	20.0	ug/L	100	(77-113)	20	1.5
MBLK	Chlorodibromomethane			<0.25	ug/L				
MRL_CHK	Chlorodibromomethane		0.5	0.610	ug/L	122	(50-150)		
MS_201301160507	Chlorodibromomethane	ND	10	10.0	ug/L	100	(68-136)		
LCS1	Chloroethane		20	16.8	ug/L	84	(70-133)		
LCS2	Chloroethane		20	17.6	ug/L	88	(70-133)	20	4.7
MBLK	Chloroethane			<0.25	ug/L				
MRL_CHK	Chloroethane		0.5	0.510	ug/L	102	(50-150)		
MS_201301160507	Chloroethane	ND	10	10.3	ug/L	103	(45-180)		
LCS1	Chloroform (Trichloromethane)		20	19.6	ug/L	98	(78-117)		
LCS2	Chloroform (Trichloromethane)		20	20.6	ug/L	103	(78-117)	20	5.0
BLK	Chloroform (Trichloromethane)			<0.25	ug/L				
MRL_CHK	Chloroform (Trichloromethane)		0.5	0.480	ug/L	96	(50-150)		
MS_201301160507	Chloroform (Trichloromethane)	ND	10	10.5	ug/L	105	(76-133)		
LCS1	Chloromethane(Methyl Chloride)		20	16.6	ug/L	83	(78-134)		
LCS2	Chloromethane(Methyl Chloride)		20	18.0	ug/L	90	(78-134)	20	8.1
MBLK	Chloromethane(Methyl Chloride)			<0.25	ug/L				
MRL_CHK	Chloromethane(Methyl Chloride)		0.5	0.640	ug/L	128	(50-150)		
MS_201301160507	Chloromethane(Methyl Chloride)	ND	10	10.7	ug/L	107	(58-143)		
LCS1	cis-1,2-Dichloroethylene		20	19.8	ug/L	99	(80-114)		
LCS2	cis-1,2-Dichloroethylene		20	20.2	ug/L	101	(80-114)	20	2.0
MBLK	cis-1,2-Dichloroethylene			<0.25	ug/L				
MRL_CHK	cis-1,2-Dichloroethylene		0.5	0.570	ug/L	114	(50-150)		
MS_201301160507	cis-1,2-Dichloroethylene	ND	10	10.5	ug/L	105	(78-133)		
LCS1	cis-1,3-Dichloropropene		20	21.0	ug/L	105	(68-123)		
LCS2	cis-1,3-Dichloropropene		20	20.3	ug/L	102	(68-123)	20	3.4
MBLK	cis-1,3-Dichloropropene			<0.25	ug/L				
MRL_CHK	cis-1,3-Dichloropropene		0.5	0.390	ug/L	78	(50-150)		
MS_201301160507	cis-1,3-Dichloropropene	ND	10	10.2	ug/L	102	(65-120)		
LCS1	Dichlorodifluoromethane		20	19.2	ug/L	96	(46-165)		
LCS2	Dichlorodifluoromethane		20	19.8	ug/L	99	(46-165)	20	3.1
MBLK	Dichlorodifluoromethane			<0.25	ug/L				
MRL_CHK	Dichlorodifluoromethane		0.5	0.460	ug/L	92	(50-150)		
MS_201301160507	Dichlorodifluoromethane	ND	10	12.7	ug/L	127	(30-169)		
LCS1	Dichloromethane		20	18.3	ug/L	91	(77-121)		
LCS2	Dichloromethane		20	19.2	ug/L	96	(77-121)	20	4.8

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QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MBLK	Dichloromethane			<0.25	ug/L				
MRL_CHK	Dichloromethane		0.5	0.530	ug/L	106	(50-150)		
MS_201301160507	Dichloromethane	ND	10	9.73	ug/L	97	(75-132)		
LCS1	Ethyl benzene		20	21.2	ug/L	106	(79-122)		
LCS2	Ethyl benzene		20	21.9	ug/L	110	(79-122)	20	3.3
MBLK	Ethyl benzene			<0.25	ug/L				
MRL_CHK	Ethyl benzene		0.5	0.450	ug/L	90	(50-150)		
MS_201301160507	Ethyl benzene	ND	10	11.3	ug/L	113	(68-146)		
LCS1	m,p-Xylenes		40	41.2	ug/L	103	(82-123)		
LCS2	m,p-Xylenes		40	41.9	ug/L	105	(82-123)	20	1.7
MBLK	m,p-Xylenes			<0.25	ug/L				
MRL_CHK	m,p-Xylenes		1.0	0.870	ug/L	87	(50-150)		
MRLLW	m,p-Xylenes		0.5	0.410	ug/L	82	(50-150)		
'S_201301160507	m,p-Xylenes	ND	20	20.7	ug/L	103	(79-142)		
_CS1	m-Dichlorobenzene (1,3-DCB)		20	21.4	ug/L	107	(76-124)		
LCS2	m-Dichlorobenzene (1,3-DCB)		20	22.1	ug/L	110	(76-124)	20	3.2
MBLK	m-Dichlorobenzene (1,3-DCB)			<0.25	ug/L				
MRL_CHK	m-Dichlorobenzene (1,3-DCB)		0.5	0.470	ug/L	94	(50-150)		
MS_201301160507	m-Dichlorobenzene (1,3-DCB)	ND	10	11.0	ug/L	110	(76-139)		
LCS1	Methyl Tert-butyl ether (MTBE)		20	18.1	ug/L	91	(70-130)		
LCS2	Methyl Tert-butyl ether (MTBE)		20	19.2	ug/L	96	(70-130)	20	5.9
MBLK	Methyl Tert-butyl ether (MTBE)			<0.25	ug/L				
MRL_CHK	Methyl Tert-butyl ether (MTBE)		0.5	0.520	ug/L	104	(50-150)		
MS_201301160507	Methyl Tert-butyl ether (MTBE)	ND	10	10.2	ug/L	102	(70-130)		
LCS1	o-Dichlorobenzene (1,2-DCB)		20	20.7	ug/L	103	(79-118)		
LCS2	o-Dichlorobenzene (1,2-DCB)		20	21.1	ug/L	105	(79-118)	20	1.9
MBLK	o-Dichlorobenzene (1,2-DCB)			<0.25	ug/L				
MRL_CHK	o-Dichlorobenzene (1,2-DCB)		0.5	0.500	ug/L	100	(50-150)		
MS_201301160507	o-Dichlorobenzene (1,2-DCB)	ND	10	10.6	ug/L	106	(80-125)		
LCS1	o-Xylene		20	19.4	ug/L	97	(79-120)		
LCS2	o-Xylene		20	20.3	ug/L	101	(79-120)	20	4.5
MBLK	o-Xylene			<0.25	ug/L				
MRL_CHK	o-Xylene		0.5	0.380	ug/L	76	(50-150)		
MS_201301160507	o-Xylene	ND	10	10.3	ug/L	103	(91-123)		
LCS1	p-Dichlorobenzene (1,4-DCB)		20	21.3	ug/L	106	(74-130)		
LCS2	p-Dichlorobenzene (1,4-DCB)		20	22.1	ug/L	111	(74-130)	20	3.7
MBLK	p-Dichlorobenzene (1,4-DCB)			<0.25	ug/L				
1RL_CHK	p-Dichlorobenzene (1,4-DCB)		0.5	0.420	ug/L	84	(50-150)		

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QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MS_201301160507	p-Dichlorobenzene (1,4-DCB)	ND	10	10.6	ug/L	106	(71-145)		
LCS1	Styrene		20	18.5	ug/L	92	(77-125)		
LCS2	Styrene		20	19.1	ug/L	96	(77-125)	20	3.2
MBLK	Styrene			<0.25	ug/L				
MRL_CHK	Styrene		0.5	0.560	ug/L	112	(50-150)		
MS_201301160507	Styrene	ND	10	5.89	ug/L	**59**	(66-142)		
LCS1	Tetrachloroethylene (PCE)		20	22.3	ug/L	111	(79-122)		
LCS2	Tetrachloroethylene (PCE)		20	21.8	ug/L	109	(79-122)	20	2.3
MBLK	Tetrachloroethylene (PCE)			<0.25	ug/L				
MRL_CHK	Tetrachloroethylene (PCE)		0.5	0.530	ug/L	106	(50-150)		
MS_201301160507	Tetrachloroethylene (PCE)	ND	10	11.7	ug/L	117	(72-146)		
LCS1	Tetrahydrofuran		200	226	ug/L	113	(67-130)		
LCS2	Tetrahydrofuran		200	217	ug/L	108	(67-130)	20	4.1
BLK	Tetrahydrofuran			<5.0	ug/L				
MRL_CHK	Tetrahydrofuran		5.0	4.85	ug/L	97	(50-150)		
MS_201301160507	Tetrahydrofuran	ND	100	116	ug/L	116	(68-134)		
LCS1	Toluene		20	22.0	ug/L	110	(80-118)		
LCS2	Toluene		20	22.2	ug/L	111	(80-118)	20	0.91
MBLK	Toluene			<0.25	ug/L				
MRL_CHK	Toluene		0.5	0.480	ug/L	96	(50-150)		
MS_201301160507	Toluene	ND	10	11.3	ug/L	113	(66-143)		
LCS1	Toluene-d8 (S)			106	%	106	(70-130)		
LCS2	Toluene-d8 (S)			103	%	103	(70-130)		
MBLK	Toluene-d8 (S)			99.2	%	99	(70-130)		
MRL_CHK	Toluene-d8 (S)			99.0	%	99	(70-130)		
MRLLW	Toluene-d8 (S)			97.0	%	97	(70-130)		
MS_201301160507	Toluene-d8 (S)			108	%	108	(70-130)		
LCS1	trans-1,2-Dichloroethylene		20	17.2	ug/L	86	(82-122)		
LCS2	trans-1,2-Dichloroethylene		20	18.4	ug/L	92	(82-122)	20	6.2
MBLK	trans-1,2-Dichloroethylene			<0.25	ug/L				
MRL_CHK	trans-1,2-Dichloroethylene		0.5	0.520	ug/L	104	(50-150)		
MS_201301160507	trans-1,2-Dichloroethylene	ND	10	9.67	ug/L	97	(74-138)		
LCS1	trans-1,3-Dichloropropene		20	22.7	ug/L	113	(64-126)		
LCS2	trans-1,3-Dichloropropene		20	21.5	ug/L	107	(64-126)	20	5.4
MBLK	trans-1,3-Dichloropropene			<0.25	ug/L				
MRL_CHK	trans-1,3-Dichloropropene		0.5	0.380	ug/L	76	(50-150)		
MS_201301160507	trans-1,3-Dichloropropene	ND	10	10.4	ug/L	104	(61-127)		
CS1	Trichloroethylene (TCE)		20	20.7	ug/L	103	(78-119)		

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QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
LCS2	Trichloroethylene (TCE)		20	20.9	ug/L	105	(78-119)	20	0.96
MBLK	Trichloroethylene (TCE)			<0.25	ug/L				
MRL_CHK	Trichloroethylene (TCE)		0.5	0.470	ug/L	94	(50-150)		
MS_201301160507	Trichloroethylene (TCE)	ND	10	10.6	ug/L	106	(71-139)		
LCS1	Trichlorofluoromethane		20	17.6	ug/L	88	(70-145)		
LCS2	Trichlorofluoromethane		20	18.2	ug/L	91	(70-145)	20	3.4
MBLK	Trichlorofluoromethane			<0.25	ug/L				
MRL_CHK	Trichlorofluoromethane		0.5	0.480	ug/L	96	(50-150)		
MS_201301160507	Trichlorofluoromethane	ND	10	10.9	ug/L	109	(63-161)		
LCS1	Vinyl Acetate		100	110	ug/L	110	(72-136)		
LCS2	Vinyl Acetate		100	109	ug/L	109	(72-136)	20	0.91
MBLK	Vinyl Acetate			<0.25	ug/L				
MRL_CHK	Vinyl Acetate		2.5	2.03	ug/L	81	(50-150)		
S_201301160507	Vinyl Acetate	ND	50	50.7	ug/L	101	(55-146)		
LCS1	Vinyl chloride (VC)		20	16.4	ug/L	82	(66-140)		
LCS2	Vinyl chloride (VC)		20	17.6	ug/L	88	(66-140)	20	7.6
MBLK	Vinyl chloride (VC)			<0.25	ug/L				
MRL_CHK	Vinyl chloride (VC)		0.5	0.490	ug/L	98	(50-150)		
MRLLW	Vinyl chloride (VC)		0.3	0.260	ug/L	87	(50-150)		
MS_201301160507	Vinyl chloride (VC)	ND	10	10.6	ug/L	106	(56-159)		
QC Ref# 692805 - Volatile Organics by GCMS by EPA 8260						**Analysis Date: 02/05/2013**			
LCS1	1,2-Dichloroethane-d4 (S)			98.6	%	99	(70-130)		
LCS2	1,2-Dichloroethane-d4 (S)			103	%	103	(70-130)		
MBLK	1,2-Dichloroethane-d4 (S)			103	%	103	(70-130)		
MRL_CHK	1,2-Dichloroethane-d4 (S)			101	%	101	(70-130)		
MS_201302180014	1,2-Dichloroethane-d4 (S)			97.6	%	98	(70-130)		
MSD_201302180014	1,2-Dichloroethane-d4 (S)			99.6	%	100	(70-130)		
LCS1	2-Chloroethylvinylether		5.0	5.31	ug/L	106	(70-130)		
LCS2	2-Chloroethylvinylether		5.0	5.65	ug/L	113	(70-130)	20	6.2
MBLK	2-Chloroethylvinylether			<0.5	ug/L				
MRL_CHK	2-Chloroethylvinylether		0.5	0.590	ug/L	118	(50-150)		
MS_201302180014	2-Chloroethylvinylether	ND	10	10.8	ug/L	108	(70-130)		
MSD_201302180014	2-Chloroethylvinylether	ND	10	12.4	ug/L	124	(70-130)	20	14
LCS1	4-Bromofluorobenzene (S)			105	%	105	(70-130)		
LCS2	4-Bromofluorobenzene (S)			106	%	106	(70-130)		
MBLK	4-Bromofluorobenzene (S)			109	%	109	(70-130)		
MRL_CHK	4-Bromofluorobenzene (S)			104	%	104	(70-130)		
S_201302180014	4-Bromofluorobenzene (S)			106	%	106	(70-130)		

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MSD_201302180014	4-Bromofluorobenzene (S)			99.6	%	100	(70-130)		
LCS1	Toluene-d8 (S)			97.0	%	97	(70-130)		
LCS2	Toluene-d8 (S)			98.0	%	98	(70-130)		
MBLK	Toluene-d8 (S)			97.8	%	98	(70-130)		
MRL_CHK	Toluene-d8 (S)			97.8	%	98	(70-130)		
MS_201302180014	Toluene-d8 (S)			98.0	%	98	(70-130)		
MSD_201302180014	Toluene-d8 (S)			102	%	102	(70-130)		
QC Ref# 693891 - EPA 525 N/P Pesticides by EPA 525						**Analysis Date: 01/23/2013**			
LCS1	1,3-Dimethyl-2-nitrobenzene (S)			101	%	101	(70-130)		
LCS2	1,3-Dimethyl-2-nitrobenzene (S)			100	%	100	(70-130)		
MBLK	1,3-Dimethyl-2-nitrobenzene (S)			92.8	%	93	(70-130)		
MRL_CHK	1,3-Dimethyl-2-nitrobenzene (S)			95.5	%	96	(70-130)		
LCS1	acenaphthene-d10 (I)			95.8	%	96	(50-150)		
LCS2	acenaphthene-d10 (I)			92.7	%	93	(50-150)		
MBLK	acenaphthene-d10 (I)			94.8	%	95	(50-150)		
MRL_CHK	acenaphthene-d10 (I)			95.6	%	96	(50-150)		
LCS1	chrysene-d12 (I)			95.8	%	96	(50-150)		
LCS2	chrysene-d12 (I)			95.7	%	96	(50-150)		
MBLK	chrysene-d12 (I)			80.5	%	81	(50-150)		
MRL_CHK	chrysene-d12 (I)			87.1	%	87	(50-150)		
LCS1	Guthion		2.0	2.86	ug/L	**143**	(70-130)		
LCS2	Guthion		2.0	2.70	ug/L	**135**	(70-130)	20	5.8
MBLK	Guthion			<0.1	ug/L				
MRL_CHK	Guthion		0.1	0	ug/L	**0**	(50-150)		
LCS1	Mirex		2.0	2.18	ug/L	109	(70-130)		
LCS2	Mirex		2.0	2.20	ug/L	110	(70-130)	20	0.46
MBLK	Mirex			<0.1	ug/L				
MRL_CHK	Mirex		0.1	0.116	ug/L	116	(50-150)		
LCS1	perylene-d12 (S)			74.4	%	74	(70-130)		
LCS2	perylene-d12 (S)			70.9	%	71	(70-130)		
MBLK	perylene-d12 (S)			76.3	%	76	(70-130)		
MRL_CHK	perylene-d12 (S)			82.6	%	83	(70-130)		
LCS1	phenanthrene-d10 (I)			106	%	106	(50-150)		
LCS2	phenanthrene-d10 (I)			102	%	102	(50-150)		
MBLK	phenanthrene-d10 (I)			104	%	104	(50-150)		
MRL_CHK	phenanthrene-d10 (I)			104	%	104	(50-150)		
LCS1	Triphenylphosphate (S)			124	%	124	(70-130)		

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Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.
Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.
RPD not calculated for LCS2 when different a concentration than LCS1 is used.
RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level).
(S) - Indicates surrogate compound.
(I) - Indicates internal standard compound.

eurofins | Eaton Analytical
formerly MWH Laboratories

750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
Tel: (626) 386-1100
Fax: (626) 386-1101
1 800 566 LABS (1 800 566 5227)

Laboratory QC
Report: 422385

City of Wichita Falls

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
LCS2	Triphenylphosphate (S)			117	%	117	(70-130)		
MBLK	Triphenylphosphate (S)			138	%	**138**	(70-130)		
MRL_CHK	Triphenylphosphate (S)			158	%	**158**	(70-130)		

Spike recovery is already corrected for native results.
Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.
Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.
RPD not calculated for LCS2 when different a concentration than LCS1 is used.
RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level).
(S) - Indicates surrogate compound.
(I) - Indicates internal standard compound.

LABS

908 North Temperance Ave. ∇ Clovis, CA 93611 ∇ Phone 559-275-2175 ∇ Fax 559-275-4422

Certification Number: CA1312
NELAP Certification number: 05233CA
Texas Certificate Number: T104704242-10-3

February 12, 2013

Eurofins Eaton Analytical
750 Royal Oaks Drive, Suite 100
Monrovia, California 91016

Attn: Jackie Contreras

Subject: Report of Data: Case 69763

Results in this report apply to the sample analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Dear Ms. Contreras,

One water sample for project " 422385" was received on January 19, 2013, in good condition. Written results are being provided on this February 12, 2013, for the requested analysis. All holding times were met.

For the EPA 508 analysis, the sample was extracted and analyzed according to the method. In the lab control spike, Aldrin and Heptachlor recovered below their lower control limit; and Chlorothalonil recovered above the upper control limit at 118%. The LCS was re-analyzed with similar results. There was no volume remaining to re-extract. All other spike recoveries were acceptable.

No other unusual problem or complication was encountered with this sample set.

If you have any questions or require further information, please contact us at your convenience. Thank you for choosing APPL, Inc.

I certify that this data package complies with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. These test results meet all requirements of NELAC. Release of the hard copy has been authorized by the Laboratory Manager or her designee, as verified by the following signature.

Sharon Dehmlow, Laboratory Director
APPL, Inc.

SD/cm
Enclosure
cc: File

Number of pages in this report: ____

EPA 508 Specialty OCL & PCBs

Eurofins Eaton Analytical
750 Royal Oaks Dr., Ste 100
Monrovia, CA 91016

Attn: Jackie Contreras
Project: 422385
Sample ID: 201301180174
Sample Collection Date: 01/16/13

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

ARF: 69763
APPL ID: AY74287
QCG: #508-130123A-174635

Method	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
EPA 508	2,4-DDD	Not detected	0.05	0.005	ug/L	01/23/13	02/01/13
EPA 508	2,4-DDE	Not detected	0.05	0.005	ug/L	01/23/13	02/01/13
EPA 508	2,4-DDT	Not detected	0.02	0.003	ug/L	01/23/13	02/01/13
EPA 508	4,4'-DDE	Not detected	0.01	0.002	ug/L	01/23/13	02/01/13
EPA 508	4,4'-DDT	Not detected	0.02	0.002	ug/L	01/23/13	02/01/13
EPA 508	4,4'-TDE/DDD	Not detected	0.02	0.002	ug/L	01/23/13	02/01/13
EPA 508	A-BHC	Not detected	0.05	0.003	ug/L	01/23/13	02/01/13
EPA 508	ALACHLOR	Not detected	0.10	0.006	ug/L	01/23/13	02/01/13
EPA 508	ALDRIN	Not detected	0.05	0.009	ug/L	01/23/13	02/01/13
EPA 508	B-BHC	Not detected	0.05	0.005	ug/L	01/23/13	02/01/13
EPA 508	BENEFIN	Not detected	0.10	0.008	ug/L	01/23/13	02/01/13
EPA 508	CAPTAN	Not detected	0.10	0.006	ug/L	01/23/13	02/01/13
EPA 508	CARBOPHENOTHION	Not detected	0.05	0.019	ug/L	01/23/13	02/01/13
EPA 508	CHLORDANE	Not detected	0.05	0.006	ug/L	01/23/13	02/01/13
EPA 508	CHLOROTHALONIL	Not detected	0.05	0.009	ug/L	01/23/13	02/01/13
EPA 508	D-BHC	Not detected	0.05	0.005	ug/L	01/23/13	02/01/13
EPA 508	DICOFOL	Not detected	0.10	0.011	ug/L	01/23/13	02/01/13
EPA 508	DIELDRIN	Not detected	0.02	0.004	ug/L	01/23/13	02/01/13
EPA 508	ENDOSULFAN I	Not detected	0.02	0.005	ug/L	01/23/13	02/01/13
EPA 508	ENDOSULFAN II	Not detected	0.01	0.007	ug/L	01/23/13	02/01/13
EPA 508	ENDOSULFAN SULFATE	Not detected	0.05	0.005	ug/L	01/23/13	02/01/13
EPA 508	ENDRIN	Not detected	0.05	0.004	ug/L	01/23/13	02/01/13
EPA 508	ENDRIN ALDEHYDE	Not detected	0.05	0.009	ug/L	01/23/13	02/01/13
EPA 508	ENDRIN KETONE	Not detected	0.05	0.006	ug/L	01/23/13	02/01/13
EPA 508	G-BHC (LINDANE)	Not detected	0.05	0.004	ug/L	01/23/13	02/01/13
EPA 508	HEPTACHLOR	Not detected	0.01	0.008	ug/L	01/23/13	02/01/13
EPA 508	HEPTACHLOR EPOXIDE	Not detected	0.01	0.004	ug/L	01/23/13	02/01/13
EPA 508	HEXACHLOROBENZENE	Not detected	0.05	0.012	ug/L	01/23/13	02/01/13
EPA 508	METHOXYCHLOR	Not detected	0.05	0.018	ug/L	01/23/13	02/01/13
EPA 508	NITROFEN	Not detected	0.05	0.017	ug/L	01/23/13	02/01/13
EPA 508	OXYFLUORPHEN	Not detected	0.05	0.008	ug/L	01/23/13	02/01/13
EPA 508	PCB-1016	Not detected	0.50	0.183	ug/L	01/23/13	02/01/13
EPA 508	PCB-1221	Not detected	0.50	0.248	ug/L	01/23/13	02/01/13
EPA 508	PCB-1232	Not detected	0.50	0.189	ug/L	01/23/13	02/01/13
EPA 508	PCB-1242	Not detected	0.50	0.162	ug/L	01/23/13	02/01/13
EPA 508	PCB-1248	Not detected	0.50	0.142	ug/L	01/23/13	02/01/13
EPA 508	PCB-1254	Not detected	0.50	0.086	ug/L	01/23/13	02/01/13

Quant Method: OCLV0130.M
Run #: 0130131
Instrument: Ethel
Sequence: 130130
Dilution Factor: 1
Initials: MA

Printed: 02/05/13 12:33:40 PM
APPL-F1-SC-NoMC-REG MDLs

EPA 508 Specialty OCL & PCBs

Eurofins Eaton Analytical
750 Royal Oaks Dr., Ste 100
Monrovia, CA 91016

Attn: Jackie Contreras
Project: 422385
Sample ID: 201301180174
Sample Collection Date: 01/16/13

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

ARF: 69763
APPL ID: AY74287
QCG: #508-130123A-174635

Method	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
EPA 508	PCB-1260	Not detected	0.50	0.119	ug/L	01/23/13	02/01/13
EPA 508	PCNB	Not detected	0.05	0.005	ug/L	01/23/13	02/01/13
EPA 508	PROPACHLOR	Not detected	0.10	0.009	ug/L	01/23/13	02/01/13
EPA 508	TOXAPHENE	Not detected	0.50	0.103	ug/L	01/23/13	02/01/13
EPA 508	SURROGATE: DECACHLOROBIPHEN	71.1	70-130		%	01/23/13	02/01/13

Quant Method: OCLV0130.M
Run #: 0130131
Instrument: Ethel
Sequence: 130130
Dilution Factor: 1
Initials: MA

Printed: 02/05/13 12:33:40 PM
APPL-F1-SC-NoMC-REG MDLs

Method Blank

EPA 508 Specialty OCL & PCBs

Blank Name/QCG: **130123W-74287 - 174635**
Batch ID: #508-130123A

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Sample Type	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
BLANK	2,4-DDD	Not detected	0.05	0.005	ug/L	01/23/13	02/01/13
BLANK	2,4-DDE	Not detected	0.05	0.005	ug/L	01/23/13	02/01/13
BLANK	2,4-DDT	Not detected	0.02	0.003	ug/L	01/23/13	02/01/13
BLANK	4,4'-DDE	Not detected	0.01	0.002	ug/L	01/23/13	02/01/13
BLANK	4,4'-DDT	Not detected	0.02	0.002	ug/L	01/23/13	02/01/13
BLANK	4,4'-TDE/DDD	Not detected	0.02	0.002	ug/L	01/23/13	02/01/13
BLANK	A-BHC	Not detected	0.05	0.003	ug/L	01/23/13	02/01/13
BLANK	ALACHLOR	Not detected	0.10	0.006	ug/L	01/23/13	02/01/13
BLANK	ALDRIN	Not detected	0.05	0.009	ug/L	01/23/13	02/01/13
BLANK	B-BHC	Not detected	0.05	0.005	ug/L	01/23/13	02/01/13
BLANK	BENEFIN	Not detected	0.10	0.008	ug/L	01/23/13	02/01/13
BLANK	CAPTAN	Not detected	0.10	0.006	ug/L	01/23/13	02/01/13
BLANK	CARBOPHENOTHION	Not detected	0.05	0.019	ug/L	01/23/13	02/01/13
BLANK	CHLORDANE	Not detected	0.05	0.006	ug/L	01/23/13	02/01/13
BLANK	CHLOROTHALONIL	Not detected	0.05	0.009	ug/L	01/23/13	02/01/13
BLANK	D-BHC	Not detected	0.05	0.005	ug/L	01/23/13	02/01/13
BLANK	DICOFOL	Not detected	0.10	0.011	ug/L	01/23/13	02/01/13
BLANK	DIELDRIN	Not detected	0.02	0.004	ug/L	01/23/13	02/01/13
BLANK	ENDOSULFAN I	Not detected	0.02	0.005	ug/L	01/23/13	02/01/13
BLANK	ENDOSULFAN II	Not detected	0.01	0.007	ug/L	01/23/13	02/01/13
BLANK	ENDOSULFAN SULFATE	Not detected	0.05	0.005	ug/L	01/23/13	02/01/13
BLANK	ENDRIN	Not detected	0.05	0.004	ug/L	01/23/13	02/01/13
BLANK	ENDRIN ALDEHYDE	Not detected	0.05	0.009	ug/L	01/23/13	02/01/13
BLANK	ENDRIN KETONE	Not detected	0.05	0.006	ug/L	01/23/13	02/01/13
BLANK	G-BHC (LINDANE)	Not detected	0.05	0.004	ug/L	01/23/13	02/01/13
BLANK	HEPTACHLOR	Not detected	0.01	0.008	ug/L	01/23/13	02/01/13
BLANK	HEPTACHLOR EPOXIDE	Not detected	0.01	0.004	ug/L	01/23/13	02/01/13
BLANK	HEXACHLOROBENZENE	Not detected	0.05	0.012	ug/L	01/23/13	02/01/13
BLANK	METHOXYCHLOR	Not detected	0.05	0.018	ug/L	01/23/13	02/01/13
BLANK	NITROFEN	Not detected	0.05	0.017	ug/L	01/23/13	02/01/13
BLANK	OXYFLUORPHEN	Not detected	0.05	0.008	ug/L	01/23/13	02/01/13
BLANK	PCB-1016	Not detected	0.50	0.183	ug/L	01/23/13	02/01/13
BLANK	PCB-1221	Not detected	0.50	0.248	ug/L	01/23/13	02/01/13
BLANK	PCB-1232	Not detected	0.50	0.189	ug/L	01/23/13	02/01/13

Quant Method: OCLV0130.M
Run #: 0130122
Instrument: Ethel
Sequence: 130130
Initials: MA

GC SC-Blank-REG MDLs
Printed: 02/05/13 12:33:39 PM

Method Blank

EPA 508 Specialty OCL & PCBs

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **130123W-74287 - 174635**
Batch ID: #508-130123A

Sample Type	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
BLANK	PCB-1242	Not detected	0.50	0.162	ug/L	01/23/13	02/01/13
BLANK	PCB-1248	Not detected	0.50	0.142	ug/L	01/23/13	02/01/13
BLANK	PCB-1254	Not detected	0.50	0.086	ug/L	01/23/13	02/01/13
BLANK	PCB-1260	Not detected	0.50	0.119	ug/L	01/23/13	02/01/13
BLANK	PCNB	Not detected	0.05	0.005	ug/L	01/23/13	02/01/13
BLANK	PROPACHLOR	Not detected	0.10	0.009	ug/L	01/23/13	02/01/13
BLANK	TOXAPHENE	Not detected	0.50	0.103	ug/L	01/23/13	02/01/13
BLANK	SURROGATE: DECACHLOROBIPHEN	75.5	70-130		%	01/23/13	02/01/13

Quant Method: OCLV0130.M
Run #: 0130122
Instrument: Ethel
Sequence: 130130
Initials: MA

GC SC-Blank-REG MDLs
Printed: 02/05/13 12:33:39 PM

Laboratory Control Spike Recovery

EPA 508 Specialty OCL & PCBs

APPL ID: **130123W-74287 LCS - 174635**
Batch ID: #508-130123A

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Level ug/L	SPK Result ug/L	SPK % Recovery	Recovery Limits
2,4-DDD	0.500	0.581	116	36-128
2,4-DDE	0.500	0.545	109	15-136
2,4-DDT	0.500	0.535	107	41-127
4,4'-DDE	0.300	0.253	84.3	69-129
4,4'-DDT	0.300	0.261	87.0	78-146
4,4'-TDE/DDD	0.300	0.264	88.0	75-139
A-BHC	0.300	0.275	91.7	64-120
ALACHLOR	0.500	0.575	115	51-120
ALDRIN	0.300	0.150	50.0 #	60-112
B-BHC	0.300	0.290	96.7	67-124
BENEFIN	0.500	0.538	108	17-121
CAPTAN	0.500	0.655	131	17-149
CARBOPHENOTHION	0.500	0.597	119	41-131
CHLORDANE	0.600	0.465	77.5	69-129
CHLOROTHALONIL	0.500	0.688	138 #	64-118
D-BHC	0.300	0.301	100	25-105
DICOFOL	0.500	0.576	115	13-140
DIELDRIN	0.300	0.259	86.3	61-113
ENDOSULFAN I	0.300	0.248	82.7	61-113
ENDOSULFAN II	0.300	0.250	83.3	64-120
ENDOSULFAN SULFATE	0.300	0.293	97.7	74-130
ENDRIN	0.300	0.201	67.0	62-114
ENDRIN ALDEHYDE	0.300	0.263	87.7	62-114
ENDRIN KETONE	0.300	0.261	87.0	55-135
G-BHC (LINDANE)	0.300	0.279	93.0	62-116
HEPTACHLOR	0.300	0.184	61.3 #	69-127
HEPTACHLOR EPOXIDE	0.300	0.255	85.0	61-113
HEXACHLOROBENZENE	0.500	0.453	90.6	69-129
METHOXYCHLOR	0.300	0.262	87.3	74-137
NITROFEN	0.500	0.535	107	45-131
OXYFLUORPHEN	0.500	0.646	129	70-130

= Recovery is outside QC limits.

Comments: _____

Primary	SPK
Quant Method :	OCLV0130.M
Extraction Date :	01/23/13
Analysis Date :	02/01/13
Instrument :	Ethel
Run :	0130123
Initials :	MA

Printed: 02/05/13 12:59:48 PM
APPL Standard LCS

Laboratory Control Spike Recovery
EPA 508 Specialty OCL & PCBs

APPL ID: **130123W-74287 LCS - 174635**
Batch ID: #508-130123A

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Level ug/L	SPK Result ug/L	SPK % Recovery	Recovery Limits
PCB-1016	1.0	0.975	97.5	39-107
PCB-1260	1.0	0.854	85.4	49-112
PCNB	0.500	0.609	122	29-123
PROPACHLOR	0.500	0.629	126	72-134
TOXAPHENE	1.50	1.56	104	47-124
SURROGATE: DECACHLOROBIPHENYL	0.750	0.586	78.1	70-130

= Recovery is outside QC limits.

Comments:

Primary	SPK
Quant Method :	OCLV0130.M
Extraction Date :	01/23/13
Analysis Date :	02/01/13
Instrument :	Ethel
Run :	0130123
Initials :	MA

Printed: 02/05/13 12:59:48 PM
APPL Standard LCS

eurofins | Eaton Analytical
formerly MWH Laboratories

Ship To:
908 N. Temperance
Appl, Inc.

Clovis, CA 93611

Phone: 559-275-2175 Fax: 559-275-4422

Submittal Form & Purchase Order 99-21735 69763

Date: 1/18/2013

*REPORTING REQUIRMENTS: ***Do Not Combine Reports with any other samples submitted under different Folder Numbers!***
Report & Invoice must have the Folder# **422385** Sub PO# **99-21735** and Job # **1000014**

Report all quality control data according to Method. Include dates analyzed. Date extracted (if extracted) and Method reference on the report.
Results must have Complete data & QC with Approval Signature.

Reports: Jackie Contreras Sub-Contracting Administrator
EMAIL TO: us20_subcontract@eurofinsus.com
Eurofins Eaton Analytical 750 Royal Oaks Drive, Suite 100, Monrovia, CA 91016
Phone (626) 386-1165 Fax (626) 386-1122
Invoices to: Eurofins Eaton Analytical
Accounts Payable PO Box 12425, Lancaster, PA 17605

Provide in each Report the Specified State Certification # & Exp Date for requested tests + matrix.

Samples from: TEXAS

Folder #:	Report Due:	Sub PO #:
422385	02/01/2013	99-21735

JLS	Use Lab Order # for ID	Client Sample ID for reference only	Analysis Requested	Sample Date & Time	Matrix	PWS Systemcode	PWSID
EPA 508	201301180174 @508EDD plus Oxyfluorphen	EFFLUENT	@508EDD plus Oxyfluorphen	01/16/13 1500	DW		

Relinquished by: [signature] Sample Control EEA Date 1-18-13 Time 1108

Received by: [signature] APPL Date 1-19-13 Time 1100

NOTIFICATION REQUIRED IF RECEIVED OUTSIDE OF 0-6 CELSIUS

An Acknowledgement of Receipt is requested to attn: Jackie Contreras

750 Royal Oaks Drive, Suite 100, Monrovia, CA 91016 Tel (626) 386-1100 Fax (626) 386-1101 http://www.EatonAnalytical.com

EAST BAY MUNICIPAL UTILITY DISTRICT
Laboratory Services Division
Phone (510)287-1432 Fax (510)465-5462
PO Box 24055, MS 59, Oakland, CA 94623

Analytical Report Prepared for JACLYN CONTRERAS

Report generated on: Feb 04, 2013 10:02 am
Login No.: L180521

Reported by:

KENNETH GERSTMAN
Laboratory Program Manager

Approved by:

NIRMELA ARSEM
Laboratory Services Division Manager

LSR E024-0201-1
Project Title: Eurofins Eaton Analytical Projects

Login Performance Summary
1 - Sample received by the lab on: Jan 22 2013, 11:30 am
0 - Lost Analyses
0 - Hold Time Exceedences
Turn-around-time met

Samples included in this report:

Sample	Type	Collected	Site	Locator	ClientID
L180521-1	GRAB	16-Jan-2013 15:00	MISC	MISC	201301180174

Legend to the laboratory qualifiers used in this report:
N - Spike recovery outside of control limits
U - Analyte not detected
Qualifiers for subcontract work - See textvalue for description

EAST BAY MUNICIPAL UTILITY DISTRICT
Laboratory Services Division
PO Box 24055, MS 59, Oakland, CA 94623
Phone (510)287-1432 Fax (510)465-5462
Analytical Results Report

LSR E024-0201-1 Eurofins Eaton Analytical Projects
Site: MISC Miscellaneous - Unidentified Site
Locator: MISC Miscellaneous sample, see sample comments for location
ClientID: 201301180174
Lab ID: L180521-1 (P187475-1)
Sample Type: GRAB (Instantaneous Grab)
Date Collected: Jan 16 2013, 03:00pm Sample collector: Wichita/Eurofins
Date Received: Jan 22 2013, 11:30am Sample receiver: KLORENSO
Sample Comments: Folder # 422385, Sub PO# 99-21761, Job # 1000014, Eurofins Lab ID 201301180174, Client Sample ID Wichita, TX Wastewater_Reuse Effluent

Method Reference Parameter	Qualifier	Result	Units	Dilution	MDL	Matrix RL/ML	Tag
Method: SM6710B - 21th Edition, Butyltins, GC/MS						WasteH2O	
TARGET ANALYTES							
TRIBUTYLTIN	U	0.0026	ug/L	1	0.0026	0.005	
INTERNAL STANDARD							
D10-PHENANTHRENE		88.6	% recovery		1		
SURROGATE							
TRIPENTYLTIN		67.8	% recovery		1		

Run ID: R238661 / Work Group No.: WG181708
Prep Date1: 28-JAN-13 Prep Date2: 30-JAN-13 Analyzed 30-Jan-13 23:07

RL is either the client requested or regulatory mandated Reporting Limit. ML is the regulatory mandated Minimum Level

EAST BAY MUNICIPAL UTILITY DISTRICT
Laboratory Services Division
PO Box 24055, MS 59, Oakland, CA 94623
Phone (510)287-1432 Fax (510)465-5462

ANALYTICAL QC SUMMARY REPORT FOR LOGIN L180521

LSR E024-0201-1 Eurofins Eaton Analytical Projects

Sample	Parameter	Sample Type	Qual	Result	Units	Method Reference Control Limit	Measure Date
Method: SM6710B - 21th Edition, Butyltins, GC/MS							
Batch QC Summary:							
WG181640-1 BLANK METH	Method Blank - not subtracted						
WG181640-2 LCS	Low Level Laboratory Control Sample4UL * 2.5 UG/ML; OA141-P032						
WG181640-3 SPIKE BLNK	Spiked Blank (Method Spike) 40UL * 2.5 UG/ML; OA141-P032						
WG181708-1 CHK STND	Check Standard						
WG181708-2 CHK STND	Check Standard						
WG181708-3 CHK STND	Check Standard						
WG181708-4 CHK STND	Check Standard						
Run ID: R238661 / Work Group No.: WG181708							
Prep Date1: 28-JAN-13 Prep Date2: 30-JAN-13 Analyzed 30-JAN-13							
SURROGATE							
WG181640-1	TRIPENTYLTIN	BLANK METH		88.1	% recovery	32-122	30-jan-13 21:38
INTERNAL STANDARD							
WG181640-1	D10-PHENANTHRENE	BLANK METH		88	% recovery	70-130	30-jan-13 21:38
SURROGATE							
WG181640-2	TRIPENTYLTIN	LCS		94.9	% recovery	32-122	30-jan-13 20:09
INTERNAL STANDARD							
WG181640-2	D10-PHENANTHRENE	LCS		74.5	% recovery	70-130	30-jan-13 20:09
SURROGATE							
WG181640-3	TRIPENTYLTIN	SPIKE BLNK		73.8	% recovery	32-122	30-jan-13 19:25
INTERNAL STANDARD							
WG181640-3	D10-PHENANTHRENE	SPIKE BLNK		111	% recovery	70-130	30-jan-13 19:25
TARGET ANALYTES							
WG181640-1	TRIBUTYLTIN	BLANK METH	U	.0026	ug/L	-	30-jan-13 21:38
WG181640-2	TRIBUTYLTIN	LCS		.005	ug/L	-	30-jan-13 20:09
SPIKE RECOVERY DATA PARAMETERS							
WG181640-2	TRIBUTYLTIN	LCS		50	% recovery	50-150	30-jan-13 20:09
TARGET ANALYTES							
WG181640-3	TRIBUTYLTIN	SPIKE BLNK		.066	ug/L	-	30-jan-13 19:25
SPIKE RECOVERY DATA PARAMETERS							
WG181640-3	TRIBUTYLTIN	SPIKE BLNK	N	66	% recovery	70-130	30-jan-13 19:25

For detailed information regarding subcontract data, a copy of the original subcontractor report is available upon request

East Bay Municipal Utility District
Laboratory Services Chain of Custody Record

Prelog or Login No.: L180521

Project Title
Eurofins Eaton Analytical Projects
Account or Project: E024-0201-1

Client PM: JACLYN CONTRERAS
Tel No.: (626) 386-1165
Lab PM: KENNETH GERSTMAN

Sampled by: Wichita/Eurofins
Rcvd: 22-JAN-13 11:30
Sample Date: 16-JAN-13

Lab No.	Sample Type	Time	Site	Locator	Sample Matrix	Tests Required	Container ID Barcode	Chemical Preservative	Date pH	DueDate Initials
L180521-1	GRAB	15:00	MISC	MISC	WasteH2O WasteH2O	BUTYLTINS +REPORT	1158739 CUST	Y		12-FEB-13

ClientID: 201301180174Sub PO# 99-21761
Sample Comments: Folder # 422385, Sub PO# 99-21761, Job # 1000014, Eurofins Lab ID 201301180174, Client Sample ID Wichita, TX Wastewater_Reuse Effluent
Pricing: Q2596

Total containers received: 1

	Signature	Print Name	Time	Date
Relinquished by				
Received by				
Relinquished by				
Received by				
Relinquished by				
Received by		Kristi L Lorenson	11:30	22-JAN-13

Sample Type Descriptions:
GRAB - Instantaneous Grab

Container Type Descriptions:
CUST - Customer supplied container, see COC,

Samples will be retained beyond the approval process only if requested by the client.

East Bay Municipal Utility District
Laboratory Services Chain of Custody Record

Prelog or Login No.: L180521

Project Title
Eurofins Eaton Analytical Projects
Account or Project: E024-0201-1

Client PM: JACLYN CONTRERAS
Tel No.: (626) 386-1165
Lab PM: KENNETH GERSTMAN

Sampled by: Wichita
Rcvd: 22-JAN-13 11:30
Sample Date: 16-JAN-13

Lab No.	Sample Type	Time	Site	Locator	Sample Matrix	Tests Required	Container ID Barcode	Chemical Preservative	Date pH	DueDate Initials
L180521-1	GRAB	15:00	MISC	MISC	WasteH2O	BUTYLTINS	1158739 CUST	Y	1122113	12-FEB-13
					WasteH2O	~~BUTYLTINS~~	~~1158740 CUST~~	~~Y~~		
					WasteH2O	~~BUTYLTINS~~	~~1158741 CUST~~	~~Y~~		
					WasteH2O	+REPORT				

ClientID: 201301180174
Sample Comments: Folder # 422385, Sub PO# 99-21761, Job # 1000014, Eurofins Lab ID 201301180174, Client Sample ID Wichita, TX Wastewater_Reuse Effluent
Pricing: Q2596

Total containers received: 3

	Signature	Print Name	Time	Date
Relinquished by				
Received by				
Relinquished by				
Received by				
Relinquished by				
Received by		Kristi L Lorenson	11:30	22-JAN-13

Sample Type Descriptions:
GRAB - Instantaneous Grab

Container Type Descriptions:
CUST - Customer supplied container, see COC,

Samples will be retained beyond the approval process only if requested by the client.

T634 → 87475 → L180521-1

eurofins | Eaton Analytical
formerly MWH Laboratories

Ship To:
Post Office Box 24055 - MS 59
East Bay Municipal Utility District
2020 Wake Avenue
Oakland, CA 94623-1055

Phone: 510-287-1429 Fax: 510-465-5462

Folder #:	Report Due:	Sub PO #:
422385	02/01/2013	99-21761

Submittal Form & Purchase Order 99-21761

Date: 1/21/2013

*REPORTING REQUIRMENTS: *Do Not Combine Reports with any other samples submitted under different Folder Numbers!*
Report & Invoice must have the Folder # **422385** Sub PO# **99-21761** and Job # **1000014**

Report all quality control data according to Method. Include dates analyzed. Date extracted (if extracted) and Method reference on the report.
Results must have Complete data & QC with Approval Signature.

Reports: Jackie Contreras Sub-Contracting Administrator
EMAIL TO: us20_subcontract@eurofinsus.com
Eurofins Eaton Analytical 750 Royal Oaks Drive, Suite 100, Monrovia, CA 91016
Phone (626) 386-1165 Fax (626) 386-1122
Invoices to: Eurofins Eaton Analytical
Accounts Payable PO Box 12425, Lancaster, PA 17605

Provide in each Report the Specified State Certification # & Exp Date for requested tests + matrix

Samples from: TEXAS

JLS	Use Lab Order # for ID	Client Sample ID for reference only	Analysis Requested	Sample Date & Time	Matrix	PWS Systemcode	PWSID
SM (21) 6710B	201301180174 @TBTEDD	EFFLUENT	Tributyltin	01/16/13 1500	DW		

FedEx
0201 4294 2886 0387

#2 3.1

Relinquished by: M. DE MESA Sample Control EEA Date 1/21-13 Time 1054
Received by: Kristi L Lorenson Date 1/22/13 Time 11:30

NOTIFICATION REQUIRED IF RECEIVED OUTSIDE OF 0-6 CELSIUS
An Acknowledgement of Receipt is requested to attn: Jackie Contreras

750 Royal Oaks Drive, Suite 100, Monrovia, CA 91016 Tel (626) 386-1100 Fax (626) 386-1101 http://www.EatonAnalytical.com

EBMUD LABORATORY C(LER RECEIPT FORM

Login Number: L180521 Received: 22-Jan-2013 11:30
Converted from P187475

Cooler ID:	211547					
SHIPPING INFORMATION						
1. Did cooler come with a shipping slip?	Yes					
Tracking number:	0201429428860387					
PACKAGING AND PRESERVATION						
1. Ice present?	Yes					
2. Type of cooler packing:	Blue Ice					
3. Temperature of a representative sample. Measured temp:	3.1					
Corrected temperature:	3.1					
Container type used to measure temperature:	CUST					
LOGIN PHASE						
1. Containers intact?	Yes					
2. Preservation correct?	Yes					
3. Correct sample containers?	Yes					
4. Sufficient sample volume?	Yes					
5. Labels legible?	Yes					
6. Label info agrees with COC?	Yes					
7. Label information complete?	Yes					
8. Bubbles present in VOA-type containers?	No					
Container IDs w/ bubbles:						
9. Senior Chemist notified of anomolies?	No					
Senior Chemist called						
Who called?						
CHAIN OF CUSTODY DOCUMENTATION						
1. COC signed by Lab?	Yes					
2. Project identified on COC?	Yes					
3. COC info complete?	Yes					

Comments:

Site / locator: MISC/MISC 201301180174

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax:717-656-2681 • www.lancasterlabs.com

ANALYTICAL RESULTS

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

Prepared for:

Eurofins Eaton Analytical, Inc
Suite 100
750 Royal Oaks Drive
Monrovia CA 91016

January 29, 2013

Project: 422385

Submittal Date: 01/19/2013
Group Number: 1363304
PO Number: 99-21741
State of Sample Origin: TX

Client Sample Description	Lancaster Labs (LLI) #
201301180174 Groundwater	6928185

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO Eurofins Eaton Analytical, Inc Attn: Jaclyn Contreras

Respectfully Submitted,

Natalie R. Luciano
Specialist

(717) 556-7258

Sample Description: 201301180174 Groundwater
Folder# 422385 Sub PO# 99-21741 Job# 1000014

LLI Sample # PW 6928185
LLI Group # 1363304
Account # 14482

Project Name: 422385

Collected: 01/16/2013 15:00

Submitted: 01/19/2013 09:25
Reported: 01/29/2013 11:42

Eurofins Eaton Analytical, Inc
Suite 100
750 Royal Oaks Drive
Monrovia CA 91016

42238

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Dilution Factor
Pesticides	**SW-846 8141B**		ug/l	ug/l	ug/l	
10593	Demeton-O	298-03-3	< 1.9	1.9	0.47	1
10593	Demeton-S	126-75-0	< 2.8	2.8	1.1	1
10593	Diazinon	333-41-5	< 5.7	5.7	1.9	1
10593	Dursban (Chlorpyrifos)	2921-88-2	< 2.8	2.8	0.95	1

General Sample Comments

State of Texas Lab Certification No. T104704194-08A-TX

ll QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10593	OP Pesticides in Water	SW-846 8141B	1	130220016A	01/24/2013 17:29	Jamie L Brillhart	1
11123	OP Pest Waters Update IV Ext	SW-846 3510C	1	130220016A	01/23/2013 11:00	Denise L Trimby	1

*=This limit was used in the evaluation of the final result

Quality Control Summary

Client Name: Eurofins Eaton Analytical, Inc Group Number: 1363304
Reported: 01/29/13 at 11:42 AM

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank LOQ**	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 130220016A	Sample number(s): 6928185								
Demeton-O	< 2.0	2.0	0.50	ug/l	80*	76	29-78	5	20
Demeton-S	< 3.0	3.0	1.2	ug/l	60	76	23-144	23*	20
Diazinon	< 6.0	6.0	2.0	ug/l	74	83	19-132	12	20
Dursban (Chlorpyrifos)	< 3.0	3.0	1.0	ug/l	118	113	62-136	5	20

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: OP Pesticides in Water
Batch number: 130220016A

	2-Nitro-m-xylene
6928185	96
Blank	120
LCS	104
LCSD	96
Limits:	45-141

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

D 1/18/2013

Submittal Form & Purchase Order 99-21741

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formerly MWH Laboratories

Ship To:
2425 New Holland Pike
Eurofins Lancaster Laboratories

Lancaster, PA 17601

Phone: 717-656-2300 Fax:

Folder #: 422385 **Report Due:** 02/01/2013 **Sub PO #:** 99-21741

***REPORTING REQUIRMENTS:** *Do Not Combine Reports with any other samples submitted under different Folder Numbers!*
Report & Invoice must have the Folder # **422385** Sub PO# **99-21741** and Job # **1000014**

Report all quality control data according to Method. Include dates analyzed. Date extracted (if extracted) and Method reference on the report.
Results must have Complete data & QC with Approval Signature.

Reports: Jackie Contreras Sub-Contracting Administrator
EMAIL TO: us20_subcontract@eurofinsus.com
Eurofins Eaton Analytical 750 Royal Oaks Drive, Suite 100, Monrovia, CA 91016
Phone (626) 386-1165 Fax (626) 386-1122
Invoices to: Eurofins Eaton Analytical
Accounts Payable PO Box 12425, Lancaster, PA 17605

Provide in each Report the Specified State Certification # & Exp Date for requested tests + matrix.

Samples from: **TEXAS**

14482/1363304/
6928185

JLS	Use Lab Order # for ID	Client Sample ID for reference only	Analysis Requested	Sample Date & Time	Matrix	PWS Systemcode	PWSID
	201301180174	EFFLUENT		01/16/13 1500	DW		
EPA 8141	Demeton-O		Demeton-O by 8141				
EPA 8141	Demeton-S		Demeton-S by 8141				
EPA 8141	Chlorpyrifos		Chlorpyrifos by 8141				
EPA 8141	Diazinon		Diazinon by 8141				

Relinquished by: M. DEMEN Sample Control EEA Date 1-18-13 Time 1311

Received by: Pat Gh Date 1/19/13 Time 0925

NOTIFICATION REQUIRED IF RECEIVED OUTSIDE OF 0-6 CELSIUS

An Acknowledgement of Receipt is requested to attn: Jackie Contreras

750 Royal Oaks Drive, Suite 100, Monrovia, CA 91016 Tel (626) 386-1100 Fax (626) 386-1101 http://www.EatonAnalytical.com
Page 4 of 5

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

J estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR part 136 Table II as "analyze immediately" are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL LANCASTER LABORATORIES BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF LANCASTER LABORATORIES AND (B) WHETHER LANCASTER LABORATORIES HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Lancaster Laboratories which includes any conditions that vary from the Standard Terms and Conditions, and Lancaster hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

eurofins

Eaton Analytical

Acknowledgement of Samples Received

Addr: **City of Wichita Falls**
4801 Big Ed Neal Dr
Wichita Falls, TX 76310

Client ID: WICHITA-TX
Folder #: 422130
Project: WASTEWATER_REUSE
Sample Group: CONFIRMATION

Attn: Mark Southard
Phone: 940-691-1153

Project Manager: Cam P Pham
Phone: (909) 254-0381
PO #: P1301929

The following samples were received from you on **January 16, 2013**. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact your service representative. Thank you for using Eurofins Eaton Analytical.

Sample #	Sample ID	Sample Date
201301170067	WW Effluent	01/14/2013 0800
	@THM524	

Test Description

@THM524 -- Volatile Organics by GCMS

eurofins
Eaton Analytical
Formerly MWH Laboratories

750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
Tel: (626) 386-1100
Fax: (626) 386-1101
1 800 566 LABS (1 800 566 5227)

Laboratory Report

for

City of Wichita Falls
4801 Big Ed Neal Dr
Wichita Falls, TX 76310
Attention: Mark Southard
Fax: 940-691-4121

Date of Issue
01/30/2013
EUROFINS EATON
ANALYTICAL

CPP: Cam P Pham

Project Manager

NELAP ACCREDITED LABORATORY
01114CA

Report: 422130
Project: WASTEWATER_REUSE
Group: CONFIRMATION

Laboratory certifies that the test results meet all **TNI NELAP** requirements unless noted in the Comments section or the Case Narrative. Following the cover page are Hits Reports, Comments, QC Summary, QC Report and Regulatory Forms. This report shall not be reproduced except in full, without the written approval of the laboratory.

STATE CERTIFICATION LIST

State	Certification Number	State	Certification Number
Alabama	41060	**Mississippi**	Certified
Alaska	CA00006	**Montana**	Cert 0035
Arizona	AZ0778	**Nevada**	CA00006-2012-1
Arkansas	Certified	**New Hampshire**	2959-11
California – NELAP	01114CA	**New Jersey**	CA 008
California – ELAP	1422	**New Mexico**	Certified
Colorado	Certified	**New York**	11320
Connecticut	PH-0107	**North Carolina**	06701
Delaware	CA 006	**North Dakota**	R-009
Florida	E871024	**Oregon**	CA 200003-010
Georgia	947	**Pennsylvania**	68-565
Guam	11-004r	**Rhode Island**	01114CA
Hawaii	Certified	**South Carolina**	87016001
Idaho	Certified	**South Dakota**	Certified
Illinois	200033	**Tennessee**	TN02839
Indiana	C-CA-01	**Texas**	T104704230-11-2
Kansas	E-10268	**Utah**	Mont-1
Kentucky	90107	**Vermont**	VT0114
Louisiana	LA110022	**Virginia**	00210
Maine	CA0006	**Washington**	C383
Maryland	224	**West Virginia**	9943 C
Commonwealth of Northern Marianas Is.	MP0004	**Wisconsin**	998316660
Massachusetts	M-CA006	**Wyoming**	8TMS-L
Michigan	9906	**EPA Region 5**	Certified

eurofins | Eaton Analytical

Acknowledgement of Samples Received

Addr: **City of Wichita Falls**
4801 Big Ed Neal Dr
Wichita Falls, TX 76310

Attn: Mark Southard
Phone: 940-691-1153

Client ID: WICHITA-TX
Folder #: 422130
Project: WASTEWATER_REUSE
Sample Group: CONFIRMATION

Project Manager: Cam P Pham
Phone: (909) 254-0381
PO #: P1301929

The following samples were received from you on **January 16, 2013**. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact your service representative. Thank you for using Eurofins Eaton Analytical.

Sample #	Sample ID	Sample Date
201301170067	WW Effluent	01/14/2013 0800
	@THM524	

Test Description

@THM524 -- Volatile Organics by GCMS

750 Royal Oaks Drive, Suite 100, Monrovia, CA 91016 Tel (626) 386-1100 Fax (626) 386-1101 http://www.EatonAnalytical.com

422,30

eurofins

CHAIN OF CUSTODY RECORD

50 Royal Oaks, Suite 100
Monrovia, California 91016
Phone: (626) 386-1100
(800) 566-5227
Fax: (626) 386-1101

EEA LAB USE ONLY:

LOGIN COMMENTS:

SAMPLE TEMP RECEIVED AT:
[ ] Colton / Sacramento / Scottsdale ____ °C (Compliance: 4 +/- 2°C)
RECEIVED FROM CLIENT: REFRIGERATED ___ ON ICE ___
[✓] Monrovia 3.4 °C (Compliance: 4 +/- 2°C)
CONDITION OF ICE: FROZEN ✓ PARTIALLY FROZEN ___ THAWED ___

SAMPLES CHECKED AGAINST COC BY: JS

SAMPLES LOGGED IN BY:

SAMPLES REC'D DAY OF COLLECTION [ ] (check for yes)

TO BE COMPLETED BY SAMPLER:

COMPANY, UTILITY or PROJECT: City of Wichita Falls

SYSTEM #:

EEA CLIENT CODE:

P.O.# / JOB # / PROJECT: P1301929

SAMPLER PRINTED NAME AND SIGNATURE: Blair Ramon Blair Ramon

TAT requested: rush by adv notice only
STD ✓ 1 week ___ 3 day ___ 2 day ___ 1 day ___

COMPLIANCE SAMPLES [X] (check for yes) — Requires state forms [ ]
NON-COMPLIANCE SAMPLES [ ] (check for yes) — REGULATION INVOLVED: (eg. SDWA, Phase V, NPDES, FDA...)
Type of samples (circle one): ROUTINE SPECIAL CONFIRMATION

SEE ATTACHED BOTTLE ORDER FOR ANALYSE. [ ] (check for yes). OR
LIST ANALYSES REQUIRED BELOW (enter number of bottles sent for each test for each sample)

SAMPLE DATE	SAMPLE TIME	SAMPLE ID	CLIENT LAB ID	MATRIX*	GRAB	COMP	THM524																SAMPLER COMMENTS
1/14/13	8:00am	Wastewater Effluent		WW	✓		1																
		* Sample is preserved w/ absorbic acid and 1ml of HCl																					

FedEx Tracking Number 875397207880

Phone

Company

Address

State ZIP

Internal Billing Reference

* MATRIX TYPES
RSW = Raw Surface Water
RGW = Raw Ground Water
CFW = Chlor(am)inated Finished Water
FW = Other Finished Water
CWW = Chlorinated Waste Water
WW = Other Waste Water
BW = Bottled Water
SW = Storm Water
SO = Soil
SL = Sludge

	SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
SAMPLED BY:					
RELINQUISHED BY	Blair Ramon	Blair Ramon	City of Wichita Falls Lab Sup	01/15/13	4:30 PM
RECEIVED BY:		Joe Sanchez	EEA	1/16/13	1230
RELINQUISHED BY					
RECEIVED BY					
RELINQUISHED BY:					
RECEIVED BY:					

PAGE ___ OF ___

* Please send results to blair.ramon@wichitafallstx.gov

eurofins | Eaton Analytical
formerly MWH Laboratories

750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
Tel: (626) 386-1100
Fax: (626) 386-1101
1 800 566 LABS (1 800 566 5227)

Laboratory Comments
Report: 422130

City of Wichita Falls
Mark Southard
4801 Big Ed Neal Dr
Wichita Falls, TX 76310

The Comments Report may be blank if there are no comments for this report.

eurofins
Eaton Analytical
formerly MWH Laboratories

750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
Tel: (626) 386-1100
Fax: (626) 386-1101
1 800 566 LABS (1 800 566 5227)

Laboratory Hits
Report: 422130

City of Wichita Falls
Mark Southard
4801 Big Ed Neal Dr
Wichita Falls, TX 76310

Samples Received on:
01/16/2013

Analyzed	Analyte	Sample ID	Result	Federal MCL	Units	MRL
	201301170067	**WW Effluent**				
01/23/2013 13:41	Bromodichloromethane		2.8		ug/L	0.5
01/23/2013 13:41	Bromoform		2.3		ug/L	0.5
01/23/2013 13:41	Chlorodibromomethane		4.0		ug/L	0.5
01/23/2013 13:41	Chloroform (Trichloromethane)		1.2		ug/L	0.5
01/23/2013 13:41	Total THM		10	80	ug/L	0.5

SUMMARY OF POSITIVE DATA ONLY

eurofins
Eaton Analytical
formerly MWH Laboratories
750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
Tel: (626) 386-1100
Fax: (626) 386-1101
1 800 566 LABS (1 800 566 5227)

Laboratory Data
Report: 422130

City of Wichita Falls
Mark Southard
4801 Big Ed Neal Dr
Wichita Falls, TX 76310

Samples Received on:
01/16/2013

WW Effluent (201301170067) — **Sampled on 01/14/2013 0800**

EPA 524.2 - Volatile Organics by GCMS

Prepared	Analyzed	QC Ref #	Method	Analyte	Result	Units	MRL	Dilution
1/23/2013	01/23/2013 13:41	690044	(EPA 524.2)	Bromodichloromethane	2.8	ug/L	0.5	1
1/23/2013	01/23/2013 13:41	690044	(EPA 524.2)	Bromoform	2.3	ug/L	0.5	1
1/23/2013	01/23/2013 13:41	690044	(EPA 524.2)	Chlorodibromomethane	4.0	ug/L	0.5	1
1/23/2013	01/23/2013 13:41	690044	(EPA 524.2)	Chloroform (Trichloromethane)	1.2	ug/L	0.5	1
1/23/2013	01/23/2013 13:41	690044	(EPA 524.2)	Total THM	10	ug/L	0.5	1
1/23/2013	01/23/2013 13:41	690044	(EPA 524.2)	1,2-Dichloroethane-d4	92	%		1
1/23/2013	01/23/2013 13:41	690044	(EPA 524.2)	4-Bromofluorobenzene	101	%		1
1/23/2013	01/23/2013 13:41	690044	(EPA 524.2)	Toluene-d8	105	%		1

Rounding on totals after summation.
(c) - indicates calculated results

eurofins | Eaton Analytical
formerly MWH Laboratories

750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
Tel: (626) 386-1100
Fax: (626) 386-1101
1 800 566 LABS (1 800 566 5227)

City of Wichita Falls

QC Ref # 690044 - Volatile Organics by GCMS **Analysis Date: 01/23/2013**

201301170067 WW Effluent Analyzed by: SZZ

eurofins
Eaton Analytical
formerly MWH Laboratories

750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
Tel: (626) 386-1100
Fax: (626) 386-1101
1 800 566 LABS (1 800 566 5227)

Laboratory QC
Report: 422130

City of Wichita Falls

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
QC Ref# 690044 - Volatile Organics by GCMS by EPA 524.2						**Analysis Date: 01/23/2013**			
LCS1	1,2-Dichloroethane-d4 (S)			97.0	%	97	(70-130)		
LCS2	1,2-Dichloroethane-d4 (S)			96.6	%	97	(70-130)		
MBLK	1,2-Dichloroethane-d4 (S)			96.0	%	96	(70-130)		
MRL_CHK	1,2-Dichloroethane-d4 (S)			94.6	%	95	(70-130)		
LCS1	4-Bromofluorobenzene (S)			103	%	103	(70-130)		
LCS2	4-Bromofluorobenzene (S)			111	%	111	(70-130)		
MBLK	4-Bromofluorobenzene (S)			102	%	102	(70-130)		
MRL_CHK	4-Bromofluorobenzene (S)			106	%	106	(70-130)		
LCS1	Bromodichloromethane		5.0	4.26	ug/L	85	(70-130)		
LCS2	Bromodichloromethane		5.0	4.62	ug/L	92	(70-130)	20	8.1
MBLK	Bromodichloromethane			<0.5	ug/L				
MRL_CHK	Bromodichloromethane		0.5	0.470	ug/L	94	(50-150)		
LCS1	Bromoform		5.0	4.67	ug/L	93	(70-130)		
LCS2	Bromoform		5.0	4.88	ug/L	98	(70-130)	20	4.4
MBLK	Bromoform			<0.5	ug/L				
MRL_CHK	Bromoform		0.5	0.460	ug/L	92	(50-150)		
LCS1	Chlorodibromomethane		5.0	4.47	ug/L	89	(70-130)		
LCS2	Chlorodibromomethane		5.0	4.80	ug/L	96	(70-130)	20	7.1
MBLK	Chlorodibromomethane			<0.5	ug/L				
MRL_CHK	Chlorodibromomethane		0.5	0.530	ug/L	106	(50-150)		
LCS1	Chloroform (Trichloromethane)		5.0	4.46	ug/L	89	(70-130)		
LCS2	Chloroform (Trichloromethane)		5.0	4.51	ug/L	90	(70-130)	20	1.1
MBLK	Chloroform (Trichloromethane)			<0.5	ug/L				
MRL_CHK	Chloroform (Trichloromethane)		0.5	0.500	ug/L	100	(50-150)		
LCS1	Toluene-d8 (S)			102	%	102	(70-130)		
LCS2	Toluene-d8 (S)			101	%	101	(70-130)		
MBLK	Toluene-d8 (S)			103	%	103	(70-130)		
MRL_CHK	Toluene-d8 (S)			99.0	%	99	(70-130)		

Spike recovery is already corrected for native results.
Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.
Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.
RPD not calculated for LCS2 when different a concentration than LCS1 is used.
RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level).
(S) - Indicates surrogate compound.
(I) - Indicates internal standard compound.

LABORATORY REPORT

This report contains 13 pages.
(including the cover page)

If you have any questions concerning this report, please do not hesitate to call us at (800) 332-4345 or (574) 233-4777.

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UL LLC
110 S. Hill St., South Bend, IN 46617-2702 USA
T: 800.332.4345 / F: 574.233.8207 / W: UL.com

Laboratory Report

Client: City of Wichita Falls

Attn: Mark Southard
P. O. Box 1431
Wichita Falls, TX 76307

Report: 290720
Priority: Standard Written
Status: Final
PWS ID: TX227935

Copies to: None

Sample Information

UL ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
2764758	1005 River Road WW EFF	549.2	01/14/13 13:30	Client	01/15/13 10:30
2764759	1005 River Road WW EFF	515.3	01/14/13 13:30	Client	01/15/13 10:30
2764760	1005 River Road WW EFF	548.1	01/14/13 13:30	Client	01/15/13 10:30
2764761	1005 River Road WW EFF	505	01/14/13 13:30	Client	01/15/13 10:30
2764762	1005 River Road WW EFF	531.1	01/14/13 13:30	Client	01/15/13 10:30
2764763	1005 River Road WW EFF	547	01/14/13 13:30	Client	01/15/13 10:30
2764764	1005 River Road WW EFF	504.1	01/14/13 13:30	Client	01/15/13 10:30
2764765	1005 River Road WW EFF	552.2	01/14/13 13:30	Client	01/15/13 10:30
2764766	1005 River Road WW EFF	524.2	01/14/13 13:30	Client	01/15/13 10:30
2764769	1005 River Road WW EFF	L200	01/14/13 13:30	Client	01/15/13 10:30
2764770	1005 River Road WW EFF	L211	01/14/13 13:30	Client	01/15/13 10:30
2764771	1005 River Road WW EFF	L220	01/14/13 13:30	Client	01/15/13 10:30
2764772	1005 River Road WW EFF	S170	01/14/13 13:30	Client	01/15/13 10:30
2764773	1005 River Road WW EFF	L221	01/14/13 13:30	Client	01/15/13 10:30
2764774	1005 River Road WW EFF	521	01/14/13 13:30	Client	01/15/13 10:30
2764775	1005 River Road WW EFF	525.2	01/14/13 13:30	Client	01/15/13 10:30
2764776	1005 River Road WW EFF	1613	01/14/13 13:30	Client	01/15/13 10:30
2764777	1005 River Road WW EFF	537	01/14/13 13:30	Client	01/15/13 10:30
2764778	1005 River Road WW EFF	245.1	01/14/13 13:30	Client	01/15/13 10:30
2764778	1005 River Road WW EFF	200.7	01/14/13 13:30	Client	01/15/13 10:30
2764779	1005 River Road WW EFF	331.0	01/14/13 13:30	Client	01/15/13 10:30
2764780	1005 River Road WW EFF	7110 B	01/14/13 13:30	Client	01/15/13 10:30

Report Summary

Project: Wastewater Reuse

Note: Dioxin analysis was performed by Pace Analytical Services, Inc., Minneapolis, MN.

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call Jim Vernon at (574) 233-4777.

UL LLC
110 S. Hill St., South Bend, IN 46617-2702 USA
T: 800.332.4345 / F: 574.233.8207 / W: UL.com

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Kelly Trott Project Manager

Digitally signed by Kelly R. Trott
Date: 2013.02.15 12:25:05 -05'00'

Authorized Signature | Title | Date

Client Name: City of Wichita Falls Report #: 290720

Sampling Point: 1005 River Road WW EFF PWS ID: TX227935

General Chemistry

Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
14797-73-0	Perchlorate	331.0	—	0.05	< 0.50	ug/L	—	01/17/13 10:35	2764779

Metals

Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
7439-89-6	Iron	200.7	0.3 ^	0.020	**0.15**	mg/L	—	01/23/13 13:28	2764778
7439-97-6	Mercury	245.1	2 *	0.1	< 0.1	ug/L	01/30/13 08:15	01/31/13 10:52	2764778

Radionuclides

Analyte ID #	Analyte	Method	Reg Limit	DL**	Result	Units	Preparation Date	Analyzed	UL ID #
—	Gross Alpha	7110 B	15 *	2.22	0.78 ± 1.27	pCi/L	01/30/13 11:40	02/02/13 09:51	2764780
—	Gross Beta	7110 B	—	1.5	**20.7 ± 1.8**	pCi/L	01/30/13 11:40	02/02/13 09:51	2764780

** Detection Limit (DL) shall be that concentration which can be counted with a precision of plus or minus 100% at the 95 % confidence level.

Disinfection Byproducts

Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
5589-96-8	Bromochloroacetic acid	552.2	—	1.0	**7.8**	ug/L	01/25/13 07:30	01/28/13 15:32	2764765
631-64-1	Dibromoacetic acid	552.2	—	1.0	**4.8**	ug/L	01/25/13 07:30	01/28/13 15:32	2764765
79-43-6	Dichloroacetic acid	552.2	—	1.0	**9.9**	ug/L	01/25/13 07:30	01/28/13 15:32	2764765
79-08-3	Monobromoacetic acid	552.2	—	1.0	< 1.0	ug/L	01/25/13 07:30	01/28/13 15:32	2764765
79-11-8	Monochloroacetic acid	552.2	—	2.0	< 2.0	ug/L	01/25/13 07:30	01/28/13 15:32	2764765
76-03-9	Trichloroacetic acid	552.2	—	1.0	**2.8**	ug/L	01/25/13 07:30	01/28/13 15:32	2764765
—	Total HAA5	552.2	60 *	2.0	**17.5**	ug/L	01/25/13 07:30	01/28/13 15:32	2764765

Semi-volatile Organic Chemicals

Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed	UL ID #
96-12-8	1,2-Dibromo-3-chloropropane (DBCP)	504.1	0.2 *	0.01	< 0.01	ug/L	01/16/13 16:05	01/16/13 20:37	2764764
106-93-4	1,2-Dibromoethane (EDB)	504.1	0.05 *	0.01	< 0.01	ug/L	01/16/13 16:05	01/16/13 20:37	2764764
12674-11-2	Aroclor 1016	505	—	0.08	< 0.08	ug/L	01/17/13 16:40	01/18/13 09:43	2764761
11104-28-2	Aroclor 1221	505	—	0.19	< 0.19	ug/L	01/17/13 16:40	01/18/13 09:43	2764761
11141-16-5	Aroclor 1232	505	—	0.23	< 0.23	ug/L	01/17/13 16:40	01/18/13 09:43	2764761
53469-21-9	Aroclor 1242	505	—	0.26	< 0.26	ug/L	01/17/13 16:40	01/18/13 09:43	2764761
12672-29-6	Aroclor 1248	505	—	0.1	< 0.1	ug/L	01/17/13 16:40	01/18/13 09:43	2764761
11097-69-1	Aroclor 1254	505	—	0.1	< 0.1	ug/L	01/17/13 16:40	01/18/13 09:43	2764761
11096-82-5	Aroclor 1260	505	—	0.2	< 0.2	ug/L	01/17/13 16:40	01/18/13 09:43	2764761
57-74-9	Chlordane	505	2 *	0.1	< 0.1	ug/L	01/17/13 16:40	01/18/13 09:43	2764761
8001-35-2	Toxaphene	505	3 *	1.0	< 1.0	ug/L	01/17/13 16:40	01/18/13 09:43	2764761
94-75-7	2,4-D	515.3	70 *	0.1	< 0.1	ug/L	01/16/13 10:00	01/18/13 09:38	2764759
75-99-0	Dalapon	515.3	200 *	1.0	< 1.0	ug/L	01/16/13 10:00	01/18/13 09:38	2764759
1918-00-9	Dicamba	515.3	—	0.1	< 0.1	ug/L	01/16/13 10:00	01/18/13 09:38	2764759

88-85-7	Dinoseb	515.3	7 *	0.1	< 0.1	ug/L	01/16/13 10:00	01/18/13 09:38	2764759
87-86-5	Pentachlorophenol	515.3	1 *	0.04	< 0.04	ug/L	01/16/13 10:00	01/18/13 09:38	2764759
1918-02-1	Picloram	515.3	500 *	0.1	< 0.1	ug/L	01/16/13 10:00	01/18/13 09:38	2764759
93-72-1	2,4,5-TP (Silvex)	515.3	50 *	0.1	< 0.1	ug/L	01/16/13 10:00	01/18/13 09:38	2764759
924-16-3	N-Nitrosodi-N-butylamine (NDBA)	521	—	4.0	< 4.0	ng/L	01/17/13 09:00	01/24/13 07:06	2764774
621-64-7	N-Nitrosodi-N-propylamine (NDPA)	521	—	7.0	< 7.0	ng/L	01/17/13 09:00	01/24/13 07:06	2764774
55-18-5	N-Nitrosodiethylamine (NDEA)	521	—	5.0	< 5.0	ng/L	01/17/13 09:00	01/24/13 07:06	2764774
62-75-9	N-Nitrosodimethylamine (NDMA)	521	—	2.0	**9.5**	ng/L	01/17/13 09:00	01/24/13 07:06	2764774
86-30-6	N-Nitrosodiphenylamine	521	—	10	< 10	ng/L	01/17/13 09:00	01/24/13 07:06	2764774
10595-95-6	N-Nitrosomethylethylamine (NMEA)	521	—	3.0	< 3.0	ng/L	01/17/13 09:00	01/24/13 07:06	2764774
59-89-2	N-Nitrosomorpholine	521	—	5.0	**20**	ng/L	01/17/13 09:00	01/24/13 07:06	2764774
100-75-4	N-Nitrosopiperidine (NPIP)	521	—	2.0	< 2.0	ng/L	01/17/13 09:00	01/24/13 07:06	2764774
930-55-2	N-Nitrosopyrrolidine (NPYR)	521	—	2.0	**2.0**	ng/L	01/17/13 09:00	01/24/13 07:06	2764774
15972-60-8	Alachlor	525.2	2 *	0.1	< 0.1	ug/L	01/16/13 07:41	01/17/13 08:51	2764775
309-00-2	Aldrin	525.2	—	0.1	< 0.1	ug/L	01/16/13 07:41	01/17/13 08:51	2764775
1912-24-9	Atrazine	525.2	3 *	0.1	< 0.1	ug/L	01/16/13 07:41	01/17/13 08:51	2764775
50-32-8	Benzo(a)pyrene	525.2	0.2 *	0.02	< 0.02	ug/L	01/16/13 07:41	01/17/13 08:51	2764775
58-89-9	gamma-BHC (Lindane)	525.2	0.2 *	0.02	< 0.02	ug/L	01/16/13 07:41	01/17/13 08:51	2764775
23184-66-9	Butachlor	525.2	—	0.1	< 0.1	ug/L	01/16/13 07:41	01/17/13 08:51	2764775
60-57-1	Dieldrin	525.2	—	0.1	< 0.1	ug/L	01/16/13 07:41	01/17/13 08:51	2764775
103-23-1	Di(2-ethylhexyl)adipate	525.2	400 *	0.6	< 0.6	ug/L	01/16/13 07:41	01/17/13 08:51	2764775
117-81-7	Di(2-ethylhexyl)phthalate	525.2	6 *	0.6	< 0.6	ug/L	01/16/13 07:41	01/17/13 08:51	2764775
72-20-8	Endrin	525.2	2 *	0.01	< 0.01	ug/L	01/16/13 07:41	01/17/13 08:51	2764775
76-44-8	Heptachlor	525.2	0.4 *	0.04	< 0.04	ug/L	01/16/13 07:41	01/17/13 08:51	2764775
1024-57-3	Heptachlor epoxide	525.2	0.2 *	0.02	< 0.02	ug/L	01/16/13 07:41	01/17/13 08:51	2764775
118-74-1	Hexachlorobenzene	525.2	1 *	0.1	< 0.1	ug/L	01/16/13 07:41	01/17/13 08:51	2764775
77-47-4	Hexachlorocyclopentadiene	525.2	50 *	0.1	< 0.1	ug/L	01/16/13 07:41	01/17/13 08:51	2764775
72-43-5	Methoxychlor	525.2	40 *	0.1	< 0.1	ug/L	01/16/13 07:41	01/17/13 08:51	2764775
51218-45-2	Metolachlor	525.2	—	0.1	< 0.1	ug/L	01/16/13 07:41	01/17/13 08:51	2764775
21087-64-9	Metribuzin	525.2	—	0.1	< 0.1	ug/L	01/16/13 07:41	01/17/13 08:51	2764775
1918-16-7	Propachlor	525.2	—	0.1	< 0.1	ug/L	01/16/13 07:41	01/17/13 08:51	2764775
122-34-9	Simazine	525.2	4 *	0.07	**0.62**	ug/L	01/16/13 07:41	01/17/13 08:51	2764775
116-06-3	Aldicarb	531.1	—	0.5	< 0.5	ug/L	01/17/13 08:15	01/18/13 19:59	2764762
1646-88-4	Aldicarb sulfone	531.1	—	0.7	< 0.7	ug/L	01/17/13 08:15	01/18/13 19:59	2764762
1646-87-3	Aldicarb sulfoxide	531.1	—	0.5	< 0.5	ug/L	01/17/13 08:15	01/18/13 19:59	2764762
63-25-2	Carbaryl	531.1	—	0.5	< 0.5	ug/L	01/17/13 08:15	01/18/13 19:59	2764762
1563-66-2	Carbofuran	531.1	40 *	0.9	< 0.9	ug/L	01/17/13 08:15	01/18/13 19:59	2764762
16655-82-6	3-Hydroxycarbofuran	531.1	—	0.5	< 0.5	ug/L	01/17/13 08:15	01/18/13 19:59	2764762
16752-77-5	Methomyl	531.1	—	0.5	< 0.5	ug/L	01/17/13 08:15	01/18/13 19:59	2764762
23135-22-0	Oxamyl	531.1	200 *	1.0	< 1.0	ug/L	01/17/13 08:15	01/18/13 19:59	2764762
1071-83-6	Glyphosate	547	700 *	6.0	< 6.0	ug/L	01/15/13 13:15	01/16/13 23:27	2764763
145-73-3	Endothall	548.1	100 *	9.0	< 9.0	ug/L	01/16/13 08:00	01/17/13 14:23	2764760
85-00-7	Diquat	549.2	20 *	0.4	< 0.4	ug/L	01/18/13 08:20	01/18/13 16:55	2764758

Any positive Aroclor result would require analysis for total PCB as decachlorobiphenyl by method 508A (MCL = 0.5 ug/L)

Volatile Organic Chemicals

Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
71-43-2	Benzene	524.2	5 *	0.5	< 0.5	ug/L	—	01/16/13 12:16	2764766
108-86-1	Bromobenzene	524.2	—	0.5	< 0.5	ug/L	—	01/16/13 12:16	2764766

74-97-5	Bromochloromethane	524.2	—	0.5	< 0.5	ug/L	—	01/16/13 12:16	2764766
75-27-4	Bromodichloromethane	524.2	—	0.5	**4.9**	ug/L	—	01/16/13 12:16	2764766
75-25-2	Bromoform	524.2	—	0.5	**4.3**	ug/L	—	01/16/13 12:16	2764766
74-83-9	Bromomethane	524.2	—	0.5	< 0.5	ug/L	—	01/16/13 12:16	2764766
104-51-8	n-Butylbenzene	524.2	—	0.5	< 0.5	ug/L	—	01/16/13 12:16	2764766
135-98-8	sec-Butylbenzene	524.2	—	0.5	< 0.5	ug/L	—	01/16/13 12:16	2764766
98-06-6	tert-Butylbenzene	524.2	—	0.5	< 0.5	ug/L	—	01/16/13 12:16	2764766
56-23-5	Carbon tetrachloride	524.2	5 *	0.5	< 0.5	ug/L	—	01/16/13 12:16	2764766
108-90-7	Chlorobenzene	524.2	100 *	0.5	< 0.5	ug/L	—	01/16/13 12:16	2764766
75-00-3	Chloroethane	524.2	—	0.5	< 0.5	ug/L	—	01/16/13 12:16	2764766
67-66-3	Chloroform	524.2	—	0.5	**1.7**	ug/L	—	01/16/13 12:16	2764766
74-87-3	Chloromethane	524.2	—	0.5	< 0.5	ug/L	—	01/16/13 12:16	2764766
95-49-8	2-Chlorotoluene	524.2	—	0.5	< 0.5	ug/L	—	01/16/13 12:16	2764766
106-43-4	4-Chlorotoluene	524.2	—	0.5	< 0.5	ug/L	—	01/16/13 12:16	2764766
124-48-1	Dibromochloromethane	524.2	—	0.5	**7.2**	ug/L	—	01/16/13 12:16	2764766
—	Total Trihalomethanes	524.2	80 *	0.5	**18.1**	ug/L	—	01/16/13 12:16	2764766
96-12-8	1,2-Dibromo-3-chloropropane (DBCP)	524.2	—	0.2	< 0.2	ug/L	—	01/16/13 12:16	2764766
106-93-4	1,2-Dibromoethane (EDB)	524.2	—	0.2	< 0.2	ug/L	—	01/16/13 12:16	2764766
74-95-3	Dibromomethane	524.2	—	0.5	< 0.5	ug/L	—	01/16/13 12:16	2764766
95-50-1	1,2-Dichlorobenzene	524.2	600 *	0.5	< 0.5	ug/L	—	01/16/13 12:16	2764766
541-73-1	1,3-Dichlorobenzene	524.2	—	0.5	< 0.5	ug/L	—	01/16/13 12:16	2764766
106-46-7	1,4-Dichlorobenzene	524.2	75 *	0.5	< 0.5	ug/L	—	01/16/13 12:16	2764766
75-71-8	Dichlorodifluoromethane	524.2	—	0.5	< 0.5	ug/L	—	01/16/13 12:16	2764766
75-34-3	1,1-Dichloroethane	524.2	—	0.5	< 0.5	ug/L	—	01/16/13 12:16	2764766
107-06-2	1,2-Dichloroethane	524.2	5 *	0.5	< 0.5	ug/L	—	01/16/13 12:16	2764766
75-35-4	1,1-Dichloroethylene	524.2	7 *	0.5	< 0.5	ug/L	—	01/16/13 12:16	2764766
156-59-2	cis-1,2-Dichloroethylene	524.2	70 *	0.5	< 0.5	ug/L	—	01/16/13 12:16	2764766
156-60-5	trans-1,2-Dichloroethylene	524.2	100 *	0.5	< 0.5	ug/L	—	01/16/13 12:16	2764766
75-09-2	Dichloromethane	524.2	5 *	0.5	< 0.5	ug/L	—	01/16/13 12:16	2764766
78-87-5	1,2-Dichloropropane	524.2	5 *	0.5	< 0.5	ug/L	—	01/16/13 12:16	2764766
142-28-9	1,3-Dichloropropane	524.2	—	0.5	< 0.5	ug/L	—	01/16/13 12:16	2764766
594-20-7	2,2-Dichloropropane	524.2	—	0.5	< 0.5	ug/L	—	01/16/13 12:16	2764766
563-58-6	1,1-Dichloropropylene	524.2	—	0.5	< 0.5	ug/L	—	01/16/13 12:16	2764766
10061-01-5	cis-1,3-Dichloropropylene	524.2	—	0.5	< 0.5	ug/L	—	01/16/13 12:16	2764766
10061-02-6	trans-1,3-Dichloropropylene	524.2	—	0.5	< 0.5	ug/L	—	01/16/13 12:16	2764766
542-75-6	1,3-Dichloropropylene, cis & trans	524.2	—	0.5	< 0.5	ug/L	—	01/16/13 12:16	2764766
100-41-4	Ethylbenzene	524.2	700 *	0.5	< 0.5	ug/L	—	01/16/13 12:16	2764766
87-68-3	Hexachlorobutadiene	524.2	—	0.5	< 0.5	ug/L	—	01/16/13 12:16	2764766
98-82-8	Isopropylbenzene	524.2	—	0.5	< 0.5	ug/L	—	01/16/13 12:16	2764766
99-87-6	4-Isopropyltoluene	524.2	—	0.5	< 0.5	ug/L	—	01/16/13 12:16	2764766
1634-04-4	Methyl-t-butyl ether (MTBE)	524.2	—	0.5	< 0.5	ug/L	—	01/16/13 12:16	2764766
91-20-3	Naphthalene	524.2	—	0.5	< 0.5	ug/L	—	01/16/13 12:16	2764766
103-65-1	n-Propylbenzene	524.2	—	0.5	< 0.5	ug/L	—	01/16/13 12:16	2764766
100-42-5	Styrene	524.2	100 *	0.5	< 0.5	ug/L	—	01/16/13 12:16	2764766
630-20-6	1,1,1,2-Tetrachloroethane	524.2	—	0.5	< 0.5	ug/L	—	01/16/13 12:16	2764766
79-34-5	1,1,2,2-Tetrachloroethane	524.2	—	0.5	< 0.5	ug/L	—	01/16/13 12:16	2764766
127-18-4	Tetrachloroethylene	524.2	5 *	0.5	< 0.5	ug/L	—	01/16/13 12:16	2764766
108-88-3	Toluene	524.2	1000 *	0.5	< 0.5	ug/L	—	01/16/13 12:16	2764766
87-61-6	1,2,3-Trichlorobenzene	524.2	—	0.5	< 0.5	ug/L	—	01/16/13 12:16	2764766
120-82-1	1,2,4-Trichlorobenzene	524.2	70 *	0.5	< 0.5	ug/L	—	01/16/13 12:16	2764766

71-55-6	1,1,1-Trichloroethane	524.2	200 *	0.5	< 0.5	ug/L	—	01/16/13 12:16	2764766
79-00-5	1,1,2-Trichloroethane	524.2	5 *	0.5	< 0.5	ug/L	—	01/16/13 12:16	2764766
79-01-6	Trichloroethylene	524.2	5 *	0.5	< 0.5	ug/L	—	01/16/13 12:16	2764766
75-69-4	Trichlorofluoromethane	524.2	—	0.5	< 0.5	ug/L	—	01/16/13 12:16	2764766
96-18-4	1,2,3-Trichloropropane	524.2	—	0.5	< 0.5	ug/L	—	01/16/13 12:16	2764766
95-63-6	1,2,4-Trimethylbenzene	524.2	—	0.5	< 0.5	ug/L	—	01/16/13 12:16	2764766
108-67-8	1,3,5-Trimethylbenzene	524.2	—	0.5	< 0.5	ug/L	—	01/16/13 12:16	2764766
75-01-4	Vinyl chloride	524.2	2 *	0.2	< 0.2	ug/L	—	01/16/13 12:16	2764766
95-47-6	1,2-Xylene	524.2	—	0.5	< 0.5	ug/L	—	01/16/13 12:16	2764766
179601-23-1	1,3 + 1,4-Xylene	524.2	—	0.5	< 0.5	ug/L	—	01/16/13 12:16	2764766
1330-20-7	Xylenes, Total	524.2	10000 *	0.5	< 0.5	ug/L	—	01/16/13 12:16	2764766

Compliance monitoring for 1,2-Dibromo-3-chloropropane (DBCP) must be done using EPA method 504.1.

Compliance monitoring for 1,2-Dibromoethane (EDB) must be done using EPA method 504.1.

UL Methods

Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
375-73-5	Perfluorobutanesulfonic acid (PFBS)	537	—	90	< 90	ng/L	01/17/13 07:00	01/18/13 13:02	2764777
375-85-9	Perfluoroheptanoic acid (PFHpA)	537	—	10	**10**	ng/L	01/17/13 07:00	01/18/13 13:02	2764777
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	537	—	30	< 30	ng/L	01/17/13 07:00	01/18/13 13:02	2764777
375-95-1	Perfluorononanoic acid (PFNA)	537	—	20	< 20	ng/L	01/17/13 07:00	01/18/13 13:02	2764777
1763-23-1	Perfluorooctane sulfonate (PFOS)	537	—	40	< 40	ng/L	01/17/13 07:00	01/18/13 13:02	2764777
335-67-1	Perfluorooctanoic acid (PFOA)	537	—	20	**20**	ng/L	01/17/13 07:00	01/18/13 13:02	2764777
80-05-7	Bisphenol A	L200	—	0.1	< 0.1	ug/L	01/17/13 07:37	02/07/13 04:34	2764769
25154-52-3	Nonylphenol, isomer mix	L200	—	0.5	< 0.5	ug/L	01/17/13 07:37	02/07/13 04:34	2764769
1806-26-4	4-n-Octylphenol	L200	—	0.5	< 0.5	ug/L	01/17/13 07:37	02/07/13 04:34	2764769
140-66-9	4-tert-Octylphenol	L200	—	0.5	< 0.5	ug/L	01/17/13 07:37	02/07/13 04:34	2764769
87-86-5	Pentachlorophenol	L200	—	0.1	< 0.1	ug/L	01/17/13 07:37	02/07/13 04:34	2764769
92-69-3	Phenylphenol	L200	—	0.1	< 0.1	ug/L	01/17/13 07:37	02/07/13 04:34	2764769
79-94-7	Tetrabromobisphenol A	L200	—	0.1	< 0.1	ug/L	01/17/13 07:37	02/07/13 04:34	2764769
88-06-2	2,4,6-Trichlorophenol	L200	—	0.1	< 0.1	ug/L	01/17/13 07:37	02/07/13 04:34	2764769
56-53-1	Diethylstilbestrol (DES)	L211	—	0.5	< 0.5	ng/L	01/17/13 07:37	01/22/13 19:50	2764770
57-91-0	17alpha-Estradiol	L211	—	0.5	< 0.5	ng/L	01/17/13 07:37	01/22/13 19:50	2764770
50-28-2	17beta-Estradiol	L211	—	0.5	**1.4**	ng/L	01/17/13 07:37	01/22/13 19:50	2764770
50-27-1	Estriol	L211	—	0.5	< 0.5	ng/L	01/17/13 07:37	01/22/13 19:50	2764770
53-16-7	Estrone	L211	—	0.5	**21**	ng/L	01/17/13 07:37	01/22/13 19:50	2764770
57-63-6	17alpha-Ethynyl estradiol	L211	—	0.5	< 0.5	ng/L	01/17/13 07:37	01/22/13 19:50	2764770
57-83-0	Progesterone	L211	—	0.1	**0.3**	ng/L	01/17/13 07:37	01/22/13 19:50	2764770
481-30-1	cis-Testosterone	L211	—	0.1	< 0.1	ng/L	01/17/13 07:37	01/22/13 19:50	2764770
58-22-0	trans-Testosterone	L211	—	0.1	< 0.1	ng/L	01/17/13 07:37	01/22/13 19:50	2764770
103-90-2	Acetaminophen	L220	—	0.005	< 0.050	ug/L	01/24/13 08:00	02/05/13 09:39	2764771
60-80-0	Antipyrine	L220	—	0.001	< 0.010	ug/L	01/24/13 08:00	02/05/13 09:39	2764771
29122-68-7	Atenolol	L220	—	0.001	< 0.010	ug/L	01/24/13 08:00	02/05/13 09:39	2764771
83905-01-5	Azithromycin	L220	—	0.005	**0.111**	ug/L	01/24/13 08:00	02/05/13 09:39	2764771
1405-87-4	Bacitracin	L220	—	1.0	< 10.0	ug/L	01/24/13 08:00	02/05/13 09:39	2764771
58-08-2	Caffeine	L220	—	0.05	< 0.50	ug/L	01/24/13 08:00	02/05/13 09:39	2764771
6804-07-5	Carbadox	L220	—	0.005	< 0.050	ug/L	01/24/13 08:00	02/05/13 09:39	2764771
298-46-4	Carbamazepine	L220	—	0.001	**0.348**	ug/L	01/24/13 08:00	02/05/13 09:39	2764771
85721-33-1	Ciprofloxacin	L220	—	0.05	< 0.50	ug/L	01/24/13 08:00	02/05/13 09:39	2764771
486-56-6	Cotinine	L220	—	0.001	< 0.010	ug/L	01/24/13 08:00	02/05/13 09:39	2764771
134-62-3	DEET	L220	—	0.005	**0.084**	ug/L	01/24/13 08:00	02/05/13 09:39	2764771

50-02-2	Dexamethasone	L220	—	0.005	< 0.050	ug/L	01/24/13 08:00	02/05/13 09:39	2764771
439-14-5	Diazepam	L220	—	0.001	< 0.010	ug/L	01/24/13 08:00	02/05/13 09:39	2764771
42399-41-7	Diltiazem	L220	—	0.0001	**0.0254**	ug/L	01/24/13 08:00	02/05/13 09:39	2764771
93106-60-6	Enrofloxacin	L220	—	0.05	< 0.50	ug/L	01/24/13 08:00	02/05/13 09:39	2764771
114-07-8	Erythromycin	L220	—	0.001	< 0.010	ug/L	01/24/13 08:00	02/05/13 09:39	2764771
59333-67-4	Fluoxetine (Prozac)	L220	—	0.001	**0.026**	ug/L	01/24/13 08:00	02/05/13 09:39	2764771
73334-07-3	Iopromide	L220	—	0.05	< 0.50	ug/L	01/24/13 08:00	02/05/13 09:39	2764771
11054-70-9	Lasalocid	L220	—	0.001	< 0.010	ug/L	01/24/13 08:00	02/05/13 09:39	2764771
154-21-2	Lincomycin	L220	—	0.0001	< 0.0010	ug/L	01/24/13 08:00	02/05/13 09:39	2764771
57-53-4	Meprobamate	L220	—	0.001	**0.781**	ug/L	01/24/13 08:00	02/05/13 09:39	2764771
17090-79-8	Monensin	L220	—	0.001	< 0.010	ug/L	01/24/13 08:00	02/05/13 09:39	2764771
55134-13-9	Narasin	L220	—	0.001	< 0.010	ug/L	01/24/13 08:00	02/05/13 09:39	2764771
22083-74-5	Nicotine	L220	—	0.005	**0.104**	ug/L	01/24/13 08:00	02/05/13 09:39	2764771
70458-96-7	Norfloxacin	L220	—	0.05	< 0.50	ug/L	01/24/13 08:00	02/05/13 09:39	2764771
7060-74-4	Oleandomycin	L220	—	0.001	< 0.010	ug/L	01/24/13 08:00	02/05/13 09:39	2764771
611-59-6	Paraxanthine	L220	—	0.005	**0.210**	ug/L	01/24/13 08:00	02/05/13 09:39	2764771
125-33-7	Primidone	L220	—	0.005	**1.1**	ug/L	01/24/13 08:00	02/05/13 09:39	2764771
80214-83-1	Roxithromycin	L220	—	0.001	< 0.010	ug/L	01/24/13 08:00	02/05/13 09:39	2764771
53003-10-4	Salinomycin	L220	—	0.0001	< 0.0010	ug/L	01/24/13 08:00	02/05/13 09:39	2764771
79902-63-9	Simvastatin	L220	—	0.005	< 0.050	ug/L	01/24/13 08:00	02/05/13 09:39	2764771
80-32-0	Sulfachloropyridazine	L220	—	0.005	< 0.050	ug/L	01/24/13 08:00	02/05/13 09:39	2764771
68-35-9	Sulfadiazine	L220	—	0.001	< 0.010	ug/L	01/24/13 08:00	02/05/13 09:39	2764771
122-11-2	Sulfadimethoxine	L220	—	0.0001	< 0.0010	ug/L	01/24/13 08:00	02/05/13 09:39	2764771
127-79-7	Sulfamerazine	L220	—	0.001	< 0.010	ug/L	01/24/13 08:00	02/05/13 09:39	2764771
57-68-1	Sulfamethazine	L220	—	0.001	< 0.010	ug/L	01/24/13 08:00	02/05/13 09:39	2764771
144-82-1	Sulfamethizole	L220	—	0.001	< 0.010	ug/L	01/24/13 08:00	02/05/13 09:39	2764771
723-46-6	Sulfamethoxazole	L220	—	0.001	**1.0**	ug/L	01/24/13 08:00	02/05/13 13:19	2764771
599-79-1	Sulfasalazine	L220	—	0.005	< 0.050	ug/L	01/24/13 08:00	02/05/13 09:39	2764771
72-14-0	Sulfathiazole	L220	—	0.001	< 0.010	ug/L	01/24/13 08:00	02/05/13 09:39	2764771
83-67-0	Theobromine	L220	—	0.05	**0.74**	ug/L	01/24/13 08:00	02/05/13 09:39	2764771
738-70-5	Trimethoprim	L220	—	0.001	**0.437**	ug/L	01/24/13 08:00	02/05/13 09:39	2764771
74610-55-2	Tylosin	L220	—	0.001	< 0.010	ug/L	01/24/13 08:00	02/05/13 09:39	2764771
21411-53-0	Virginiamycin M1	L220	—	0.001	< 0.010	ug/L	01/24/13 08:00	02/05/13 09:39	2764771
41859-67-0	Bezafibrate	L221	—	0.0005	< 0.0050	ug/L	01/22/13 07:45	01/25/13 20:40	2764773
56-75-7	Chloramphenicol	L221	—	0.005	< 0.050	ug/L	01/22/13 07:45	01/25/13 20:40	2764773
64-72-2	Chlorotetracycline	L221	—	0.05	< 0.50	ug/L	01/22/13 07:45	01/25/13 20:40	2764773
882-09-7	Clofibric acid	L221	—	0.0005	< 0.0050	ug/L	01/22/13 07:45	01/25/13 20:40	2764773
15307-86-5	Diclofenac	L221	—	0.0005	**0.0360**	ug/L	01/22/13 07:45	01/25/13 20:40	2764773
57-41-0	Dilantin	L221	—	0.002	**0.480**	ug/L	01/22/13 07:45	01/25/13 20:40	2764773
83038-87-3	Doxycycline	L221	—	0.05	< 0.50	ug/L	01/22/13 07:45	01/25/13 20:40	2764773
25812-30-0	Gemfibrozil	L221	—	0.0005	**0.1715**	ug/L	01/22/13 07:45	01/25/13 20:40	2764773
15687-27-1	Ibuprofen	L221	—	0.05	< 0.50	ug/L	01/22/13 07:45	01/25/13 20:40	2764773
51-48-9	Levothyroxine (Synthroid)	L221	—	0.002	< 0.020	ug/L	01/22/13 07:45	01/25/13 20:40	2764773
22204-53-1	Naproxen	L221	—	0.002	**0.030**	ug/L	01/22/13 07:45	01/25/13 20:40	2764773
2058-46-0	Oxytetracycline	L221	—	0.5	< 5.0	ug/L	01/22/13 07:45	01/25/13 20:40	2764773
61-33-6	Penicillin G	L221	—	0.002	< 0.020	ug/L	01/22/13 07:45	01/25/13 20:40	2764773
87-08-1	Penicillin V	L221	—	0.002	< 0.020	ug/L	01/22/13 07:45	01/25/13 20:40	2764773
53-03-2	Prednisone	L221	—	0.002	< 0.020	ug/L	01/22/13 07:45	01/25/13 20:40	2764773
69-72-7	Salicylic acid	L221	—	0.05	< 0.50	ug/L	01/22/13 07:45	01/25/13 20:40	2764773
60-54-8	Tetracycline	L221	—	0.5	< 5.0	ug/L	01/22/13 07:45	01/25/13 20:40	2764773
58-55-9	Theophylline	L221	—	0.005	**0.120**	ug/L	01/22/13 07:45	01/25/13 20:40	2764773

102-20-2	Triclocarban	L221	---	0.005	**0.222**	ug/L	01/22/13 07:45	01/25/13 20:40	2764773
3380-34-5	Triclosan	L221	---	0.050	< 0.500	ug/L	01/22/13 07:45	01/25/13 20:40	2764773
1222-05-5	Galaxolide	S170	---	10	**570**	ng/L	01/22/13 00:45	01/23/13 10:20	2764772
21145-77-7	Tonalid	S170	---	10	**73**	ng/L	01/22/13 00:45	01/23/13 10:20	2764772

Reference Lab Tests

Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed	UL ID #
1746-01-6	Dioxin	1613	30 *	10	< 10	pg/L	---	01/31/13 22:26	2764776

† UL has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

Lab Definitions

Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis.

Internal Standards (IS) - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

Laboratory Duplicate (LD) - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

Laboratory Fortified Blank (LFB) / Laboratory Control Sample (LCS) - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control.

Laboratory Method Blank (LMB) / Laboratory Reagent Blank (LRB) - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

Laboratory Trip Blank (LTB) / Field Reagent Blank (FRB) - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD) - is a sample aliquot taken from the same field sample source as the Matrix Spike Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix.

Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM) - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results.

Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV) - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the calibration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

Surrogate Standard (SS) / Surrogate Analyte (SUR) - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.

LABORATORY REPORT

This report contains 5 pages.
(including the cover page)

If you have any questions concerning this report, please do not hesitate to call us at (800) 332-4345 or (574) 233-4777.

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UL LLC
110 S. Hill St., South Bend, IN 46617-2702 USA
T: 800.332.4345 / F: 574.233.8207 / W: UL.com

Laboratory Report

Client: City of Wichita Falls

Attn: Mark Southard
P. O. Box 1431
Wichita Falls, TX 76307

Report: 289581
Priority: Standard Written
Status: Final
PWS ID: TX2430001

Copies to: None

Sample Information

UL ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
2752295	1005 River Road CCB	1623	12/11/12 13:15	Client	12/12/12 09:30
2752296	Lake Arrowhead	1623	12/11/12 12:45	Client	12/12/12 09:30
2752297	Lake Wichita	1623	12/11/12 13:02	Client	12/12/12 09:30

Report Summary

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not esitate to call Jim Vernon at (574) 233-4777.

Note: This report may not be reproduced, except in full, without written approval from UL.

Jim Vernon P.M.

Digitally signed by james.n.vernon@ul.com
Date: 2012.12.26 15:51:12 -05'00'

Authorized Signature | Title | Date

Client Name: City of Wichita Falls
Report #: 289581

UL LLC
110 S. Hill St., South Bend, IN 46617-2702 USA
T: 800.332.4345 / F: 574.233.8207 / W: UL.com

Client Name: City of Wichita Falls Report #: 289581

Sampling Point: 1005 River Road CCB PWS ID: TX2430001

Microbiology									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
—	Giardia	1623	—	0.500	**7.000**	cysts/L	—	12/14/12 08:20	2752295
—	Cryptosporidium	1623	—	0.500	< 0.500	oocysts/L	—	12/14/12 08:20	2752295

For method 1623: The calculated MRL value is dependant on the volume filtered and the volume analyzed for each sample.

Sampling Point: Lake Arrowhead PWS ID: TX2430001

Microbiology									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
—	Giardia	1623	—	0.091	< 0.091	cysts/L	—	12/14/12 08:20	2752296
—	Cryptosporidium	1623	—	0.091	< 0.091	oocysts/L	—	12/14/12 08:20	2752296

For method 1623: The calculated MRL value is dependant on the volume filtered and the volume analyzed for each sample.

Sampling Point: Lake Wichita PWS ID: TX2430001

Microbiology									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
—	Giardia	1623	—	0.091	< 0.091	cysts/L	—	12/14/12 08:20	2752297
—	Cryptosporidium	1623	—	0.091	< 0.091	oocysts/L	—	12/14/12 08:20	2752297

For method 1623: The calculated MRL value is dependant on the volume filtered and the volume analyzed for each sample.

† UL has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

Lab Definitions

Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis.

Internal Standards (IS) - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

Laboratory Duplicate (LD) - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

Laboratory Fortified Blank (LFB) / Laboratory Control Sample (LCS) - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control.

Laboratory Method Blank (LMB) / Laboratory Reagent Blank (LRB) - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

Laboratory Trip Blank (LTB) / Field Reagent Blank (FRB) - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD) - is a sample aliquot taken from the same field sample source as the Matrix Spike Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix.

Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM) - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results.

Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV) - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the calibration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

Surrogate Standard (SS) / Surrogate Analyte (SUR) - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.

BioVir LABORATORIES

EPA Method 1615: Measurement of Enterovirus and Norovirus Occurrence in Water by Culture and RT-qPCR
SAMPLE DATA SHEET

(Please fill out completely and return to BioVir with the sample.)
Phone: 1-800-GIARDIA Fax: 707-747-1751 www.biovir.com

Note: Please use waterproof ink

NAME AND ADDRESS OF WATER COMPANY OR UTILITY: City of Wichita Falls 4301 Big Ed Neal Wichita Falls TX 76310	SAMPLE DATE: 11/29/12
	SAMPLE TIME: 3:15
NAME OF SAMPLER: Mack McPherson	pH: 8.79 / pH (adjusted): — / pH meter model and serial no.: — ; Water Temp (C): / Temp. meter model and serial no.:
SAMPLE SOURCE: Raw Surface water	TREATMENT CHARACTERISTICS (Check One): Raw Surface Water ☒ / Treated Surface or Groundwater ☐ / Untreated Ground water ☐ / Raw Wastewater ☐ / Treated Wastewater ☐ / Other: ☐
SAMPLE LOCATION: Lake Arrowhead	DECHLORINATION / DISINFECTANT NEUTRALIZATION: (If Treated Water): Yes (No) / Free Chlorine (mg / L): / Metering pump model and serial no.: / Chlorine meter model and serial no.:
SAMPLE VOLUME: (Meter # / TURBIDITY (NTU): / Meter Start: / Meter Stop: / Turbidity (NTU):	Total Volume: 100 Gallons _____ Liters

Client ID #:	P.O. #:

ASSAY REQUESTED: Please check one of the following	
	Method 1615 Complete: Culturable Virus and RT-qPCR (EPA 600/R-10/181)
	Method 1615 Culturable Virus Only

COMMENTS: The meter did ~~dea~~ not work, so we used the volume on the cartridge to determine gallons.

RELINQUISHED BY: Ben Rainer	DATE / TIME: 11/28/12
RECEIVED BY	DATE / TIME:

SHIPPING ADDRESS: BIOVIR LABORATORIES, INC. 685 STONE ROAD, UNIT 6, BENICIA, CALIFORNIA 94510

...Cells/Datasheets/SDS Method 1615 Water and Biosolids.wpd

REPORT NO.:	121654
PAGE NO.:	3 of 4
CLIENT:	WICHITA FALLS
ADDRESS	PO Box 1431 WICHITA FALLS, TX 76307
CLIENT NO	WIC002 **CLIENT PO:**

ASSAY RESULTS:

Test: EPA 1615 PCR **Method: EPA 1615**

BioVir #	Sample ID	Site	Analyte	Result	Units
121654-002		Raw Surface Water	Norovirus GIA (PCR)	Non-detect/15.6L	

Collector: Mack McPherson CollectDate 11/29/2012 CollectTime: 3:15:00 AM
ReceiveDate 11/30/2012 9:55:00 AM Matrix: Raw Water Temp 0.0
Volume: 378.5 L Analysis Start Date: 12/12/12 Analysis Start Time: 1500
Analyst: RNewton Analysis End: 1/4/2012

Comment Rec'd. I button read: -0.5 deg. C. in transit; Client contacted. Per e-mail from Mark Southard, OK to run as rec'd.; confirmed analysis req'd; volume calculations.

BioVir #	Sample ID	Site	Analyte	Result	Units
121654-002		Raw Surface Water	Norovirus GIB (PCR)	Non-detect/15.6L	

Collector: Mack McPherson CollectDate 11/29/2012 CollectTime: 3:15:00 AM
ReceiveDate 11/30/2012 9:55:00 AM Matrix: Raw Water Temp 0.0
Volume: 378.5 L Analysis Start Date: 12/12/12 Analysis Start Time: 1500
Analyst: RNewton Analysis End: 1/4/2012

Comment Rec'd. I button read: -0.5 deg. C. in transit; Client contacted. Per e-mail from Mark Southard, OK to run as rec'd.; confirmed analysis req'd; volume calculations.

BioVir #	Sample ID	Site	Analyte	Result	Units
121654-002		Raw Surface Water	Norovirus GII (PCR)	Non-detect/15.6L	

Collector: Mack McPherson CollectDate 11/29/2012 CollectTime: 3:15:00 AM
ReceiveDate 11/30/2012 9:55:00 AM Matrix: Raw Water Temp 0.0
Volume: 378.5 L Analysis Start Date: 12/12/12 Analysis Start Time: 1500
Analyst: RNewton Analysis End: 1/4/2012

Comment Rec'd. I button read: -0.5 deg. C. in transit; Client contacted. Per e-mail from Mark Southard, OK to run as rec'd.; confirmed analysis req'd; volume calculations.

REPORT NO.:	121654
PAGE NO.:	4 of 4
CLIENT:	WICHITA FALLS
ADDRESS	PO Box 1431 WICHITA FALLS, TX 76307
CLIENT NO	WIC002 **CLIENT PO:**

ASSAY RESULTS:

SAMPLE EVALUATION PERFORMANCE CRITERIA: The precise rates of recovery of organisms from environmental samples cannot be determined. B ioVir Laboratories has analyzed your sample(s) in accordance with the method described with each analyte above, however, due to inherent limitations of these methods organisms may avoid detection. For additional information regarding the limitations of the method(s) referred to above please call us at 1-800-GIARDIA.

COMPANY IS NOT AN INSURER: BioVir Laboratories is not an insurer or guarantor of the quality and/or purity of water, wastewater, biosolid or other material from which the sample was taken. BioVir offers no express or implied warranties whatsoever concerning the quality or purity of any water, wastewater, biosolid or other material which is ultimately consumed, distributed, applied or disposed.

MAINTENANCE OF RECORDS: BioVir Laboratories, Inc. shall maintain records pertaining to the historical reconstruction of client's data for a minimum of five years from the date of issuance of the final report. Records m ay be destroyed after that date unless a written client's request for records transfer is received by BioVir which requests otherwise. Records transfer or storage charges may apply after the 5 year period. THIS REPORT SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF BIOVIR LABORATORIES, INC.

1/29/2013

Date:

Richard E Daniel

Signature

Quality Checked DCelio

BioVir LABORATORIES

EPA Method 1615: Measurement of Enterovirus and Norovirus Occurrence in Water by Culture and RT-qPCR
SAMPLE DATA SHEET

(Please fill out completely and return to BioVir with the sample.)
Phone: 1-800-GIARDIA Fax: 707-747-1751 www.biovir.com

Note: Please use waterproof ink

NAME AND ADDRESS OF WATER COMPANY OR UTILITY: City of Wichita Falls 4801 Big Ed Road Wichita Falls, TX 76310	SAMPLE DATE: 11/28/12
	SAMPLE TIME: 2:00
NAME OF SAMPLER: Mack McPherson	pH: / pH (adjusted): / pH meter model and serial no.: / Water Temp (C): 12°C / Temp. meter model and serial no.:
SAMPLE SOURCE: Wastewater Effluent	TREATMENT CHARACTERISTICS (Check One): Raw Surface Water ☐ Raw Wastewater ☐ Treated Surface or Groundwater ☐ Treated Wastewater ☒ Untreated Ground water ☐ Other: ☐
SAMPLE LOCATION: Wastewater Effluent	DECHLORINATION / DISINFECTANT NEUTRALIZATION: (If Treated Water): Yes No Free Chlorine (mg / L): / Metering pump model and serial no.: / Chlorine meter model and serial no.:
SAMPLE VOLUME: (Meter #) TURBIDITY (NTU): Meter Start: ~~61.8~~ 61.50 Meter Stop: 61.82 Turbidity (NTU):	Total Volume: ____ Gallons ~~20~~ 120 Liters

Client ID #:	P.O. #:

ASSAY REQUESTED: Please check one of the following	
	Method 1615 Complete: Culturable Virus and RT-qPCR (EPA 600/R-10/181)
	Method 1615 Culturable Virus Only.

COMMENTS:

[illegible]

RELINQUISHED BY: Blair Ramon	DATE / TIME: 11/29/12
RECEIVED BY	DATE / TIME

SHIPPING ADDRESS: BIOVIR LABORATORIES, INC., 685 STONE ROAD, UNIT 6, BENICIA, CALIFORNIA 94510

CLIENT: WICHITA FALLS
ADDRESS PO Box 1431
WICHITA FALLS, TX 76307
CLIENT NO WIC002 **CLIENT PO:**

ASSAY RESULTS:

Test: EPA 1615 PCR **Method: EPA 1615**

BioVir #	Sample ID	Site	Analyte	Result	Units
121654-001		Wastewater Effluent	Norovirus GIA (PCR)	Non-detect/15.6L	

Collector: Mack McPherson CollectDate 11/28/2012 CollectTime: 2:00:00 AM
ReceiveDate 11/30/2012 9:55:00 AM Matrix: Waste Water, treated Temp 0.0
Volume: 121 L Analysis Start Date: 12/12/12 Analysis Start Time: 1500
Analyst: RNewton Analysis End: 1/4/2013

Comment Rec'd. I button read: -0.5 deg C. in transit. Client contacted. OK to run, per e-mail from Mark Southard; confirmed smp date 11/28/12; confirmed analysis req'd.

121654-001		Wastewater Effluent	Norovirus GIB (PCR)	Non-detect/15.6L	

Collector: Mack McPherson CollectDate 11/28/2012 CollectTime: 2:00:00 AM
ReceiveDate 11/30/2012 9:55:00 AM Matrix: Waste Water, treated Temp 0.0
Volume: 121 L Analysis Start Date: 12/12/12 Analysis Start Time: 1500
Analyst: RNewton Analysis End: 1/4/2013

Comment Rec'd. I button read: -0.5 deg C. in transit. Client contacted. OK to run, per e-mail from Mark Southard; confirmed smp date 11/28/12; confirmed analysis req'd.

121654-001		Wastewater Effluent	Norovirus GII (PCR)	Non-detect/15.6L	

Collector: Mack McPherson CollectDate 11/28/2012 CollectTime: 2:00:00 AM
ReceiveDate 11/30/2012 9:55:00 AM Matrix: Waste Water, treated Temp 0.0
Volume: 121 L Analysis Start Date: 12/12/12 Analysis Start Time: 1500
Analyst: RNewton Analysis End: 1/4/2013

Comment Rec'd. I button read: -0.5 deg C. in transit. Client contacted. OK to run, per e-mail from Mark Southard; confirmed smp date 11/28/12; confirmed analysis req'd.

121654-002		Raw Surface Water	Enterovirus (PCR)	Non-detect/15.6L	

Collector: Mack McPherson CollectDate 11/29/2012 CollectTime: 3:15:00 AM
ReceiveDate 11/30/2012 9:55:00 AM Matrix: Raw Water Temp 0.0
Volume: 378.5 L Analysis Start Date: 12/12/12 Analysis Start Time: 1500
Analyst: RNewton Analysis End: 1/4/2012

Comment Rec'd. I button read: -0.5 deg. C. in transit; Client contacted. Per e-mail from Mark Southard, OK to run as rec'd.; confirmed analysis req'd; volume calculations.

BioVir Laboratories, Inc

NELAC #05234CA
EPA ID# 01401, CA-ELAP #179

685 Stone Road, Unit 6 • Benicia, CA 94510 • (707) 747-5906 • 1-800-GIARDIA • FAX (707) 747-1751 • WEB: www.biovir.com

REPORT NO.: 121654
PAGE NO.: 1 of 4
CLIENT: WICHITA FALLS
ADDRESS PO Box 1431
WICHITA FALLS, TX 76307
CLIENT NO WIC002 **CLIENT PO:**

ASSAY RESULTS:

Test: EPA 1615 Culture Method: EPA 1615

BioVir #	Sample ID	Site	Analyte	Result	Units
121654-001		Wastewater Effluent	Total Culturable Virus	<0.03	MPN/L

Collector: Mack McPherson CollectDate 11/28/2012 CollectTime: 2:00:00 AM
ReceiveDate 11/30/2012 9:55:00 AM Matrix: Waste Water, treated Temp 0.0
Volume: 121 L Analysis Start Date: 11/30/12 Analysis Start Time: 1231
Analyst: ValentinaL Analysis End: 1/9/2013

Comment Rec'd. I button read: -0.5 deg C. in transit. Client contacted. OK to run, per e-mail from Mark Southard; confirmed smp date 11/28/12; confirmed analysis req'd.

121654-002		Raw Surface Water	Total Culturable Virus	<0.01	MPN/L

Collector: Mack McPherson CollectDate 11/29/2012 CollectTime: 3:15:00 AM
ReceiveDate 11/30/2012 9:55:00 AM Matrix: Raw Water Temp 0.0
Volume: 378.5 L Analysis Start Date: 11/30/12 Analysis Start Time: 1356
Analyst: ValentinaL Analysis End: 1/9/2013

Comment Rec'd. I button read: -0.5 deg. C. in transit; Client contacted. Per e-mail from Mark Southard, OK to run as rec'd.; confirmed analysis req'd; volume calculations.

Test: EPA 1615 PCR Method: EPA 1615

BioVir #	Sample ID	Site	Analyte	Result	Units
121654-001		Wastewater Effluent	Enterovirus (PCR)	Non-detect/15.6L	

Collector: Mack McPherson CollectDate 11/28/2012 CollectTime: 2:00:00 AM
ReceiveDate 11/30/2012 9:55:00 AM Matrix: Waste Water, treated Temp 0.0
Volume: 121 L Analysis Start Date: 12/12/12 Analysis Start Time: 1500
Analyst: RNewton Analysis End: 1/4/2013

Comment Rec'd. I button read: -0.5 deg C. in transit. Client contacted. OK to run, per e-mail from Mark Southard; confirmed smp date 11/28/12; confirmed analysis req'd.

eurofins
Eaton Analytical
formerly IWR Laboratories

Acknowledgement of Samples Received

Addr: **City of Wichita Falls**
4801 Big Ed Neal Dr
Wichita Falls, TX 76310

Client ID: WICHITA-TX
Folder #: 416854
Project: WASTEWATER_REUSE
Sample Group: REUSE STUDY

Attn: Mark Southard
Phone: 940-691-1153

Project Manager: Cam P Pham
Phone: (909) 254-0381

The following samples were received from you on **November 29, 2012**. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact your service representative. Thank you for using Eurofins Eaton Analytical.

Sample #	Sample ID	Sample Date
201211290119	WASTEWATER EFFLUENT (24HR COMPOSITE)	11/28/2012 1600

Chlorpyrifos	Demeton-O	Demeton-S
Diazinon	@508EDD plus Oxyfluorphen	@515_4-REG
@525_ADDITIONAL	@525PLUS C	@532-LCMS
@551_EDB-DBCP	@8270SCR C	@TBTEDD Subbed
@VOAPP C	2-Chloroethylvinylether by 8260	Ammonia Nitrogen
Ammonium ion (as N) at 25C	Asbestos by TEM - >10 microns	Chromium III (Calculated)
Chromium Total ICAP/MS	Cyanide by manual distillation	Hexavalent chromium(Dissolved)
Nickel Total ICAP/MS	Orthophosphate as P (OPO4)	PH (H3=past HT not compliant)
Phenolic Compounds	Silica	

Test Description

@508EDD plus Oxyfluorphen -- @508EDD plus Oxyfluorphen

@515_4-REG -- Chlorophenoxy Herbicides

@525_ADDITIONAL -- EPA 525 N/P Pesticides

@525PLUS C -- Semivolatiles by GCMS

@532-LCMS -- Sulfonyl Urea Compounds

@551_EDB-DBCP -- EDB/DBCP/HAN by EPA 551.1

@8270SCR C -- 8270 Semivolatile, Screen, TIC

@TBTEDD Subbed -- Tributyltin

@VOAPP C -- Volatile Organics by EPA 624

eurofins | Eaton Analytical
formerly MWH Laboratories

750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
Tel: (626) 386-1100
Fax: (626) 386-1101
1 800 566 LABS (1 800 566 5227)

Laboratory Report

for

City of Wichita Falls
4801 Big Ed Neal Dr
Wichita Falls, TX 76310
Attention: Mark Southard
Fax: 940-691-4121

Date of Issue
12/26/2012

EUROFINS EATON
ANALYTICAL

NELAP ACCREDITED TNI LABORATORY
01114CA

Report: 416854
Project: WASTEWATER_REUSE
Group: REUSE STUDY

CPP: Cam P Pham

Project Manager

Laboratory certifies that the test results meet all **TNI NELAP** requirements unless noted in the Comments section or the Case Narrative. Following the cover page are Hits Reports, Comments, QC Summary, QC Report and Regulatory Forms. This report shall not be reproduced except in full, without the written approval of the laboratory.

STATE CERTIFICATION LIST

State	Certification Number	State	Certification Number
Alabama	41060	**Mississippi**	Certified
Alaska	CA00006	**Montana**	Cert 0035
Arizona	AZ0778	**Nevada**	CA00006-2012-1
Arkansas	Certified	**New Hampshire**	2959-11
California – NELAP	01114CA	**New Jersey**	CA 008
California – ELAP	1422	**New Mexico**	Certified
Colorado	Certified	**New York**	11320
Connecticut	PH-0107	**North Carolina**	06701
Delaware	CA 006	**North Dakota**	R-009
Florida	E871024	**Oregon**	CA 200003-010
Georgia	947	**Pennsylvania**	68-565
Guam	11-004r	**Rhode Island**	01114CA
Hawaii	Certified	**South Carolina**	87016001
Idaho	Certified	**South Dakota**	Certified
Illinois	200033	**Tennessee**	TN02839
Indiana	C-CA-01	**Texas**	T104704230-11-2
Kansas	E-10268	**Utah**	Mont-1
Kentucky	90107	**Vermont**	VT0114
Louisiana	LA110022	**Virginia**	00210
Maine	CA0006	**Washington**	C383
Maryland	224	**West Virginia**	9943 C
Commonwealth of Northern Marianas Is.	MP0004	**Wisconsin**	998316660
Massachusetts	M-CA006	**Wyoming**	8TMS-L
Michigan	9906	**EPA Region 5**	Certified

eurofins | Eaton Analytical
formerly STL Laboratories

Acknowledgement of Samples Received

Addr: **City of Wichita Falls**
4801 Big Ed Neal Dr
Wichita Falls, TX 76310

Client ID: WICHITA-TX
Folder #: 416854
Project: WASTEWATER_REUSE
Sample Group: REUSE STUDY

Attn: Mark Southard
Phone: 940-691-1153

Project Manager: Cam P Pham
Phone: (909) 254-0381

The following samples were received from you on **November 29, 2012**. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact your service representative. Thank you for using Eurofins Eaton Analytical.

Sample #	Sample ID	Sample Date
201211290119	WASTEWATER EFFLUENT (24HR COMPOSITE)	11/28/2012 1600

Chlorpyrifos	Demeton-O	Demeton-S
Diazinon	@508EDD plus Oxyfluorphen	@515_4-REG
@525_ADDITIONAL	@525PLUS C	@532-LCMS
@551_EDB-DBCP	@8270SCR C	@TBTEDD Subbed
@VOAPP C	2-Chloroethylvinylether by 8260	Ammonia Nitrogen
Ammonium ion (as N) at 25C	Asbestos by TEM - >10 microns	Chromium III (Calculated)
Chromium Total ICAP/MS	Cyanide by manual distillation	Hexavalent chromium(Dissolved)
Nickel Total ICAP/MS	Orthophosphate as P (OPO4)	PH (H3=past HT not compliant)
Phenolic Compounds	Silica	

Test Description

@508EDD plus Oxyfluorphen -- @508EDD plus Oxyfluorphen

@515_4-REG -- Chlorophenoxy Herbicides

@525_ADDITIONAL -- EPA 525 N/P Pesticides

@525PLUS C -- Semivolatiles by GCMS

@532-LCMS -- Sulfonyl Urea Compounds

@551_EDB-DBCP -- EDB/DBCP/HAN by EPA 551.1

@8270SCR C -- 8270 Semivolatile, Screen, TIC

@TBTEDD Subbed -- Tributyltin

@VOAPP C -- Volatile Organics by EPA 624

eurofins | Eaton Analytical

CHAIN OF CUSTODY RECORD

416854

750 Royal Oaks Drive, Suite 100
Monrovia, CA 91016-3629

Phone: 626 386 1100
Fax: 626 386 1101

800 566 LABS (800 566 5227)

Website: www.EatonAnalytical.com

EUROFINS EATON ANALYTICAL USE ONLY:

LOGIN COMMENTS: _____

SAMPLES CHECKED AGAINST COC BY: _____

SAMPLES LOGGED IN BY: _____

SAMPLES REC'D DAY OF COLLECTION? ☐ (check for yes)

SAMPLE TEMP RECEIVED AT:

☐ Colton / No. California / Arizona _____ °C (Compliance: 4 ± 2 °C)

☑ Monrovia 4.2 °C (Compliance: 4 ± 2 °C)

CONDITION OF BLUE ICE: Frozen _____ Partially Frozen _____ Thawed _____ Wet Ice _____ No Ice _____

METHOD OF SHIPMENT: Pick-Up / Walk-In / FedEx / UPS / DHL / Area Fast / Top Line / Other: _____

TO BE COMPLETED BY SAMPLER:

COMPANY/AGENCY NAME: City of Wichita Falls

PROJECT CODE: Wastewater Reuse

EEA CLIENT CODE: Wichita-TX

COC ID:

SAMPLE GROUP: WASTEWATER Effluent

TAT requested: rush by adv notice only STD ___ 1 wk ___ 3 day ___ 2 day ___ 1 day ___

COMPLIANCE SAMPLES ☐ (check for yes) - Requires state forms ☐

NON-COMPLIANCE SAMPLES ☒ (check for yes)

REGULATION INVOLVED: _____

Type of samples (circle one): ROUTINE SPECIAL CONFIRMATION (eg. SDWA, Phase V, NPDES, FDA...)

SEE ATTACHED BOTTLE ORDER FOR ANALYSES ☒ (check for yes), *OR*

list ANALYSES REQUIRED (enter number of bottles sent for each test for each sample)

SAMPLE DATE	SAMPLE TIME	SAMPLE ID	CLIENT LAB ID	MATRIX *	FIELD DATA	FIELD DATA	SAMPLER COMMENTS
11-28	12	Wastewater effluent (24 hour composite sample)		FW			
		X ON LABELS					

* **MATRIX TYPES:** RSW = Raw Surface Water; RGW = Raw Ground Water; CFW = Chlor(am)inated Finished Water; FW = Other Finished Water; SEAW = Sea Water; WW = Waste Water; BW = Bottled Water; SW = Storm Water; SO = Soil; SL = Sludge; O = Other - Please Identify

	SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
SAMPLED BY:	Blair Ramon	Blair Ramon	Lab Supervisor	11/28/12	4:20
RELINQUISHED BY:	Blair Ramon	Blair Ramon	Lab Supervisor	11/28/12	5:15
RECEIVED BY:		Joe Sanchez	EEA	11/29/12	12:4
RELINQUISHED BY:					
RECEIVED BY:					

PAGE ___ OF ___

Eurofins
Eaton Analytical
formerly STL Monrovia
750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
(626) 386-1100 FAX (626) 386-1101

Kit Order for City of Wichita Falls

Cam P Pham is your Eurofins Eaton Analytical Project Manager

Note: Sampler Please return this paper with your samples

Kit #: 59370
Created By: CPP
Order Date: 11/26/2012
Ship By: Bottle Orders
STG:

Client ID: WICHITA-TX
Project Code: WASTEWATER_REUSE Bottle Orders
Group Name: REUSE STUDY
PO#/JOB#:

Ship Sample Kits to
City of Wichita Falls
4801 Big Ed Neal Dr
Wichita Falls, TX 76310

Attn: Mark Southard
Phone: 940-691-1153
Fax: 940-691-4121

Send Report to
City of Wichita Falls
4801 Big Ed Neal Dr
Wichita Falls, TX 76310

Attn: Mark Southard
Phone: 940-691-1153
Fax: 940-691-4121

Billing Address
City of Wichita Falls
4801 Big Ed Neal Dr
Wichita Falls, TX 76310

Attn: Mark Southard
Phone: 940-691-1153
Fax: 940-691-4121

# of Sample	Tests	Bottles - Qty for each sample, type & preservative if a	UN DOT #
3	@508EDD plus Oxyfluorphen	2 1L amber glass no preservative	
3	@515_4-REG	2 125ml amber glass 7mg SULFITE xis	
1	@525_ADDITIONAL	2 1L amber glass 2ml of 6N HCl	UN1789
2	@525_ADDITIONAL, @525PLUS	2 1L amber glass 2ml of 6N HCl	UN1789
1	@525PLUS C	2 1L amber glass 45mg Sulfite xis+1 vial 2 ml 6N HCl	UN1789
3	@532-LCMS	2 40ml amber glass vial TRIZMA + CuSO4	
3	@551_EDB-DBCP	3 60ml amber glass EDB1g(1%NaP/99%KP)+0.6%NH4CL	
2	@8270SCR	2 1L amber glass BNA_NO_PRESERVATIVE	
1	@8270SCR C	2 1L amber glass BNA_1ML_THIO	
3	@TBTEDB Subbed	2 1L amber glass 1.5ml HCL (6N)	UN1789
1	@VOAPP C	4 40ml amber glass vial 1 drop 8% thio+2ml BOT 1:1 HCL	UN1789
1	@VOAPP C	4 40ml amber glass vial 25mg Ascorbic+drop 2ml 1:1 HCL	UN1789
2	@VOAPP, @VOAPP	4 40ml amber glass vial 4drops 6N HCL (36%)	UN1789
3	2-Chloroethylvinylether by 8260	3 40 ml VOA vial 2CEVE5_NO_PRESERVATIVE	
3	Ammonia Nitrogen	1 250ml poly 0.5ml H2SO4 (50%)	UN1830
3	Asbestos by TEM - >10 microns	1 1L poly sonicated no preservative	
3	Chlorpyrifos, Demeton-O, Demeton-S, Diazinon	2 1L amber glass 8141WRD_NO_PRESERVATIVE	
3	Chromium Total ICAP/MS, Nickel Total ICAP/MS, Silica, Silica	1 500ml acid poly 2ml HNO3 (18%)	UN2031
3	Cyanide by manual distillation	1 250 ml poly 2 ml NaOH (30%)+6 scoops AA	
	Hexavalent Chromium (Dissolved)	1 125ml poly 1ml NH4SO4/NH4OH buffer	UN1824
	Orthophosphate as P	1 125ml poly OPO4_no preservative	
	Phenolic Compounds	1 250ml amber glass 1ml H2SO4	UN1830

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Kit Order for City of Wichita Falls

Cam P Pham is your Eurofins Eaton Analytical Project Manager

Note: Sampler Please return this paper with your samples

Kit #: 59370
Created By: CPP
Order Date: 11/26/2012
Ship By: 11/16/2012
STG: Bottle Orders

Client ID: WICHITA-TX
Project Code: WASTEWATER_REUSE Bottle Orders
Group Name: REUSE STUDY
PO#/JOB#:

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Attn: Mark Southard
Phone: 940-691-1153
Fax: 940-691-4121

# of Sample	Tests	Bottles - Qty for each sample, type & preservative if a	UN DOT #

Comments

SHIPPING - BOTTLES NEEDED BY 11/26.

Code	Status	Date Shipped	Via	Tracking #	# of Coolers	Prepared By

FedEx Express . US Airbill

8592 2461 5440

0200

FedEx Retrieval Copy

1 From

Date

Sender's FedEx Account Number

Sender's Name

Phone

Company

Address

Dept./Floor/Suite/Room

City

State

ZIP

2 Your Internal Billing Reference

3 To

Recipient's Name

Phone

Company

Recipient's Address

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Dept./Floor/Suite/Room

Address

To request a package be held at a specific FedEx location, print FedEx address here.

City

State

ZIP

8592 2461 5440

4a Express Package Service

Packages up to 150 lbs.

1 FedEx Priority Overnight

2 FedEx Standard Overnight

6 FedEx First Overnight

3 FedEx 2Day

20 FedEx Express Saver

4b Express Freight Service

Packages over 150 lbs.

7 FedEx 1Day Freight

8 FedEx 2Day Freight

83 FedEx 3Day Freight

5 Packaging

6 FedEx Envelope*

2 FedEx Pak*

3 FedEx Box

4 FedEx Tube

1 Other

6 Special Handling

3 SATURDAY Delivery

1 HOLD Weekday at FedEx Location

31 HOLD Saturday at FedEx Location

No 4 Yes

Yes

6 Dry Ice

Cargo Aircraft Only

7 Payment Bill to:

1 Sender

2 Recipient

3 Third Party

4 Credit Card

5 Cash/Check

Total Packages

Total Weight

Total Charges

8 NEW Residential Delivery Signature Options

No Signature Required

10 Direct Signature

34 Indirect Signature

520

Page 7 of 72 pages

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Laboratory Comments
Report: 416854

City of Wichita Falls
Mark Southard
4801 Big Ed Neal Dr
Wichita Falls, TX 76310

Folder Comments

201211290119 @8270 TICs: ND
Analytical results for Pesticides by SW-846 8141B are submitted Eurofins Lancaster Laboratories, Lancaster PA
Analytical results for Tributyl Tin are submitted by EBMUD, Oakland, CA CA ELAP # 1060
Analytical results for 508 are submitted by APPL Labs, Clovis, CA

Flags Legend:

LE - MRL Check recovery was above laboratory acceptance limits.

LK - The associated blank spike recovery was above method acceptance limits. This target analyte was not detected in the sample.

M1 - Matrix spike recovery was high, the associated blank spike recovery was acceptable.

S4 - Surrogate recovery was above laboratory and method acceptance limits. No target analytes were detected in the sample.

SA - Surrogate recovery was above laboratory and method acceptance limits. Re-extraction and or re-analysis confirms high recovery caused by matrix effect.

The Comments Report may be blank if there are no comments for this report.

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Laboratory Hits
Report: 416854

City of Wichita Falls
Mark Southard
4801 Big Ed Neal Dr
Wichita Falls, TX 76310

Samples Received on:
11/29/2012

Analyzed	Analyte	Sample ID	Result		
	2012112900119	WASTEWATER EFFLUENT (24HR COMPOSITE)			
12/05/2012 15:58	Ammonia Nitrogen		0.15	mg/L	0.05
12/05/2012 08:14	Ammonium ion (as N) at 25C		0.15	mg/L	0.01
12/07/2012 20:05	Bromoform		7.8	ug/L	0.5
12/07/2012 20:05	Chlorodibromomethane		18	ug/L	0.5
12/07/2012 20:05	Chloroform (Trichloromethane)		6.8	ug/L	0.5
11/30/2012 10:56	Hexavalent chromium(Dissolved)		0.025	ug/L	0.02
12/03/2012 13:48	Nickel Total ICAP/MS		5.0	ug/L	5
11/29/2012 15:54	Orthophosphate as P		0.35	mg/L	0.01
12/04/2012 14:05	PH (H3=past HT not compliant)		7.3	Units	0.1
12/04/2012 20:48	Silica		8.2	mg/L	0.5

SUMMARY OF POSITIVE DATA ONLY

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Laboratory Data
Report: 416854

City of Wichita Falls
Mark Southard
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Wichita Falls, TX 76310

Samples Received on:
11/29/2012

Prepared	Analyzed	QC Ref #	Method	Analyte	Result	Units	MRL	Dilution
WASTEWATER EFFLUE						**Sampled on 11/28/2012 1600**		
		SM (21) 6710B - Tributyltin						
12/4/2012	12/07/2012	22:21	(SM (21) 6710B)	Tributyltin	ND	ug/L	0.005	1
		EPA 508 - @508EDD plus Oxyfluorphen						
12/3/2012	12/12/2012	00:00	(EPA 508)	2,4-DDD	ND	ug/L	0.05	1
12/3/2012	12/12/2012	00:00	(EPA 508)	2,4-DDE	ND	ug/L	0.05	1
12/3/2012	12/12/2012	00:00	(EPA 508)	2,4-DDT	ND	ug/L	0.02	1
12/3/2012	12/12/2012	00:00	(EPA 508)	4,4-DDE	ND	ug/L	0.01	1
12/3/2012	12/12/2012	00:00	(EPA 508)	4,4-DDT	ND	ug/L	0.02	1
12/3/2012	12/12/2012	00:00	(EPA 508)	4,4-TDE-DDD	ND	ug/L	0.02	1
12/3/2012	12/12/2012	00:00	(EPA 508)	a-BHC	ND	ug/L	0.05	1
12/3/2012	12/12/2012	00:00	(EPA 508)	Alachlor	ND	ug/L	0.1	1
12/3/2012	12/12/2012	00:00	(EPA 508)	Aldrin	ND	ug/L	0.05	1
12/3/2012	12/12/2012	00:00	(EPA 508)	b-BHC	ND	ug/L	0.05	1
12/3/2012	12/12/2012	00:00	(EPA 508)	Benefin	ND	ug/L	0.1	1
12/3/2012	12/12/2012	00:00	(EPA 508)	Captan	ND	ug/L	0.1	1
12/3/2012	12/12/2012	00:00	(EPA 508)	Carbophenothion	ND	ug/L	0.05	1
12/3/2012	12/12/2012	00:00	(EPA 508)	Chlordane	ND	ug/L	0.05	1
12/3/2012	12/12/2012	00:00	(EPA 508)	Chlorothalonil	ND	ug/L	0.05	1
12/3/2012	12/12/2012	00:00	(EPA 508)	d-BHC	ND	ug/L	0.05	1
12/3/2012	12/12/2012	00:00	(EPA 508)	Dicofol	ND	ug/L	0.1	1
12/3/2012	12/12/2012	00:00	(EPA 508)	Dieldrin	ND	ug/L	0.02	1
12/3/2012	12/12/2012	00:00	(EPA 508)	Endosulfan I	ND	ug/L	0.02	1
12/3/2012	12/12/2012	00:00	(EPA 508)	Endosulfan II	ND	ug/L	0.01	1
12/3/2012	12/12/2012	00:00	(EPA 508)	Endosulfan Sulfate	ND	ug/L	0.05	1
12/3/2012	12/12/2012	00:00	(EPA 508)	Endrin	ND	ug/L	0.05	1
12/3/2012	12/12/2012	00:00	(EPA 508)	Endrin Aldehyde	ND	ug/L	0.05	1
12/3/2012	12/12/2012	00:00	(EPA 508)	Endrin Ketone	ND	ug/L	0.05	1
12/3/2012	12/12/2012	00:00	(EPA 508)	g-BHC	ND	ug/L	0.05	1
12/3/2012	12/12/2012	00:00	(EPA 508)	Heptachlor	ND	ug/L	0.01	1
12/3/2012	12/12/2012	00:00	(EPA 508)	Heptachlor Epoxide	ND	ug/L	0.01	1
12/3/2012	12/12/2012	00:00	(EPA 508)	hexachlorobenzene	ND	ug/L	0.05	1
12/3/2012	12/12/2012	00:00	(EPA 508)	Methoxychlor	ND	ug/L	0.05	1
12/3/2012	12/12/2012	00:00	(EPA 508)	Nitrofen	ND	ug/L	0.05	1
12/3/2012	12/12/2012	00:00	(EPA 508)	Oxyfluorphen	ND	ug/L		1
12/3/2012	12/12/2012	00:00	(EPA 508)	PCB-1016	ND	ug/L	0.5	1

Rounding on totals after summation.
(c) - indicates calculated results

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Laboratory Data
Report: 416854

City of Wichita Falls
Mark Southard
4801 Big Ed Neal Dr
Wichita Falls, TX 76310

Samples Received on:
11/29/2012

Prepared	Analyzed	QC Ref #	Method	Analyte	Result	Units	MRL	Dilution
12/3/2012	12/12/2012 00:00		(EPA 508)	PCB-1221	ND	ug/L	0.5	1
12/3/2012	12/12/2012 00:00		(EPA 508)	PCB-1232	ND	ug/L	0.5	1
12/3/2012	12/12/2012 00:00		(EPA 508)	PCB-1242	ND	ug/L	0.5	1
12/3/2012	12/12/2012 00:00		(EPA 508)	PCB-1248	ND	ug/L	0.5	1
12/3/2012	12/12/2012 00:00		(EPA 508)	PCB-1254	ND	ug/L	0.5	1
12/3/2012	12/12/2012 00:00		(EPA 508)	PCB-1260	ND	ug/L	0.5	1
12/3/2012	12/12/2012 00:00		(EPA 508)	PCNB	ND	ug/L	0.05	1
12/3/2012	12/12/2012 00:00		(EPA 508)	Propachlor	ND	ug/L	0.1	1
12/3/2012	12/12/2012 00:00		(EPA 508)	Toxaphene	ND	ug/L	0.5	1
			EPA 8141 - Demeton-O by 8141					
	12/07/2012 00:15		(EPA 8141)	Demeton-o	ND (U)	ug/L	1.9	1
			EPA 8141 - Demeton-S by 8141					
	12/07/2012 00:15		(EPA 8141)	Demeton-s	ND (U)	ug/L	2.8	1
			EPA 8141 - Chlorpyrifos by 8141					
	12/07/2012 00:15		(EPA 8141)	Chlorpyrifos	ND (U)	ug/L	2.8	1
			EPA 8141 - Diazinon by 8141					
	12/07/2012 00:15		(EPA 8141)	Diazinon	ND (U)	ug/L	5.6	1
			EPA 200.8 - ICPMS Metals					
11/30/2012	12/03/2012 13:48	683377	(EPA 200.8)	Chromium Total ICAP/MS	ND	ug/L	1	1
11/30/2012	12/03/2012 13:48	683377	(EPA 200.8)	Nickel Total ICAP/MS	5.0	ug/L	5	1
			EPA 200.7 - ICP Metals					
11/30/2012	12/04/2012 20:48	683511	(EPA 200.7)	Silica	8.2	mg/L	0.5	1
			EPA 100.2 - Asbestos by TEM - >10 microns					
11/29/2012	12/03/2012 00:00	683480	(EPA 100.2)	Asbestos by TEM - >10 microns	ND	MFL	3.7	1
			Calculated - Ammonium ion (as N) at 25C					
	12/05/2012 08:14		(Calculated)	Ammonium ion (as N) at 25C	0.15	mg/L	0.01	1
			EPA 200.8 - Chromium III (Calculated)					
	12/03/2012 15:08		(EPA 200.8)	Chromium III (Calculated)	ND	ug/L	1	1
			EPA 515.4 - Chlorophenoxy Herbicides					
12/5/2012	12/06/2012 00:34	683756	(EPA 515.4)	2,4,5-TP (Silvex)	ND	ug/L	0.2	1
12/5/2012	12/06/2012 00:34	683756	(EPA 515.4)	2,4-D	ND	ug/L	0.1	1
12/5/2012	12/06/2012 00:34	683756	(EPA 515.4)	Bentazon	ND	ug/L	0.5	1
12/5/2012	12/06/2012 00:34	683756	(EPA 515.4)	Dalapon	ND	ug/L	1	1
12/5/2012	12/06/2012 00:34	683756	(EPA 515.4)	Dinoseb	ND	ug/L	0.2	1
12/5/2012	12/06/2012 00:34	683756	(EPA 515.4)	Pentachlorophenol	ND	ug/L	0.04	1
12/5/2012	12/06/2012 00:34	683756	(EPA 515.4)	Picloram	ND	ug/L	0.1	1
			EPA 551.1 - EDB/DBCP/HAN by EPA 551.1					

Rounding on totals after summation.
(c) - indicates calculated results

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Laboratory Data
Report: 416854

City of Wichita Falls
Mark Southard
4801 Big Ed Neal Dr
Wichita Falls, TX 76310

Samples Received on:
11/29/2012

Prepared	Analyzed	QC Ref #	Method	Analyte	Result	Units	MRL	Dilution
12/4/2012	12/05/2012 05:09	683403	(EPA 551.1)	Dibromochloropropane (DBCP)	ND (S4,SA)	ug/L	0.01	1
12/4/2012	12/05/2012 05:09	683403	(EPA 551.1)	Ethylene Dibromide (EDB)	ND (S4,SA)	ug/L	0.01	1
12/4/2012	12/05/2012 05:09	683403	(EPA 551.1)	1,2-Dibromopropane	175 (S4,SA)	%		1
		SW 8270C - 8270 Semivolatile, Screen, TIC						
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	1,2,4,5-Tetrachlorobenzene Scr	ND	ug/L	10	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	1,2,4-Trichlorobenzene	ND	ug/L	5	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	1,2-Diphenylhydrazine	ND	ug/L	10	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	1,3,5-Trinitrobenzene Screen	ND	ug/L	10	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	1,3-Dinitrobenzene Screen	ND	ug/L	10	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	1,4-Naphthoquinone Screen	ND	ug/L	10	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	1,4-phenylenediamine Screen	ND	ug/L	50	1
/3/2012	12/05/2012 20:38	683871	(SW 8270C)	1-Naphthylamine Screen	ND	ug/L	10	1
2/3/2012	12/05/2012 20:38	683871	(SW 8270C)	2,3,4,6-tetrachlorophenol Scr	ND	ug/L	10	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	2,4,5-Trichlorophenol	ND	ug/L	5	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	2,4,6-Trichlorophenol	ND	ug/L	5	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	2,4-Dichlorophenol	ND	ug/L	5	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	2,4-Dimethylphenol	ND	ug/L	5	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	2,4-Dinitrophenol	ND	ug/L	50	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	2,4-Dinitrotoluene	ND	ug/L	5	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	2,6-Dichlorophenol Screen	ND	ug/L	10	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	2,6-Dinitrotoluene	ND	ug/L	5	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	2-Acetylaminofluorene Screen	ND	ug/L	10	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	2-Chloronaphthalene	ND	ug/L	5	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	2-Chlorophenol	ND	ug/L	5	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	2-Methylnaphthalene	ND	ug/L	5	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	2-Methylphenol	ND	ug/L	5	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	2-Naphthylamine Screen	ND	ug/L	10	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	2-Nitroaniline	ND	ug/L	10	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	2-Nitrophenol	ND	ug/L	5	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	2-Picoline Screen	ND	ug/L	10	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	3,3-Dichlorobenzidine	ND	ug/L	50	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	3,3-Dimethylbenzidine Screen	ND	ug/L	50	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	3-Methylcholanthrene Screen	ND	ug/L	10	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	3-Nitroaniline	ND	ug/L	20	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	4,6-Dinitro-o-cresol	ND	ug/L	50	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	4-Aminobiphenyl Screen	ND	ug/L	10	1
/3/2012	12/05/2012 20:38	683871	(SW 8270C)	4-Bromophenylphenylether	ND	ug/L	5	1

Rounding on totals after summation.
(c) - indicates calculated results

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Report: 416854

City of Wichita Falls
Mark Southard
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Wichita Falls, TX 76310

Samples Received on:
11/29/2012

Prepared	Analyzed	QC Ref #	Method	Analyte	Result	Units	MRL	Dilution
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	4-Chloroaniline	ND	ug/L	5	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	4-Chlorophenylphenylether	ND	ug/L	5	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	4-Methylphenol	ND	ug/L	5	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	4-Nitroaniline	ND	ug/L	20	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	4-Nitrophenol	ND	ug/L	10	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	5-Nitro-o-toluidine Screen	ND	ug/L	10	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	7,12-Dimethylbenz(a)anthracene	ND	ug/L	10	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	a,a-Dimethylphenethylamine Scr	ND	ug/L	50	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Acenaphthene	ND	ug/L	5	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Acenaphthylene	ND	ug/L	5	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Acetophenone Screen	ND	ug/L	10	1
/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Aniline	ND	ug/L	5	1
2/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Anthracene	ND	ug/L	5	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Aramite Screen	ND	ug/L	10	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Benzidine	ND	ug/L	50	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Benzo(a)anthracene	ND	ug/L	5	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Benzo(a)pyrene	ND	ug/L	5	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Benzo(b)fluoranthene	ND	ug/L	5	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Benzo(g,h,i)perylene	ND	ug/L	10	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Benzo(k)fluoranthene	ND	ug/L	5	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Benzoic Acid	ND	ug/L	50	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Benzyl Alcohol	ND	ug/L	5	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	bis(2-Chloroethoxy)methane	ND	ug/L	10	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	bis(2-Chloroethyl)ether	ND	ug/L	10	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	bis(2-Chloroisopropyl)ether	ND	ug/L	10	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Butylbenzylphthalate	ND	ug/L	5	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Carbazole Screen	ND	ug/L	10	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Chlorobenzilate Screen	ND	ug/L	50	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Chrysene	ND	ug/L	5	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Di(2-Ethylhexyl)phthalate	ND	ug/L	4	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Diallate (cis or trans) Screen	ND	ug/L	50	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Dibenz(a,h)anthracene	ND	ug/L	10	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Dibenzofuran	ND	ug/L	5	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Diethylphthalate	ND	ug/L	5	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Dimethoate Screen	ND	ug/L	10	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Dimethylaminoazobenzene Screen	ND	ug/L	10	1

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Laboratory Data
Report: 416854

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Prepared	Analyzed	QC Ref #	Method	Analyte	Result	Units	MRL	Dilution
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Dimethylphthalate	ND	ug/L	5	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Di-n-butylphthalate	ND	ug/L	10	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Di-n-octylphthalate	ND	ug/L	10	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Dinoseb Screen	ND	ug/L	10	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Diphenylamine Screen	ND	ug/L	10	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Disulfoton Screen	ND	ug/L	10	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Ethyl Methanesulfonate Screen	ND	ug/L	10	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Famphur Screen	ND	ug/L	10	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Fluoranthene	ND	ug/L	5	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Fluorene	ND	ug/L	5	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Hexachlorobenzene	ND	ug/L	5	1
/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Hexachlorobutadiene	ND	ug/L	10	1
,2/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Hexachlorocyclopentadiene	ND	ug/L	10	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Hexachloroethane	ND	ug/L	5	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Hexachlorophene Screen	ND	ug/L	10	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Hexachloropropene Screen	ND	ug/L	10	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Indeno(1,2,3-c,d)pyrene	ND	ug/L	10	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Isodrin Screen	ND	ug/L	10	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Isophorone	ND	ug/L	5	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Isosafrole Screen	ND	ug/L	50	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Kepone Screen	ND	ug/L	10	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	m-Dichlorobenzene (1,3-DCB)	ND	ug/L	5	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Methapyrilene Screen	ND	ug/L	50	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Methyl Methanesulfonate Screen	ND	ug/L	10	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Naphthalene	ND	ug/L	5	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Nitrobenzene	ND	ug/L	5	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	N-Nitrosodiethylamine Screen	ND	ug/L	10	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	N-Nitrosodimethylamine	ND	ug/L	5	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	N-Nitrosodi-n-butylamine Scr	ND	ug/L	10	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	N-Nitrosodi-N-propylamine	ND	ug/L	5	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	N-Nitrosodiphenylamine	ND	ug/L	5	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	n-nitrosomethylethylamine Scr	ND	ug/L	10	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	N-Nitrosomorpholine Screen	ND	ug/L	10	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	N-Nitrosopiperidine Screen	ND	ug/L	10	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	N-Nitrosopyrrolidine Screen	ND	ug/L	10	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	o-Dichlorobenzene (1,2-DCB)	ND	ug/L	5	1
/3/2012	12/05/2012 20:38	683871	(SW 8270C)	ooo-Triethylphosphorothioate S	ND	ug/L	10	1

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12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	o-Toluidine Screen	ND	ug/L	10	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Parathion Screen	ND	ug/L	10	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	p-Chloro-m-cresol	ND	ug/L	5	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	p-Dichlorobenzene (1,4-DCB)	ND	ug/L	5	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Pentachlorobenzene Screen	ND	ug/L	10	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Pentachloroethane Screen	ND	ug/L	10	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Pentachloronitrobenzene Screen	ND	ug/L	10	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Pentachlorophenol	ND	ug/L	20	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Phenacetin Screen	ND	ug/L	10	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Phenanthrene	ND	ug/L	5	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Phenol	ND	ug/L	5	1
2/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Phorate Screen	ND	ug/L	10	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Pronamide Screen	ND	ug/L	10	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Pyrene	ND	ug/L	5	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Pyridine Screen	ND	ug/L	10	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Safrole Screen	ND	ug/L	10	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Thionazine Screen	ND	ug/L	10	1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	2,4,6-Tribromophenol	65	%		1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	2-Fluorobiphenyl	53	%		1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	2-Fluorophenol	49	%		1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Nitrobenzene-d5	57	%		1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Phenol-d5	56	%		1
12/3/2012	12/05/2012 20:38	683871	(SW 8270C)	Terphenyl-d14	37	%		1
	EPA 525.2 - Semivolatiles by GCMS							
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	2,4-Dinitrotoluene	ND	ug/L	0.1	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	2,6-Dinitrotoluene	ND	ug/L	0.1	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	4,4-DDD	ND	ug/L	0.1	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	4,4-DDE	ND	ug/L	0.1	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	4,4-DDT	ND	ug/L	0.1	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Acenaphthene	ND	ug/L	0.1	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Acenaphthylene	ND	ug/L	0.1	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Acetochlor	ND	ug/L	0.1	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Alachlor	ND	ug/L	0.05	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Aldrin	ND	ug/L	0.05	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Alpha-BHC	ND	ug/L	0.1	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	alpha-Chlordane	ND	ug/L	0.05	1

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12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Anthracene	ND	ug/L	0.02	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Atrazine	ND	ug/L	0.05	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Benz(a)Anthracene	ND	ug/L	0.05	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Benzo(a)pyrene	ND	ug/L	0.02	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Benzo(b)Fluoranthene	ND	ug/L	0.02	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Benzo(g,h,i)Perylene	ND	ug/L	0.05	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Benzo(k)Fluoranthene	ND	ug/L	0.02	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Beta-BHC	ND	ug/L	0.1	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Bromacil	ND	ug/L	0.2	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Butachlor	ND	ug/L	0.05	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Butylbenzylphthalate	ND	ug/L	0.5	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Caffeine by method 525mod	ND	ug/L	0.05	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Chlorobenzilate	ND	ug/L	0.1	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Chloroneb	ND	ug/L	0.1	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Chlorothalonil(Draconil,Bravo)	ND	ug/L	0.1	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Chlorpyrifos (Dursban)	ND	ug/L	0.05	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Chrysene	ND	ug/L	0.02	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Delta-BHC	ND	ug/L	0.1	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Di-(2-Ethylhexyl)adipate	ND	ug/L	0.6	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Di(2-Ethylhexyl)phthalate	ND	ug/L	0.6	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Diazinon (Qualitative)	ND	ug/L	0.1	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Dibenz(a,h)Anthracene	ND	ug/L	0.05	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Dichlorvos (DDVP)	ND	ug/L	0.05	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Dieldrin	ND	ug/L	0.2	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Diethylphthalate	ND	ug/L	0.5	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Dimethoate	ND	ug/L	0.1	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Dimethylphthalate	ND	ug/L	0.5	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Di-n-Butylphthalate	ND	ug/L	1	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Di-N-octylphthalate	ND	ug/L	0.1	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Endosulfan I (Alpha)	ND	ug/L	0.1	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Endosulfan II (Beta)	ND	ug/L	0.1	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Endosulfan Sulfate	ND	ug/L	0.1	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Endrin	ND	ug/L	0.2	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Endrin Aldehyde	ND	ug/L	0.1	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	EPTC	ND	ug/L	0.1	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Fluoranthene	ND	ug/L	0.1	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Fluorene	ND	ug/L	0.05	1

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12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	gamma-Chlordane	ND	ug/L	0.05	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Heptachlor	ND	ug/L	0.03	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Heptachlor Epoxide (isomer B)	ND	ug/L	0.05	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Hexachlorobenzene	ND	ug/L	0.05	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Hexachlorocyclopentadiene	ND	ug/L	0.05	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Indeno(1,2,3,c,d)Pyrene	ND	ug/L	0.05	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Isophorone	ND	ug/L	0.5	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Lindane	ND	ug/L	0.04	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Malathion	ND	ug/L	0.1	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Methoxychlor	ND	ug/L	0.1	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Metolachlor	ND	ug/L	0.05	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Metribuzin	ND	ug/L	0.05	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Molinate	ND	ug/L	0.1	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Naphthalene	ND	ug/L	0.3	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Parathion	ND	ug/L	0.1	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Pendimethalin	ND	ug/L	0.1	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Pentachlorophenol	ND	ug/L	1	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Permethrin (mixed isomers)	ND (LE)	ug/L	0.1	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Phenanthrene	ND	ug/L	0.04	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Propachlor	ND	ug/L	0.05	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Pyrene	ND	ug/L	0.05	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Simazine	ND	ug/L	0.05	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Terbacil	ND	ug/L	0.1	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Terbuthylazine	ND	ug/L	0.1	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Thiobencarb (ELAP)	ND	ug/L	0.2	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	trans-Nonachlor	ND	ug/L	0.05	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Trifluralin	ND	ug/L	0.1	1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	1,3-Dimethyl-2-nitrobenzene	99	%		1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Acenaphthene-d10	106	%		1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Chrysene-d12	94	%		1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Perylene-d12	79	%		1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Phenanthrene-d10	112	%		1
12/6/2012	12/07/2012 19:03	684336	(EPA 525.2)	Triphenylphosphate	103	%		1
		EPA 525 - EPA 525 N/P Pesticides						
12/6/2012	12/08/2012 17:18	684328	(EPA 525)	Guthion	ND	ug/L	0.1	1
12/6/2012	12/08/2012 17:18	684328	(EPA 525)	Mirex	ND	ug/L	0.1	1

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Laboratory Data
Report: 416854

City of Wichita Falls
Mark Southard
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Wichita Falls, TX 76310

Samples Received on:
11/29/2012

Prepared	Analyzed		QC Ref #	Method	Analyte	Result	Units	MRL	Dilution
12/6/2012	12/08/2012	17:18	684328	(EPA 525)	1,3-Dimethyl-2-nitrobenzene	99	%		1
12/6/2012	12/08/2012	17:18	684328	(EPA 525)	acenaphthene-d10	85	%		1
12/6/2012	12/08/2012	17:18	684328	(EPA 525)	chrysene-d12	69	%		1
12/6/2012	12/08/2012	17:18	684328	(EPA 525)	perylene-d12	82	%		1
12/6/2012	12/08/2012	17:18	684328	(EPA 525)	phenanthrene-d10	91	%		1
12/6/2012	12/08/2012	17:18	684328	(EPA 525)	Triphenylphosphate	96	%		1
				EPA 218.6 - Hexavalent chromium(Dissolved)					
	11/30/2012	10:56	683340	(EPA 218.6)	Hexavalent chromium(Dissolved)	0.025	ug/L	0.02	1
				MWH/ LCMSMS - Sulfonyl Urea Compounds					
	12/05/2012	01:57	685307	(MWH/ LCMSMS)	Chlorotoluron	ND	ug/L	0.1	1
	12/05/2012	01:57	685307	(MWH/ LCMSMS)	Diuron	ND	ug/L	0.1	1
	12/05/2012	01:57	685307	(MWH/ LCMSMS)	Isoproturon	ND	ug/L	0.1	1
	12/05/2012	01:57	685307	(MWH/ LCMSMS)	Linuron	ND	ug/L	0.1	1
	12/05/2012	01:57	685307	(MWH/ LCMSMS)	Metazachlor	ND	ug/L	0.1	1
	12/05/2012	01:57	685307	(MWH/ LCMSMS)	Metoxuron	ND	ug/L	0.1	1
	12/05/2012	01:57	685307	(MWH/ LCMSMS)	Propanil	ND	ug/L	0.1	1
	12/05/2012	01:57	685307	(MWH/ LCMSMS)	Pyriproxyfen	ND	ug/L	0.1	1
	12/05/2012	01:57	685307	(MWH/ LCMSMS)	Tebuthiuron	ND	ug/L	0.1	1
	12/05/2012	01:57	685307	(MWH/ LCMSMS)	Monuron	98	%		1
				MWH 420/SW9066 - Phenolic Compounds					
12/3/2012	12/03/2012	16:12	683580	(MWH 420/SW9066)	Phenolic Compounds	ND	mg/L	0.01	1
				EPA 335.4 - Cyanide by manual distillation					
11/30/2012	11/30/2012	13:04	683422	(EPA 335.4)	Cyanide by manual distillation	ND	mg/L	0.005	1
				EPA 350.1 - Ammonia Nitrogen					
	12/05/2012	15:58	683373	(EPA 350.1)	Ammonia Nitrogen	0.15	mg/L	0.05	1
				EPA 8260 - Volatile Organics by GCMS					
12/11/2012	12/12/2012	00:04	685212	(EPA 8260)	2-Chloroethylvinylether	ND	ug/L	0.5	1
12/11/2012	12/12/2012	00:04	685212	(EPA 8260)	1,2-Dichloroethane-d4	99	%		1
12/11/2012	12/12/2012	00:04	685212	(EPA 8260)	4-Bromofluorobenzene	98	%		1
12/11/2012	12/12/2012	00:04	685212	(EPA 8260)	Toluene-d8	99	%		1
				EPA 624 - Volatile Organics by EPA 624					
12/7/2012	12/07/2012	20:05	684680	(EPA 624)	1,1,1-Trichloroethane	ND (LK)	ug/L	0.5	1
12/7/2012	12/07/2012	20:05	684680	(EPA 624)	1,1,2,2-Tetrachloroethane	ND	ug/L	0.5	1
12/7/2012	12/07/2012	20:05	684680	(EPA 624)	1,1,2-Trichloroethane	ND	ug/L	0.5	1
12/7/2012	12/07/2012	20:05	684680	(EPA 624)	1,1-Dichloroethane	ND	ug/L	0.5	1
12/7/2012	12/07/2012	20:05	684680	(EPA 624)	1,1-Dichloroethylene	ND	ug/L	0.5	1
12/7/2012	12/07/2012	20:05	684680	(EPA 624)	1,2-Dichloroethane	ND (LK)	ug/L	0.5	1

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Prepared	Analyzed	QC Ref #	Method	Analyte	Result	Units	MRL	Dilution
12/7/2012	12/07/2012 20:05	684680	(EPA 624)	1,2-Dichloropropane	ND (LK)	ug/L	0.5	1
12/7/2012	12/07/2012 20:05	684680	(EPA 624)	2-Butanone (MEK)	ND (LK)	ug/L	5	1
12/7/2012	12/07/2012 20:05	684680	(EPA 624)	2-Hexanone	ND (LK,M1)	ug/L	10	1
12/7/2012	12/07/2012 20:05	684680	(EPA 624)	4-Methyl-2-Pentanone (MIBK)	ND	ug/L	5	1
12/7/2012	12/07/2012 20:05	684680	(EPA 624)	Acetone	ND (LK)	ug/L	10	1
12/7/2012	12/07/2012 20:05	684680	(EPA 624)	Acrolein (Screen)	ND	ug/L	25	1
12/7/2012	12/07/2012 20:05	684680	(EPA 624)	Acrylonitrile (Screen)	ND	ug/L	25	1
12/7/2012	12/07/2012 20:05	684680	(EPA 624)	Benzene	ND	ug/L	0.5	1
12/7/2012	12/07/2012 20:05	684680	(EPA 624)	Bromoform	7.8	ug/L	0.5	1
12/7/2012	12/07/2012 20:05	684680	(EPA 624)	Bromomethane (Methyl Bromide)	ND	ug/L	0.5	1
12/7/2012	12/11/2012 18:35	684795	(EPA 624)	Carbon disulfide	ND	ug/L	0.5	1
/7/2012	12/07/2012 20:05	684680	(EPA 624)	Carbon Tetrachloride	ND	ug/L	0.5	1
./7/2012	12/07/2012 20:05	684680	(EPA 624)	Chlorobenzene	ND	ug/L	0.5	1
12/7/2012	12/07/2012 20:05	684680	(EPA 624)	Chlorodibromomethane	18	ug/L	0.5	1
12/7/2012	12/07/2012 20:05	684680	(EPA 624)	Chloroform (Trichloromethane)	6.8	ug/L	0.5	1
12/7/2012	12/07/2012 20:05	684680	(EPA 624)	Chloromethane(Methyl Chloride)	ND	ug/L	0.5	1
12/7/2012	12/07/2012 20:05	684680	(EPA 624)	cis-1,2-Dichloroethylene	ND (LK)	ug/L	0.5	1
12/7/2012	12/07/2012 20:05	684680	(EPA 624)	cis-1,3-Dichloropropene	ND	ug/L	0.5	1
12/7/2012	12/07/2012 20:05	684680	(EPA 624)	Dichlorodifluoromethane	ND	ug/L	0.5	1
12/7/2012	12/07/2012 20:05	684680	(EPA 624)	Dichloromethane	ND	ug/L	0.5	1
12/7/2012	12/07/2012 20:05	684680	(EPA 624)	Ethyl benzene	ND	ug/L	0.5	1
12/7/2012	12/07/2012 20:05	684680	(EPA 624)	m,p-Xylenes	ND	ug/L	0.5	1
12/7/2012	12/07/2012 20:05	684680	(EPA 624)	m-Dichlorobenzene (1,3-DCB)	ND	ug/L	0.5	1
12/7/2012	12/07/2012 20:05	684680	(EPA 624)	Methyl Tert-butyl ether (MTBE)	ND	ug/L	0.5	1
12/7/2012	12/07/2012 20:05	684680	(EPA 624)	o-Dichlorobenzene (1,2-DCB)	ND	ug/L	0.5	1
12/7/2012	12/07/2012 20:05	684680	(EPA 624)	o-Xylene	ND	ug/L	0.5	1
12/7/2012	12/07/2012 20:05	684680	(EPA 624)	p-Dichlorobenzene (1,4-DCB)	ND	ug/L	0.5	1
12/7/2012	12/07/2012 20:05	684680	(EPA 624)	Styrene	ND	ug/L	0.5	1
12/7/2012	12/07/2012 20:05	684680	(EPA 624)	Tetrachloroethylene (PCE)	ND (LK)	ug/L	0.5	1
12/7/2012	12/07/2012 20:05	684680	(EPA 624)	Tetrahydrofuran	ND	ug/L	10	1
12/7/2012	12/07/2012 20:05	684680	(EPA 624)	Toluene	ND (LK)	ug/L	0.5	1
12/7/2012	12/07/2012 20:05	684680	(EPA 624)	Total 1,3-Dichloropropene	ND	ug/L	1	1
12/7/2012	12/07/2012 20:05	684680	(EPA 624)	trans-1,2-Dichloroethylene	ND	ug/L	0.5	1
12/7/2012	12/07/2012 20:05	684680	(EPA 624)	trans-1,3-Dichloropropene	ND	ug/L	0.5	1
12/7/2012	12/07/2012 20:05	684680	(EPA 624)	Trichloroethylene (TCE)	ND	ug/L	0.5	1
12/7/2012	12/07/2012 20:05	684680	(EPA 624)	Trichlorofluoromethane	ND	ug/L	0.5	1
/7/2012	12/07/2012 20:05	684680	(EPA 624)	Vinyl Acetate	ND	ug/L	10	1

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Prepared	Analyzed	QC Ref #	Method	Analyte	Result	Units	MRL	Dilution
12/7/2012	12/07/2012	20:05 684680	(EPA 624)	Vinyl chloride (VC)	ND	ug/L	0.3	1
12/7/2012	12/07/2012	20:05 684680	(EPA 624)	1,2-Dichloroethane-d4	111	%		1
12/7/2012	12/07/2012	20:05 684680	(EPA 624)	4-Bromofluorobenzene	97	%		1
12/7/2012	12/07/2012	20:05 684680	(EPA 624)	Toluene-d8	91	%		1
		SM4500-HB - PH (H3=past HT not compliant)						
	12/04/2012	14:05 683577	(SM4500-HB)	PH (H3=past HT not compliant)	7.3	Units	0.1	1
		4500P-E/365.1 - Orthophosphate as P (OPO4)						
	11/29/2012	15:54 683171	(4500P-E/365.1)	Orthophosphate as P	0.35	mg/L	0.01	1

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QC Ref # 683171 - Orthophosphate as P (OPO4) **Analysis Date: 11/29/2012**
201211290119 WASTEWATER EFFLUENT (24HR COMPOSITE) Analyzed by: JMO

QC Ref # 683340 - Hexavalent chromium(Dissolved) **Analysis Date: 11/30/2012**
201211290119 WASTEWATER EFFLUENT (24HR COMPOSITE) Analyzed by: TLH

QC Ref # 683373 - Ammonia Nitrogen **Analysis Date: 12/05/2012**
201211290119 WASTEWATER EFFLUENT (24HR COMPOSITE) Analyzed by: KXS

QC Ref # 683377 - ICPMS Metals **Analysis Date: 12/03/2012**
201211290119 WASTEWATER EFFLUENT (24HR COMPOSITE) Analyzed by: RPD

QC Ref # 683403 - EDB/DBCP/HAN by EPA 551.1 **Analysis Date: 12/05/2012**
201211290119 WASTEWATER EFFLUENT (24HR COMPOSITE) Analyzed by: MCP
201211290119 WASTEWATER EFFLUENT (24HR COMPOSITE) Analyzed by: MCP

QC Ref # 683422 - Cyanide by manual distillation **Analysis Date: 11/30/2012**
201211290119 WASTEWATER EFFLUENT (24HR COMPOSITE) Analyzed by: QMK

`C Ref # 683480 - Asbestos by TEM - >10 microns **Analysis Date: 12/03/2012**
201211290119 WASTEWATER EFFLUENT (24HR COMPOSITE) Analyzed by: CJB

QC Ref # 683511 - ICP Metals **Analysis Date: 12/04/2012**
201211290119 WASTEWATER EFFLUENT (24HR COMPOSITE) Analyzed by: NINA

QC Ref # 683577 - PH (H3=past HT not compliant) **Analysis Date: 12/04/2012**
201211290119 WASTEWATER EFFLUENT (24HR COMPOSITE) Analyzed by: LLL

QC Ref # 683580 - Phenolic Compounds **Analysis Date: 12/03/2012**
201211290119 WASTEWATER EFFLUENT (24HR COMPOSITE) Analyzed by: QMK

QC Ref # 683756 - Chlorophenoxy Herbicides **Analysis Date: 12/06/2012**
201211290119 WASTEWATER EFFLUENT (24HR COMPOSITE) Analyzed by: KCL

QC Ref # 683871 - 8270 Semivolatile, Screen, TIC **Analysis Date: 12/05/2012**
201211290119 WASTEWATER EFFLUENT (24HR COMPOSITE) Analyzed by: PAC

QC Ref # 684328 - EPA 525 N/P Pesticides **Analysis Date: 12/08/2012**
201211290119 WASTEWATER EFFLUENT (24HR COMPOSITE) Analyzed by: JWC

QC Ref # 684336 - Semivolatiles by GCMS **Analysis Date: 12/07/2012**
201211290119 WASTEWATER EFFLUENT (24HR COMPOSITE) Analyzed by: JWC

QC Ref # 684680 - Volatile Organics by EPA 624 **Analysis Date: 12/07/2012**
201211290119 WASTEWATER EFFLUENT (24HR COMPOSITE) Analyzed by: SZZ

QC Ref # 684795 - Volatile Organics by EPA 624 **Analysis Date: 12/11/2012**
201211290119 WASTEWATER EFFLUENT (24HR COMPOSITE) Analyzed by: SZZ

QC Ref # 685212 - Volatile Organics by GCMS **Analysis Date: 12/12/2012**
201211290119 WASTEWATER EFFLUENT (24HR COMPOSITE) Analyzed by: SZZ

QC Ref # 685307 - Sulfonyl Urea Compounds **Analysis Date: 12/05/2012**

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201211290119	WASTEWATER EFFLUENT (24HR COMPOSITE)	Analyzed by: LHZ

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QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
QC Ref# 683171 - Orthophosphate as P (OPO4) by 4500P-E/365.1						**Analysis Date: 11/29/2012**			
LCS1	Orthophosphate as P		0.25	0.261	mg/L	104	(90-110)		
LCS2	Orthophosphate as P		0.25	0.265	mg/L	106	(90-110)	20	1.5
MBLK	Orthophosphate as P			<0.01	mg/L				
MRL_CHK	Orthophosphate as P		0.01	0.0120	mg/L	120	(50-150)		
MS_201211290118	Orthophosphate as P	0.11	0.5	0.635	mg/L	105	(90-110)		
MSD_201211290118	Orthophosphate as P	0.11	0.5	0.634	mg/L	105	(90-110)	20	0.16
QC Ref# 683340 - Hexavalent chromium(Dissolved) by EPA 218.6						**Analysis Date: 11/30/2012**			
LCS1	Hexavalent chromium(Dissolved)		2.0	1.92	ug/L	96	(90-110)		
LCS2	Hexavalent chromium(Dissolved)		2.0	1.93	ug/L	96	(90-110)		
MBLK	Hexavalent chromium(Dissolved)			<0.020	ug/L				
MRL_CHK	Hexavalent chromium(Dissolved)		0.02	0.0167	ug/L	84	(50-150)		
MS_201211290132	Hexavalent chromium(Dissolved)	0.15	2.0	2.21	ug/L	103	(90-110)		
**S_201211280507	Hexavalent chromium(Dissolved)	1.1	2.0	3.10	ug/L	99	(90-110)		
D_201211290132	Hexavalent chromium(Dissolved)	0.15	2.0	2.22	ug/L	104	(90-110)	20	0.45
MSD_201211280507	Hexavalent chromium(Dissolved)	1.1	2.0	3.17	ug/L	102	(90-110)	20	2.2
QC Ref# 683373 - Ammonia Nitrogen by EPA 350.1						**Analysis Date: 12/05/2012**			
LCS1	Ammonia Nitrogen		1.0	1.07	mg/L	107	(90-110)		
LCS2	Ammonia Nitrogen		1.0	1.06	mg/L	106	(90-110)	20	0.94
MBLK	Ammonia Nitrogen			<0.05	mg/L				
MRL_CHK	Ammonia Nitrogen		0.05	0.0481	mg/L	96	(50-112)		
MS_201211170303	Ammonia Nitrogen	ND	1.0	1.16	mg/L	**116**	(90-110)		
MS_201212050481	Ammonia Nitrogen	ND	1.0	1.18	mg/L	**118**	(90-110)		
MSD_201211170303	Ammonia Nitrogen	ND	1.0	1.16	mg/L	**116**	(90-110)	20	0.0
MSD_201212050481	Ammonia Nitrogen	ND	1.0	1.16	mg/L	**116**	(90-110)	20	1.7
QC Ref# 683377 - ICPMS Metals by EPA 200.8						**Analysis Date: 12/03/2012**			
LCS1	Chromium Total ICAP/MS		100	94.2	ug/L	94	(85-115)		
LCS2	Chromium Total ICAP/MS		100	88.9	ug/L	89	(85-115)	20	5.8
MBLK	Chromium Total ICAP/MS			<1	ug/L				
MRL_CHK	Chromium Total ICAP/MS		1.0	1.00	ug/L	100	(50-150)		
MS_201211290279	Chromium Total ICAP/MS	ND	100	96.0	ug/L	96	(70-130)		
MS2_201211290281	Chromium Total ICAP/MS	ND	100	95.4	ug/L	95	(70-130)		
MSD_201211290279	Chromium Total ICAP/MS	ND	100	97.1	ug/L	97	(70-130)	20	1.1
MSD2_201211290281	Chromium Total ICAP/MS	ND	100	94.9	ug/L	95	(70-130)	20	0.53
LCS1	Nickel Total ICAP/MS		50	48.5	ug/L	97	(85-115)		
LCS2	Nickel Total ICAP/MS		50	45.9	ug/L	92	(85-115)	20	5.5

Spike recovery is already corrected for native results.
'kes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.
eria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.
D not calculated for LCS2 when different a concentration than LCS1 is used.
RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level).
(S) - Indicates surrogate compound.
(I) - Indicates internal standard compound.

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QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MBLK	Nickel Total ICAP/MS			<5	ug/L				
MRL_CHK	Nickel Total ICAP/MS		5.0	4.88	ug/L	98	(50-150)		
MS_201211290279	Nickel Total ICAP/MS	ND	50	50.1	ug/L	94	(70-130)		
MS2_201211290281	Nickel Total ICAP/MS	ND	50	50.7	ug/L	95	(70-130)		
MSD_201211290279	Nickel Total ICAP/MS	ND	50	50.7	ug/L	95	(70-130)	20	1.2
MSD2_201211290281	Nickel Total ICAP/MS	ND	50	50.2	ug/L	94	(70-130)	20	0.99
QC Ref# 683403 - EDB/DBCP/HAN by EPA 551.1 by EPA 551.1						**Analysis Date: 12/04/2012**			
CCC3	1,2-Dibromopropane (S)			114	%	114	(80-120)		
CCCM2	1,2-Dibromopropane (S)			89.3	%	89	(80-120)		
DUP1_201212070149	1,2-Dibromopropane (S)			117	%	117	(80-120)		
DUP2_201211280283	1,2-Dibromopropane (S)			119	%	119	(80-120)		
MBLK	1,2-Dibromopropane (S)			113	%	113	(80-120)		
MRL_CHK	1,2-Dibromopropane (S)			88.4	%	88	(80-120)		
MS_201211280244	1,2-Dibromopropane (S)			112	%	112	(80-120)		
S2_201211300311	1,2-Dibromopropane (S)			88.6	%	89	(80-120)		
CCC3	Dibromochloropropane (DBCP)		0.25	0.247	ug/L	99	(80-120)		
CCCM2	Dibromochloropropane (DBCP)		0.05	0.0492	ug/L	98	(80-120)		
DUP1_201212070149	Dibromochloropropane (DBCP)	0.30		0.301	ug/L		(0-20)	20	1.3
DUP2_201211280283	Dibromochloropropane (DBCP)	ND		ND	ug/L		(0-20)		
MBLK	Dibromochloropropane (DBCP)			<0.01	ug/L				
MRL_CHK	Dibromochloropropane (DBCP)		0.01	0.00850	ug/L	85	(50-150)		
MS_201211280244	Dibromochloropropane (DBCP)	ND	0.25	0.287	ug/L	115	(80-120)		
MS2_201211300311	Dibromochloropropane (DBCP)	0.32	0.05	0.350	ug/L	**66**	(80-120)		
CCC3	Ethylene Dibromide (EDB)		0.25	0.243	ug/L	97	(80-120)		
DUP1_201212070149	Ethylene Dibromide (EDB)	ND		ND	ug/L		(0-20)		
DUP2_201211280283	Ethylene Dibromide (EDB)	ND		ND	ug/L		(0-20)		
MBLK	Ethylene Dibromide (EDB)			<0.01	ug/L				
MRL_CHK	Ethylene Dibromide (EDB)		0.01	0.0119	ug/L	119	(50-150)		
MS_201211280244	Ethylene Dibromide (EDB)	ND	0.25	0.284	ug/L	114	(80-120)		
MS2_201211300311	Ethylene Dibromide (EDB)	ND	0.05	0.0476	ug/L	95	(80-120)		
QC Ref# 683422 - Cyanide by manual distillation by EPA 335.4						**Analysis Date: 11/30/2012**			
LCS1	Cyanide by manual distillation		0.1	0.0937	mg/L	94	(90-110)		
LCS2	Cyanide by manual distillation		0.1	0.0947	mg/L	95	(90-110)	20	1.1
MBLK	Cyanide by manual distillation			<0.005	mg/L				
MRL_CHK	Cyanide by manual distillation		0.005	0.00560	mg/L	112	(50-150)		
MS_201211300025	Cyanide by manual distillation	ND	0.1	0.0552	mg/L	**55**	(90-110)		
MS_201211290054	Cyanide by manual distillation	ND	0.1	0.0884	mg/L	**88**	(90-110)		

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QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MSD_201211300025	Cyanide by manual distillation	ND	0.1	0.0518	mg/L	52	(90-110)	20	6.4
MSD_201211290054	Cyanide by manual distillation	ND	0.1	0.0773	mg/L	77	(90-110)	20	13
QC Ref# 683511 - ICP Metals by EPA 200.7						**Analysis Date: 12/04/2012**			
LCS1	Silica		21	23.6	mg/L	110	(85-115)		
LCS2	Silica		21	23.9	mg/L	112	(85-115)	20	1.3
MBLK	Silica			<0.25	mg/L				
MRL_CHK	Silica		0.42	0.496	mg/L	118	(50-150)		
MS_201211290280	Silica	20	21	43.3	mg/L	111	(70-130)		
MS2_201211290284	Silica	13	21	36.9	mg/L	110	(70-130)		
MSD_201211290280	Silica	20	21	43.8	mg/L	113	(70-130)	20	1.1
MSD2_201211290284	Silica	13	21	36.8	mg/L	110	(70-130)	20	0.27
QC Ref# 683577 - PH (H3=past HT not compliant) by SM4500-HB						**Analysis Date: 12/04/2012**			
DUP_201212040241	PH (H3=past HT not compliant)	7.0		6.96	Units		(0-20)	20	0.29
DUP_201212030134	PH (H3=past HT not compliant)	6.3		6.21	Units		(0-20)	20	1.1
LCS1	PH (H3=past HT not compliant)		6.0	5.94	Units	99	(98-102)		
LCS2	PH (H3=past HT not compliant)		6.0	5.94	Units	99	(98-102)	20	0.0
QC Ref# 683580 - Phenolic Compounds by MWH 420/SW9066						**Analysis Date: 12/03/2012**			
LCS1	Phenolic Compounds		0.08	0.0775	mg/L	97	(90-110)		
LCS2	Phenolic Compounds		0.08	0.0766	mg/L	96	(90-110)	20	1.2
MBLK	Phenolic Compounds			<0.01	mg/L				
MRL_CHK	Phenolic Compounds		0.01	0.0103	mg/L	103	(50-150)		
MS_201211210409	Phenolic Compounds	ND	0.08	0.0800	mg/L	99	(90-110)		
MSD_201211210409	Phenolic Compounds	ND	0.08	0.0797	mg/L	99	(90-110)	20	0.38
QC Ref# 683756 - Chlorophenoxy Herbicides by EPA 515.4						**Analysis Date: 12/05/2012**			
CCCH	2,4,5-TP (Silvex)		4.0	3.98	ug/L	99	(70-130)		
CCCM	2,4,5-TP (Silvex)		1.0	1.00	ug/L	100	(70-130)		
MBLK	2,4,5-TP (Silvex)			<0.1	ug/L				
MRL_CHK	2,4,5-TP (Silvex)		0.2	0.208	ug/L	104	(50-150)		
MS1_201211280342	2,4,5-TP (Silvex)	ND	3.0	2.99	ug/L	100	(70-130)		
MSD1_201211280342	2,4,5-TP (Silvex)	ND	3.0	3.00	ug/L	100	(70-130)	30	0.33
CCCH	2,4-D		2.0	2.01	ug/L	101	(70-130)		
CCCM	2,4-D		0.5	0.518	ug/L	103	(70-130)		
MBLK	2,4-D			<0.05	ug/L				
MRL_CHK	2,4-D		0.1	0.130	ug/L	130	(50-150)		
MS1_201211280342	2,4-D	ND	1.5	1.51	ug/L	101	(70-130)		
MSD1_201211280342	2,4-D	ND	1.5	1.57	ug/L	105	(70-130)	30	3.9

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QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
CCCH	Bentazon		10	10.1	ug/L	101	(70-130)		
CCCM	Bentazon		2.5	2.77	ug/L	111	(70-130)		
MBLK	Bentazon			<0.25	ug/L				
MRL_CHK	Bentazon		0.5	0.595	ug/L	119	(50-150)		
MS1_201211280342	Bentazon	ND	7.5	7.57	ug/L	100	(70-130)		
MSD1_201211280342	Bentazon	ND	7.5	7.60	ug/L	100	(70-130)	30	0.53
CCCH	Dalapon		20	19.1	ug/L	95	(70-130)		
CCCM	Dalapon		5.0	4.96	ug/L	99	(70-130)		
MBLK	Dalapon			<0.5	ug/L				
MRL_CHK	Dalapon		1.0	0.980	ug/L	98	(50-150)		
MS1_201211280342	Dalapon	ND	15	14.1	ug/L	94	(70-130)		
MSD1_201211280342	Dalapon	ND	15	14.4	ug/L	96	(70-130)	30	2.1
CCCH	Dinoseb		4.0	4.07	ug/L	102	(70-130)		
CCCM	Dinoseb		1.0	1.04	ug/L	104	(70-130)		
`*BLK	Dinoseb			<0.1	ug/L				
?L_CHK	Dinoseb		0.2	0.204	ug/L	102	(50-150)		
MS1_201211280342	Dinoseb	ND	3.0	3.12	ug/L	104	(70-130)		
MSD1_201211280342	Dinoseb	ND	3.0	3.10	ug/L	103	(70-130)	30	0.64
CCCH	Pentachlorophenol		0.8	0.790	ug/L	99	(70-130)		
CCCM	Pentachlorophenol		0.2	0.198	ug/L	99	(70-130)		
MBLK	Pentachlorophenol			<0.02	ug/L				
MRL_CHK	Pentachlorophenol		0.04	0.0406	ug/L	101	(50-150)		
MS1_201211280342	Pentachlorophenol	ND	0.6	0.599	ug/L	98	(70-130)		
MSD1_201211280342	Pentachlorophenol	ND	0.6	0.591	ug/L	97	(70-130)	30	1.3
CCCH	Picloram		2.0	2.09	ug/L	104	(70-130)		
CCCM	Picloram		0.5	0.514	ug/L	103	(70-130)		
MBLK	Picloram			<0.05	ug/L				
MRL_CHK	Picloram		0.1	0.111	ug/L	111	(50-150)		
MS1_201211280342	Picloram	ND	1.5	1.57	ug/L	105	(70-130)		
MSD1_201211280342	Picloram	ND	1.5	1.62	ug/L	108	(70-130)	30	3.1
QC Ref# 684328 - EPA 525 N/P Pesticides by EPA 525						**Analysis Date: 12/08/2012**			
LCS1	1,3-Dimethyl-2-nitrobenzene (S)			102	%	102	(70-130)		
LCS2	1,3-Dimethyl-2-nitrobenzene (S)			96.4	%	96	(70-130)		
MBLK	1,3-Dimethyl-2-nitrobenzene (S)			97.4	%	97	(70-130)		
MRL_CHK	1,3-Dimethyl-2-nitrobenzene (S)			98.9	%	99	(70-130)		
LCS1	acenaphthene-d10 (I)			83.7	%	84	(50-150)		
LCS2	acenaphthene-d10 (I)			83.4	%	83	(50-150)		
MBLK	acenaphthene-d10 (I)			92.5	%	93	(50-150)		

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RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level).
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QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MRL_CHK	acenaphthene-d10 (I)			91.2	%	91	(50-150)		
LCS1	chrysene-d12 (I)			85.9	%	86	(50-150)		
LCS2	chrysene-d12 (I)			84.9	%	85	(50-150)		
MBLK	chrysene-d12 (I)			87.7	%	88	(50-150)		
MRL_CHK	chrysene-d12 (I)			87.1	%	87	(50-150)		
LCS1	Guthion		2.0	2.13	ug/L	106	(70-130)		
LCS2	Guthion		2.0	2.20	ug/L	110	(70-130)	20	3.7
MBLK	Guthion			<0.1	ug/L				
MRL_CHK	Guthion		0.1	0.125	ug/L	125	(50-150)		
LCS1	Mirex		2.0	1.83	ug/L	92	(70-130)		
LCS2	Mirex		2.0	1.99	ug/L	100	(70-130)	20	8.4
MBLK	Mirex			<0.1	ug/L				
MRL_CHK	Mirex		0.1	0.0950	ug/L	95	(50-150)		
LCS1	perylene-d12 (S)			82.4	%	82	(70-130)		
LCS2	perylene-d12 (S)			81.2	%	81	(70-130)		
MBLK	perylene-d12 (S)			73.8	%	74	(70-130)		
MRL_CHK	perylene-d12 (S)			79.6	%	80	(70-130)		
LCS1	phenanthrene-d10 (I)			85.2	%	85	(50-150)		
LCS2	phenanthrene-d10 (I)			88.0	%	88	(50-150)		
MBLK	phenanthrene-d10 (I)			95.5	%	96	(50-150)		
MRL_CHK	phenanthrene-d10 (I)			92.9	%	93	(50-150)		
LCS1	Triphenylphosphate (S)			105	%	105	(70-130)		
LCS2	Triphenylphosphate (S)			104	%	104	(70-130)		
MBLK	Triphenylphosphate (S)			100	%	100	(70-130)		
MRL_CHK	Triphenylphosphate (S)			103	%	103	(70-130)		
QC Ref# 684336 - Semivolatiles by GCMS by EPA 525.2						**Analysis Date: 12/07/2012**			
LCS1	1,3-Dimethyl-2-nitrobenzene (S)			97.8	%	98	(70-130)		
LCS2	1,3-Dimethyl-2-nitrobenzene (S)			98.0	%	98	(70-130)		
MBLK	1,3-Dimethyl-2-nitrobenzene (S)			97.9	%	98	(70-130)		
MRL_CHK	1,3-Dimethyl-2-nitrobenzene (S)			98.6	%	99	(70-130)		
MS_201212040050	1,3-Dimethyl-2-nitrobenzene (S)			99.1	%	99	(70-130)		
LCS1	2,4-Dinitrotoluene		2.0	2.03	ug/L	102	(70-130)		
LCS2	2,4-Dinitrotoluene		2.0	2.11	ug/L	105	(70-130)	20	3.9
MBLK	2,4-Dinitrotoluene			<0.05	ug/L				
MRL_CHK	2,4-Dinitrotoluene		0.1	0.128	ug/L	128	(50-150)		
MS_201212040050	2,4-Dinitrotoluene		2.0	2.08	ug/L	104	(70-130)		
LCS1	2,6-Dinitrotoluene		2.0	2.19	ug/L	110	(70-130)		

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LCS2	2,6-Dinitrotoluene		2.0	2.20	ug/L	110	(70-130)	20	0.46
MBLK	2,6-Dinitrotoluene			<0.05	ug/L				
MRL_CHK	2,6-Dinitrotoluene		0.1	0.0910	ug/L	91	(50-150)		
MS_201212040050	2,6-Dinitrotoluene		2.0	2.13	ug/L	107	(70-130)		
LCS1	4,4-DDD		2.0	2.11	ug/L	106	(70-130)		
LCS2	4,4-DDD		2.0	2.14	ug/L	107	(70-130)	20	1.4
MBLK	4,4-DDD			<0.05	ug/L				
MRL_CHK	4,4-DDD		0.1	0.0860	ug/L	86	(50-150)		
MS_201212040050	4,4-DDD		2.0	2.10	ug/L	105	(70-130)		
LCS1	4,4-DDE		2.0	2.14	ug/L	107	(70-130)		
LCS2	4,4-DDE		2.0	2.06	ug/L	103	(70-130)	20	3.8
MBLK	4,4-DDE			<0.05	ug/L				
MRL_CHK	4,4-DDE		0.1	0.102	ug/L	102	(50-150)		
MS_201212040050	4,4-DDE		2.0	1.97	ug/L	99	(70-130)		
'CS1	4,4-DDT		2.0	2.04	ug/L	102	(70-130)		
:S2	4,4-DDT		2.0	2.07	ug/L	103	(70-130)	20	1.5
MBLK	4,4-DDT			<0.05	ug/L				
MRL_CHK	4,4-DDT		0.1	0.0960	ug/L	96	(50-150)		
MS_201212040050	4,4-DDT		2.0	1.97	ug/L	99	(70-130)		
LCS1	Acenaphthene		2.0	1.98	ug/L	99	(70-130)		
LCS2	Acenaphthene		2.0	1.96	ug/L	98	(70-130)	20	1.0
MBLK	Acenaphthene			<0.05	ug/L				
MRL_CHK	Acenaphthene		0.1	0.0980	ug/L	98	(50-150)		
MS_201212040050	Acenaphthene		2.0	1.98	ug/L	99	(70-130)		
LCS1	Acenaphthene-d10 (I)			91.6	%	92	(50-150)		
LCS2	Acenaphthene-d10 (I)			83.7	%	84	(50-150)		
MBLK	Acenaphthene-d10 (I)			112	%	112	(50-150)		
MRL_CHK	Acenaphthene-d10 (I)			91.2	%	91	(50-150)		
MS_201212040050	Acenaphthene-d10 (I)			94.5	%	95	(50-150)		
LCS1	Acenaphthylene		2.0	2.06	ug/L	103	(70-130)		
LCS2	Acenaphthylene		2.0	2.00	ug/L	100	(70-130)	20	3.0
MBLK	Acenaphthylene			<0.05	ug/L				
MRL_CHK	Acenaphthylene		0.1	0.0960	ug/L	96	(50-150)		
MS_201212040050	Acenaphthylene		2.0	2.05	ug/L	102	(70-130)		
LCS1	Acetochlor		2.0	2.23	ug/L	112	(70-130)		
LCS2	Acetochlor		2.0	2.25	ug/L	113	(70-130)	20	0.89
MBLK	Acetochlor			<0.05	ug/L				
MRL_CHK	Acetochlor		0.05	0.0520	ug/L	104	(50-150)		

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MS_201212040050	Acetochlor		2.0	2.22	ug/L	111	(70-130)		
LCS1	Alachlor		2.0	2.17	ug/L	109	(70-130)		
LCS2	Alachlor		2.0	2.16	ug/L	108	(70-130)	20	0.46
MBLK	Alachlor			<0.025	ug/L				
MRL_CHK	Alachlor		0.05	0.0530	ug/L	106	(50-150)		
MS_201212040050	Alachlor		2.0	2.17	ug/L	109	(70-130)		
LCS1	Aldrin		2.0	2.05	ug/L	102	(70-130)		
LCS2	Aldrin		2.0	2.04	ug/L	102	(70-130)	20	0.49
MBLK	Aldrin			<0.025	ug/L				
MRL_CHK	Aldrin		0.05	0.0560	ug/L	112	(50-150)		
MS_201212040050	Aldrin		2.0	2.04	ug/L	102	(70-130)		
LCS1	Alpha-BHC		2.0	2.05	ug/L	103	(70-130)		
LCS2	Alpha-BHC		2.0	2.09	ug/L	104	(70-130)	20	1.9
MBLK	Alpha-BHC			<0.05	ug/L				
'RL_CHK	Alpha-BHC		0.1	0.0980	ug/L	98	(50-150)		
S_201212040050	Alpha-BHC		2.0	2.01	ug/L	101	(70-130)		
LCS1	alpha-Chlordane		2.0	2.08	ug/L	104	(70-130)		
LCS2	alpha-Chlordane		2.0	2.07	ug/L	103	(70-130)	20	0.48
MBLK	alpha-Chlordane			<0.025	ug/L				
MRL_CHK	alpha-Chlordane		0.05	0.0450	ug/L	90	(50-150)		
MS_201212040050	alpha-Chlordane		2.0	2.11	ug/L	105	(70-130)		
LCS1	Anthracene		2.0	2.10	ug/L	105	(70-130)		
LCS2	Anthracene		2.0	2.09	ug/L	104	(70-130)	20	0.48
MBLK	Anthracene			<0.02	ug/L				
MRL_CHK	Anthracene		0.02	0.0180	ug/L	90	(50-150)		
MS_201212040050	Anthracene		2.0	2.11	ug/L	105	(70-130)		
LCS1	Atrazine		2.0	2.02	ug/L	101	(70-130)		
LCS2	Atrazine		2.0	2.18	ug/L	109	(70-130)	20	7.6
MBLK	Atrazine			<0.025	ug/L				
MRL_CHK	Atrazine		0.05	0.0430	ug/L	86	(50-150)		
MS_201212040050	Atrazine	ND	2.0	2.12	ug/L	106	(70-130)		
LCS1	Benz(a)Anthracene		2.0	2.08	ug/L	104	(70-130)		
LCS2	Benz(a)Anthracene		2.0	2.10	ug/L	105	(70-130)	20	0.96
MBLK	Benz(a)Anthracene			<0.025	ug/L				
MRL_CHK	Benz(a)Anthracene		0.05	0.0500	ug/L	100	(50-150)		
MS_201212040050	Benz(a)Anthracene		2.0	2.08	ug/L	104	(70-130)		
LCS1	Benzo(a)pyrene		2.0	2.29	ug/L	115	(70-130)		
LCS2	Benzo(a)pyrene		2.0	2.28	ug/L	114	(70-130)	20	0.44

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Laboratory QC
Report: 416854

City of Wichita Falls

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MBLK	Benzo(a)pyrene			<0.01	ug/L				
MRL_CHK	Benzo(a)pyrene		0.02	0.0180	ug/L	90	(50-150)		
MS_201212040050	Benzo(a)pyrene	ND	2.0	2.22	ug/L	111	(70-130)		
LCS1	Benzo(b)Fluoranthene		2.0	2.10	ug/L	105	(70-130)		
LCS2	Benzo(b)Fluoranthene		2.0	2.12	ug/L	106	(70-130)	20	1.4
MBLK	Benzo(b)Fluoranthene			<0.01	ug/L				
MRL_CHK	Benzo(b)Fluoranthene		0.02	0.0180	ug/L	90	(50-150)		
MS_201212040050	Benzo(b)Fluoranthene		2.0	2.18	ug/L	109	(70-130)		
LCS1	Benzo(g,h,i)Perylene		2.0	2.19	ug/L	109	(70-130)		
LCS2	Benzo(g,h,i)Perylene		2.0	2.21	ug/L	111	(70-130)	20	0.91
MBLK	Benzo(g,h,i)Perylene			<0.025	ug/L				
MRL_CHK	Benzo(g,h,i)Perylene		0.05	0.0420	ug/L	84	(50-150)		
MS_201212040050	Benzo(g,h,i)Perylene		2.0	2.05	ug/L	102	(70-130)		
LCS1	Benzo(k)Fluoranthene		2.0	2.15	ug/L	107	(70-130)		
CS2	Benzo(k)Fluoranthene		2.0	2.26	ug/L	113	(70-130)	20	5.0
BLK	Benzo(k)Fluoranthene			<0.01	ug/L				
MRL_CHK	Benzo(k)Fluoranthene		0.02	0.0170	ug/L	85	(50-150)		
MS_201212040050	Benzo(k)Fluoranthene		2.0	2.00	ug/L	100	(70-130)		
LCS1	Beta-BHC		2.0	1.97	ug/L	99	(70-130)		
LCS2	Beta-BHC		2.0	2.05	ug/L	103	(70-130)	20	4.0
MBLK	Beta-BHC			<0.05	ug/L				
MRL_CHK	Beta-BHC		0.1	0.0900	ug/L	90	(50-150)		
MS_201212040050	Beta-BHC		2.0	2.02	ug/L	101	(70-130)		
LCS1	Bromacil		2.0	2.20	ug/L	110	(70-130)		
LCS2	Bromacil		2.0	2.22	ug/L	111	(70-130)	20	0.91
MBLK	Bromacil			<0.05	ug/L				
MRL_CHK	Bromacil		0.1	0.115	ug/L	115	(50-150)		
MS_201212040050	Bromacil		2.0	2.20	ug/L	110	(70-130)		
LCS1	Butachlor		2.0	2.23	ug/L	111	(70-130)		
LCS2	Butachlor		2.0	2.27	ug/L	114	(70-130)	20	1.8
MBLK	Butachlor			<0.025	ug/L				
MRL_CHK	Butachlor		0.05	0.0430	ug/L	86	(50-150)		
MS_201212040050	Butachlor		2.0	2.26	ug/L	113	(70-130)		
LCS1	Butylbenzylphthalate		2.0	2.27	ug/L	114	(70-130)		
LCS2	Butylbenzylphthalate		2.0	2.27	ug/L	114	(70-130)	20	0.0
MBLK	Butylbenzylphthalate			<0.15	ug/L				
MRL_CHK	Butylbenzylphthalate		0.15	0.190	ug/L	127	(50-150)		
MS_201212040050	Butylbenzylphthalate		2.0	2.26	ug/L	113	(70-130)		

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City of Wichita Falls

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
LCS1	Caffeine by method 525mod		2.0	1.78	ug/L	89	(45-137)		
LCS2	Caffeine by method 525mod		2.0	1.87	ug/L	93	(45-137)	20	4.9
MBLK	Caffeine by method 525mod			<0.01	ug/L				
MRL_CHK	Caffeine by method 525mod		0.05	0.0470	ug/L	94	(50-150)		
MS_201212040050	Caffeine by method 525mod		2.0	1.78	ug/L	89	(46-144)		
LCS1	Chlorobenzilate		2.0	2.26	ug/L	113	(70-130)		
LCS2	Chlorobenzilate		2.0	2.29	ug/L	114	(70-130)	20	1.3
MBLK	Chlorobenzilate			<0.05	ug/L				
MRL_CHK	Chlorobenzilate		0.1	0.0900	ug/L	90	(50-150)		
MS_201212040050	Chlorobenzilate		2.0	2.26	ug/L	113	(70-130)		
LCS1	Chloroneb		2.0	2.04	ug/L	102	(70-130)		
LCS2	Chloroneb		2.0	2.02	ug/L	101	(70-130)	20	0.99
MBLK	Chloroneb			<0.05	ug/L				
MRL_CHK	Chloroneb		0.1	0.102	ug/L	102	(50-150)		
`S_201212040050	Chloroneb		2.0	2.03	ug/L	101	(70-130)		
;S1	Chlorothalonil(Draconil,Bravo)		2.0	2.14	ug/L	107	(70-130)		
LCS2	Chlorothalonil(Draconil,Bravo)		2.0	2.19	ug/L	109	(70-130)	20	2.3
MBLK	Chlorothalonil(Draconil,Bravo)			<0.05	ug/L				
MRL_CHK	Chlorothalonil(Draconil,Bravo)		0.05	0.0410	ug/L	82	(50-150)		
MS_201212040050	Chlorothalonil(Draconil,Bravo)		2.0	2.16	ug/L	108	(70-130)		
LCS1	Chlorpyrifos (Dursban)		2.0	2.26	ug/L	113	(70-130)		
LCS2	Chlorpyrifos (Dursban)		2.0	2.20	ug/L	110	(70-130)	20	2.7
MBLK	Chlorpyrifos (Dursban)			<0.025	ug/L				
MRL_CHK	Chlorpyrifos (Dursban)		0.05	0.0440	ug/L	88	(50-150)		
MS_201212040050	Chlorpyrifos (Dursban)		2.0	2.22	ug/L	111	(70-130)		
LCS1	Chrysene		2.0	2.14	ug/L	107	(70-130)		
LCS2	Chrysene		2.0	2.11	ug/L	105	(70-130)	20	1.4
MBLK	Chrysene			<0.01	ug/L				
MRL_CHK	Chrysene		0.02	0.0180	ug/L	90	(50-150)		
MS_201212040050	Chrysene		2.0	2.15	ug/L	108	(70-130)		
LCS1	Chrysene-d12 (I)			93.7	%	94	(50-150)		
LCS2	Chrysene-d12 (I)			87.8	%	88	(50-150)		
MBLK	Chrysene-d12 (I)			106	%	106	(50-150)		
MRL_CHK	Chrysene-d12 (I)			92.1	%	92	(50-150)		
MS_201212040050	Chrysene-d12 (I)			96.4	%	96	(50-150)		
LCS1	Delta-BHC		2.0	2.07	ug/L	104	(70-130)		
LCS2	Delta-BHC		2.0	2.11	ug/L	105	(70-130)	20	1.9
MBLK	Delta-BHC			<0.05	ug/L				

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QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MRL_CHK	Delta-BHC		0.1	0.0890	ug/L	89	(50-150)		
MS_201212040050	Delta-BHC		2.0	2.06	ug/L	103	(70-130)		
LCS1	Di-(2-Ethylhexyl)adipate		2.0	1.92	ug/L	96	(70-130)		
LCS2	Di-(2-Ethylhexyl)adipate		2.0	1.95	ug/L	97	(70-130)	20	1.6
MBLK	Di-(2-Ethylhexyl)adipate			<0.15	ug/L				
MRL_CHK	Di-(2-Ethylhexyl)adipate		0.3	0.317	ug/L	106	(50-150)		
MS_201212040050	Di-(2-Ethylhexyl)adipate	ND	2.0	1.90	ug/L	95	(70-130)		
LCS1	Di(2-Ethylhexyl)phthalate		2.0	2.01	ug/L	100	(70-130)		
LCS2	Di(2-Ethylhexyl)phthalate		2.0	2.07	ug/L	103	(70-130)	20	2.9
MBLK	Di(2-Ethylhexyl)phthalate			<0.15	ug/L				
MRL_CHK	Di(2-Ethylhexyl)phthalate		0.6	0.633	ug/L	106	(50-150)		
MS_201212040050	Di(2-Ethylhexyl)phthalate	ND	2.0	2.00	ug/L	100	(70-130)		
LCS1	Diazinon (Qualitative)		2.0	1.82	ug/L	91	(70-130)		
LCS2	Diazinon (Qualitative)		2.0	1.79	ug/L	90	(70-130)	20	1.7
*BLK	Diazinon (Qualitative)			<0.10	ug/L				
RL_CHK	Diazinon (Qualitative)		0.1	0.0700	ug/L	70	(50-150)		
MS_201212040050	Diazinon (Qualitative)		2.0	1.72	ug/L	86	(70-130)		
LCS1	Dibenz(a,h)Anthracene		2.0	2.27	ug/L	113	(70-130)		
LCS2	Dibenz(a,h)Anthracene		2.0	2.33	ug/L	116	(70-130)	20	2.6
MBLK	Dibenz(a,h)Anthracene			<0.025	ug/L				
MRL_CHK	Dibenz(a,h)Anthracene		0.05	0.0420	ug/L	84	(50-150)		
MS_201212040050	Dibenz(a,h)Anthracene		2.0	2.03	ug/L	101	(70-130)		
LCS1	Dichlorvos (DDVP)		2.0	2.15	ug/L	108	(70-130)		
LCS2	Dichlorvos (DDVP)		2.0	2.24	ug/L	112	(70-130)	20	4.1
MBLK	Dichlorvos (DDVP)			<0.025	ug/L				
MRL_CHK	Dichlorvos (DDVP)		0.05	0.0560	ug/L	112	(50-150)		
MS_201212040050	Dichlorvos (DDVP)		2.0	2.21	ug/L	110	(70-130)		
LCS1	Dieldrin		2.0	2.05	ug/L	102	(70-130)		
LCS2	Dieldrin		2.0	2.04	ug/L	102	(70-130)	20	0.49
MBLK	Dieldrin			<0.05	ug/L				
MRL_CHK	Dieldrin		0.1	0.105	ug/L	105	(50-150)		
MS_201212040050	Dieldrin		2.0	2.01	ug/L	100	(70-130)		
LCS1	Diethylphthalate		2.0	2.09	ug/L	105	(70-130)		
LCS2	Diethylphthalate		2.0	2.21	ug/L	110	(70-130)	20	5.6
MBLK	Diethylphthalate			<0.15	ug/L				
MRL_CHK	Diethylphthalate		0.15	0.161	ug/L	107	(50-150)		
MS_201212040050	Diethylphthalate		2.0	2.16	ug/L	108	(70-130)		
LCS1	Dimethoate		2.0	1.64	ug/L	82	(35-100)		

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QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
LCS2	Dimethoate		2.0	1.71	ug/L	86	(35-100)	20	4.2
MBLK	Dimethoate			<0.05	ug/L				
MRL_CHK	Dimethoate		0.1	0.0710	ug/L	71	(35-100)		
MS_201212040050	Dimethoate		2.0	1.57	ug/L	79	(34-111)		
LCS1	Dimethylphthalate		2.0	2.07	ug/L	104	(70-130)		
LCS2	Dimethylphthalate		2.0	2.15	ug/L	108	(70-130)	20	3.8
MBLK	Dimethylphthalate			<0.15	ug/L				
MRL_CHK	Dimethylphthalate		0.3	0.307	ug/L	102	(50-150)		
MS_201212040050	Dimethylphthalate		2.0	2.12	ug/L	106	(70-130)		
LCS1	Di-n-Butylphthalate		4.0	4.44	ug/L	111	(70-130)		
LCS2	Di-n-Butylphthalate		4.0	4.44	ug/L	111	(70-130)	20	0.0
MBLK	Di-n-Butylphthalate			<0.15	ug/L				
MRL_CHK	Di-n-Butylphthalate		0.3	0.325	ug/L	108	(50-150)		
MS_201212040050	Di-n-Butylphthalate		4.0	4.41	ug/L	110	(70-130)		
LCS1	Di-N-octylphthalate		2.0	1.76	ug/L	88	(70-130)		
LCS2	Di-N-octylphthalate		2.0	1.84	ug/L	92	(70-130)	20	4.4
MBLK	Di-N-octylphthalate			<0.05	ug/L				
MRL_CHK	Di-N-octylphthalate		0.1	0.0910	ug/L	91	(50-150)		
MS_201212040050	Di-N-octylphthalate		2.0	1.71	ug/L	86	(70-130)		
LCS1	Endosulfan I (Alpha)		2.0	2.11	ug/L	105	(70-130)		
LCS2	Endosulfan I (Alpha)		2.0	2.12	ug/L	106	(70-130)	20	0.47
MBLK	Endosulfan I (Alpha)			<0.05	ug/L				
MRL_CHK	Endosulfan I (Alpha)		0.1	0.102	ug/L	102	(50-150)		
MS_201212040050	Endosulfan I (Alpha)		2.0	2.14	ug/L	107	(70-130)		
LCS1	Endosulfan II (Beta)		2.0	2.26	ug/L	113	(70-130)		
LCS2	Endosulfan II (Beta)		2.0	2.20	ug/L	110	(70-130)	20	2.7
MBLK	Endosulfan II (Beta)			<0.05	ug/L				
MRL_CHK	Endosulfan II (Beta)		0.1	0.101	ug/L	101	(50-150)		
MS_201212040050	Endosulfan II (Beta)		2.0	2.28	ug/L	114	(70-130)		
LCS1	Endosulfan Sulfate		2.0	2.14	ug/L	107	(70-130)		
LCS2	Endosulfan Sulfate		2.0	2.14	ug/L	107	(70-130)	20	0.0
MBLK	Endosulfan Sulfate			<0.05	ug/L				
MRL_CHK	Endosulfan Sulfate		0.1	0.0750	ug/L	75	(50-150)		
MS_201212040050	Endosulfan Sulfate		2.0	2.14	ug/L	107	(70-130)		
LCS1	Endrin		2.0	2.12	ug/L	106	(70-130)		
LCS2	Endrin		2.0	2.05	ug/L	103	(70-130)	20	3.8
MBLK	Endrin			<0.05	ug/L				
MRL_CHK	Endrin		0.1	0.0890	ug/L	89	(50-150)		

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QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MS_201212040050	Endrin		2.0	2.07	ug/L	104	(70-130)		
LCS1	Endrin Aldehyde		2.0	2.19	ug/L	109	(70-130)		
LCS2	Endrin Aldehyde		2.0	2.23	ug/L	112	(70-130)	20	1.8
MBLK	Endrin Aldehyde			<0.05	ug/L				
MRL_CHK	Endrin Aldehyde		0.1	0.104	ug/L	104	(50-150)		
MS_201212040050	Endrin Aldehyde		2.0	2.25	ug/L	113	(70-130)		
LCS1	EPTC		2.0	2.06	ug/L	103	(70-130)		
LCS2	EPTC		2.0	2.12	ug/L	106	(70-130)	20	2.9
MBLK	EPTC			<0.05	ug/L				
MRL_CHK	EPTC		0.1	0.0980	ug/L	98	(50-150)		
MS_201212040050	EPTC		2.0	2.07	ug/L	103	(70-130)		
LCS1	Fluoranthene		2.0	2.14	ug/L	107	(70-130)		
LCS2	Fluoranthene		2.0	2.11	ug/L	106	(70-130)	20	1.4
MBLK	Fluoranthene			<0.05	ug/L				
MRL_CHK	Fluoranthene		0.05	0.0500	ug/L	100	(50-150)		
MS_201212040050	Fluoranthene		2.0	2.13	ug/L	107	(70-130)		
LCS1	Fluorene		2.0	2.06	ug/L	103	(70-130)		
LCS2	Fluorene		2.0	2.08	ug/L	104	(70-130)	20	0.97
MBLK	Fluorene			<0.05	ug/L				
MRL_CHK	Fluorene		0.05	0.0480	ug/L	96	(50-150)		
MS_201212040050	Fluorene		2.0	2.06	ug/L	103	(70-130)		
LCS1	gamma-Chlordane		2.0	2.03	ug/L	101	(70-130)		
LCS2	gamma-Chlordane		2.0	2.04	ug/L	102	(70-130)	20	0.49
MBLK	gamma-Chlordane			<0.025	ug/L				
MRL_CHK	gamma-Chlordane		0.05	0.0550	ug/L	110	(50-150)		
MS_201212040050	gamma-Chlordane		2.0	2.09	ug/L	105	(70-130)		
LCS1	Heptachlor		2.0	2.03	ug/L	101	(70-130)		
LCS2	Heptachlor		2.0	2.03	ug/L	102	(70-130)	20	0.0
MBLK	Heptachlor			<0.015	ug/L				
MRL_CHK	Heptachlor		0.04	0.0390	ug/L	98	(50-150)		
MS_201212040050	Heptachlor		2.0	2.06	ug/L	103	(70-130)		
LCS1	Heptachlor Epoxide (isomer B)		2.0	2.07	ug/L	104	(70-130)		
LCS2	Heptachlor Epoxide (isomer B)		2.0	2.07	ug/L	103	(70-130)	20	0.0
MBLK	Heptachlor Epoxide (isomer B)			<0.025	ug/L				
MRL_CHK	Heptachlor Epoxide (isomer B)		0.05	0.0460	ug/L	92	(50-150)		
MS_201212040050	Heptachlor Epoxide (isomer B)		2.0	2.04	ug/L	102	(70-130)		
LCS1	Hexachlorobenzene		2.0	2.02	ug/L	101	(70-130)		
LCS2	Hexachlorobenzene		2.0	1.98	ug/L	99	(70-130)	20	2.0

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Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.
RPD not calculated for LCS2 when different a concentration than LCS1 is used.
RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level).
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Laboratory QC
Report: 416854

City of Wichita Falls

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MBLK	Hexachlorobenzene			<0.025	ug/L				
MRL_CHK	Hexachlorobenzene		0.05	0.0540	ug/L	108	(50-150)		
MS_201212040050	Hexachlorobenzene	ND	2.0	2.03	ug/L	101	(70-130)		
LCS1	Hexachlorocyclopentadiene		2.0	2.07	ug/L	103	(70-130)		
LCS2	Hexachlorocyclopentadiene		2.0	1.98	ug/L	99	(70-130)	20	4.4
MBLK	Hexachlorocyclopentadiene			<0.025	ug/L				
MRL_CHK	Hexachlorocyclopentadiene		0.05	0.0440	ug/L	88	(50-150)		
MS_201212040050	Hexachlorocyclopentadiene	ND	2.0	2.09	ug/L	104	(70-130)		
LCS1	Indeno(1,2,3,c,d)Pyrene		2.0	2.22	ug/L	111	(70-130)		
LCS2	Indeno(1,2,3,c,d)Pyrene		2.0	2.32	ug/L	116	(70-130)	20	4.4
MBLK	Indeno(1,2,3,c,d)Pyrene			<0.025	ug/L				
MRL_CHK	Indeno(1,2,3,c,d)Pyrene		0.05	0.0420	ug/L	84	(50-150)		
MS_201212040050	Indeno(1,2,3,c,d)Pyrene		2.0	2.12	ug/L	106	(70-130)		
LCS1	Isophorone		2.0	2.06	ug/L	103	(70-130)		
CS2	Isophorone		2.0	2.13	ug/L	107	(70-130)	20	3.3
BLK	Isophorone			<0.25	ug/L				
MRL_CHK	Isophorone		0.1	0.109	ug/L	109	(50-150)		
MS_201212040050	Isophorone		2.0	2.07	ug/L	103	(70-130)		
LCS1	Lindane		2.0	2.03	ug/L	101	(70-130)		
LCS2	Lindane		2.0	2.04	ug/L	102	(70-130)	20	0.49
MBLK	Lindane			<0.02	ug/L				
MRL_CHK	Lindane		0.04	0.0470	ug/L	118	(50-150)		
MS_201212040050	Lindane		2.0	2.06	ug/L	103	(70-130)		
LCS1	Malathion		2.0	2.29	ug/L	115	(70-130)		
LCS2	Malathion		2.0	2.35	ug/L	117	(70-130)	20	2.6
MBLK	Malathion			<0.05	ug/L				
MRL_CHK	Malathion		0.1	0.111	ug/L	111	(50-150)		
MS_201212040050	Malathion		2.0	2.36	ug/L	118	(70-130)		
LCS1	Methoxychlor		2.0	2.06	ug/L	103	(70-130)		
LCS2	Methoxychlor		2.0	2.03	ug/L	101	(70-130)	20	1.5
MBLK	Methoxychlor			<0.05	ug/L				
MRL_CHK	Methoxychlor		0.1	0.0970	ug/L	97	(50-150)		
MS_201212040050	Methoxychlor		2.0	2.11	ug/L	106	(70-130)		
LCS1	Metolachlor		2.0	2.13	ug/L	106	(70-130)		
LCS2	Metolachlor		2.0	2.16	ug/L	108	(70-130)	20	1.4
MBLK	Metolachlor			<0.025	ug/L				
MRL_CHK	Metolachlor		0.05	0.0640	ug/L	128	(50-150)		
MS_201212040050	Metolachlor		2.0	2.11	ug/L	105	(70-130)		

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PD not calculated for LCS2 when different a concentration than LCS1 is used.
RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level).
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Laboratory QC
Report: 416854

City of Wichita Falls

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
LCS1	Metribuzin		2.0	2.15	ug/L	107	(70-130)		
LCS2	Metribuzin		2.0	2.19	ug/L	110	(70-130)	20	1.8
MBLK	Metribuzin			<0.05	ug/L				
MRL_CHK	Metribuzin		0.05	0.0620	ug/L	124	(50-150)		
MS_201212040050	Metribuzin		2.0	2.12	ug/L	106	(70-130)		
LCS1	Molinate		2.0	2.05	ug/L	102	(70-130)		
LCS2	Molinate		2.0	2.09	ug/L	104	(70-130)	20	1.9
MBLK	Molinate			<0.05	ug/L				
MRL_CHK	Molinate		0.1	0.104	ug/L	104	(50-150)		
MS_201212040050	Molinate	ND	2.0	2.05	ug/L	103	(70-130)		
LCS1	Naphthalene		2.0	2.00	ug/L	100	(70-130)		
LCS2	Naphthalene		2.0	1.97	ug/L	98	(70-130)	20	1.5
MBLK	Naphthalene			<0.05	ug/L				
MRL_CHK	Naphthalene		0.1	0.107	ug/L	107	(50-150)		
MS_201212040050	Naphthalene		2.0	1.98	ug/L	99	(70-130)		
LCS1	Parathion		2.0	2.17	ug/L	108	(70-130)		
LCS2	Parathion		2.0	2.22	ug/L	111	(70-130)	20	2.7
MBLK	Parathion			<0.05	ug/L				
MRL_CHK	Parathion		0.1	0.115	ug/L	115	(50-150)		
MS_201212040050	Parathion		2.0	2.18	ug/L	109	(70-130)		
LCS1	Pendimethalin		2.0	2.13	ug/L	107	(70-130)		
LCS2	Pendimethalin		2.0	2.18	ug/L	109	(70-130)	20	2.3
MBLK	Pendimethalin			<0.05	ug/L				
MRL_CHK	Pendimethalin		0.1	0.125	ug/L	125	(50-150)		
MS_201212040050	Pendimethalin		2.0	2.19	ug/L	110	(70-130)		
LCS1	Pentachlorophenol		8.0	8.23	ug/L	103	(70-130)		
LCS2	Pentachlorophenol		8.0	8.23	ug/L	103	(70-130)	20	0.0
MBLK	Pentachlorophenol			<0.6	ug/L				
MRL_CHK	Pentachlorophenol		0.5	0.554	ug/L	111	(50-150)		
MS_201212040050	Pentachlorophenol		8.0	8.36	ug/L	105	(70-130)		
LCS1	Permethrin (mixed isomers)		4.0	3.99	ug/L	100	(70-130)		
LCS2	Permethrin (mixed isomers)		4.0	3.93	ug/L	98	(70-130)	20	1.5
MBLK	Permethrin (mixed isomers)			<0.1	ug/L				
MRL_CHK	Permethrin (mixed isomers)		0.15	0.239	ug/L	**159**	(50-150)		
MS_201212040050	Permethrin (mixed isomers)		4.0	3.89	ug/L	97	(70-130)		
LCS1	Perylene-d12 (S)			95.8	%	96	(70-130)		
LCS2	Perylene-d12 (S)			99.8	%	100	(70-130)		
MBLK	Perylene-d12 (S)			75.6	%	76	(70-130)		

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RPD not calculated for LCS2 when different a concentration than LCS1 is used.
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Laboratory QC
Report: 416854

City of Wichita Falls

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MRL_CHK	Perylene-d12 (S)			81.7	%	82	(70-130)		
MS_201212040050	Perylene-d12 (S)			96.2	%	96	(70-130)		
LCS1	Phenanthrene		2.0	2.10	ug/L	105	(70-130)		
LCS2	Phenanthrene		2.0	2.09	ug/L	105	(70-130)	20	0.95
MBLK	Phenanthrene			<0.02	ug/L				
MRL_CHK	Phenanthrene		0.02	0.0210	ug/L	105	(50-150)		
MS_201212040050	Phenanthrene		2.0	2.06	ug/L	103	(70-130)		
LCS1	Phenanthrene-d10 (I)			91.2	%	91	(50-150)		
LCS2	Phenanthrene-d10 (I)			83.9	%	84	(50-150)		
MBLK	Phenanthrene-d10 (I)			114	%	114	(50-150)		
MRL_CHK	Phenanthrene-d10 (I)			91.9	%	92	(50-150)		
MS_201212040050	Phenanthrene-d10 (I)			95.3	%	95	(50-150)		
LCS1	Propachlor		2.0	2.04	ug/L	102	(70-130)		
LCS2	Propachlor		2.0	2.10	ug/L	105	(70-130)	20	2.9
MBLK	Propachlor			<0.025	ug/L				
MRL_CHK	Propachlor		0.05	0.0740	ug/L	148	(50-150)		
MS_201212040050	Propachlor		2.0	2.01	ug/L	101	(70-130)		
LCS1	Pyrene		2.0	2.17	ug/L	109	(70-130)		
LCS2	Pyrene		2.0	2.17	ug/L	109	(70-130)	20	0.0
MBLK	Pyrene			<0.025	ug/L				
MRL_CHK	Pyrene		0.05	0.0480	ug/L	96	(50-150)		
MS_201212040050	Pyrene		2.0	2.17	ug/L	108	(70-130)		
LCS1	Simazine		2.0	2.12	ug/L	106	(70-130)		
LCS2	Simazine		2.0	2.20	ug/L	110	(70-130)	20	3.7
MBLK	Simazine			<0.025	ug/L				
MRL_CHK	Simazine		0.05	0.0460	ug/L	92	(50-150)		
MS_201212040050	Simazine	ND	2.0	2.17	ug/L	108	(70-130)		
LCS1	Terbacil		2.0	2.20	ug/L	110	(70-130)		
LCS2	Terbacil		2.0	2.26	ug/L	113	(70-130)	20	2.7
MBLK	Terbacil			<0.05	ug/L				
MRL_CHK	Terbacil		0.1	0.111	ug/L	111	(50-150)		
MS_201212040050	Terbacil		2.0	2.22	ug/L	111	(70-130)		
LCS1	Terbuthylazine		2.0	2.17	ug/L	109	(70-130)		
LCS2	Terbuthylazine		2.0	2.22	ug/L	111	(70-130)	20	2.3
MBLK	Terbuthylazine			<0.2	ug/L				
MRL_CHK	Terbuthylazine		0.1	0.0990	ug/L	99	(50-150)		
MS_201212040050	Terbuthylazine		2.0	2.20	ug/L	110	(70-130)		
LCS1	Thiobencarb		2.0	2.24	ug/L	112	(70-130)		

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RPD not calculated for LCS2 when different a concentration than LCS1 is used.
RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level).
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City of Wichita Falls

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
LCS2	Thiobencarb		2.0	2.25	ug/L	113	(70-130)	20	0.45
MBLK	Thiobencarb			<0.1	ug/L				
MRL_CHK	Thiobencarb		0.1	0.0980	ug/L	98	(50-150)		
MS_201212040050	Thiobencarb	ND	2.0	2.23	ug/L	112	(70-130)		
LCS1	trans-Nonachlor		2.0	2.09	ug/L	105	(70-130)		
LCS2	trans-Nonachlor		2.0	2.07	ug/L	103	(70-130)	20	0.96
MBLK	trans-Nonachlor			<0.025	ug/L				
MRL_CHK	trans-Nonachlor		0.05	0.0570	ug/L	114	(50-150)		
MS_201212040050	trans-Nonachlor		2.0	2.04	ug/L	102	(70-130)		
LCS1	Trifluralin		2.0	2.13	ug/L	106	(70-130)		
LCS2	Trifluralin		2.0	2.14	ug/L	107	(70-130)	20	0.47
MBLK	Trifluralin			<0.05	ug/L				
MRL_CHK	Trifluralin		0.1	0.100	ug/L	100	(50-150)		
MS_201212040050	Trifluralin		2.0	2.14	ug/L	107	(70-130)		
LCS1	Triphenylphosphate (S)			105	%	105	(70-130)		
LCS2	Triphenylphosphate (S)			109	%	109	(70-130)		
MBLK	Triphenylphosphate (S)			103	%	103	(70-130)		
MRL_CHK	Triphenylphosphate (S)			102	%	102	(70-130)		
MS_201212040050	Triphenylphosphate (S)			105	%	105	(70-130)		
QC Ref# 684680 - Volatile Organics by EPA 624 by EPA 624						**Analysis Date: 12/07/2012**			
LCS1	1,1,1-Trichloroethane		20	24.1	ug/L	121	(79-121)		
LCS2	1,1,1-Trichloroethane		20	24.5	ug/L	123	(79-121)	20	1.6
MBLK	1,1,1-Trichloroethane			<0.25	ug/L				
MRL_CHK	1,1,1-Trichloroethane		0.5	0.500	ug/L	100	(50-150)		
MS_201211280338	1,1,1-Trichloroethane	ND	10	11.1	ug/L	111	(75-144)		
LCS1	1,1,2,2-Tetrachloroethane		20	21.3	ug/L	107	(77-126)		
LCS2	1,1,2,2-Tetrachloroethane		20	22.0	ug/L	110	(77-126)	20	3.2
MBLK	1,1,2,2-Tetrachloroethane			<0.25	ug/L				
MRL_CHK	1,1,2,2-Tetrachloroethane		0.5	0.460	ug/L	92	(50-150)		
MS_201211280338	1,1,2,2-Tetrachloroethane	ND	10	9.34	ug/L	93	(79-130)		
LCS1	1,1,2-Trichloroethane		20	23.1	ug/L	116	(79-116)		
LCS2	1,1,2-Trichloroethane		20	23.1	ug/L	115	(79-116)	20	0.0
MBLK	1,1,2-Trichloroethane			<0.25	ug/L				
MRL_CHK	1,1,2-Trichloroethane		0.5	0.480	ug/L	96	(50-150)		
MS_201211280338	1,1,2-Trichloroethane	ND	10	10.5	ug/L	105	(76-129)		
LCS1	1,1-Dichloroethane		20	24.0	ug/L	120	(77-129)		
LCS2	1,1-Dichloroethane		20	23.8	ug/L	119	(77-129)	20	0.84
MBLK	1,1-Dichloroethane			<0.25	ug/L				

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QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MRL_CHK	1,1-Dichloroethane		0.5	0.530	ug/L	106	(50-150)		
MS_201211280338	1,1-Dichloroethane	ND	10	10.8	ug/L	108	(70-146)		
LCS1	1,1-Dichloroethylene		20	25.2	ug/L	126	(77-139)		
LCS2	1,1-Dichloroethylene		20	24.7	ug/L	124	(77-139)	20	2.0
MBLK	1,1-Dichloroethylene			<0.25	ug/L				
MRL_CHK	1,1-Dichloroethylene		0.5	0.510	ug/L	102	(50-150)		
MS_201211280338	1,1-Dichloroethylene	ND	10	10.2	ug/L	102	(75-134)		
LCS1	1,2-Dichloroethane		20	25.0	ug/L	**125**	(81-122)		
LCS2	1,2-Dichloroethane		20	24.5	ug/L	**123**	(81-122)	20	2.0
MBLK	1,2-Dichloroethane			<0.25	ug/L				
MRL_CHK	1,2-Dichloroethane		0.5	0.550	ug/L	110	(50-150)		
MS_201211280338	1,2-Dichloroethane	ND	10	10.9	ug/L	109	(75-135)		
LCS1	1,2-Dichloroethane-d4 (S)			104	%	104	(70-130)		
LCS2	1,2-Dichloroethane-d4 (S)			101	%	101	(70-130)		
MBLK	1,2-Dichloroethane-d4 (S)			112	%	112	(70-130)		
MRL_CHK	1,2-Dichloroethane-d4 (S)			104	%	104	(70-130)		
MS_201211280338	1,2-Dichloroethane-d4 (S)			106	%	106	(70-130)		
LCS1	1,2-Dichloropropane		20	23.7	ug/L	**119**	(77-118)		
LCS2	1,2-Dichloropropane		20	23.4	ug/L	117	(77-118)	20	1.3
MBLK	1,2-Dichloropropane			<0.25	ug/L				
MRL_CHK	1,2-Dichloropropane		0.5	0.550	ug/L	110	(50-150)		
MS_201211280338	1,2-Dichloropropane	ND	10	10.6	ug/L	106	(73-132)		
LCS1	2-Butanone (MEK)		200	257	ug/L	**128**	(65-122)		
LCS2	2-Butanone (MEK)		200	260	ug/L	**130**	(65-122)	20	1.2
MBLK	2-Butanone (MEK)			<2.5	ug/L				
MRL_CHK	2-Butanone (MEK)		5.0	4.77	ug/L	95	(50-150)		
MS_201211280338	2-Butanone (MEK)	ND	100	112	ug/L	112	(59-129)		
LCS1	2-Hexanone		200	265	ug/L	**133**	(72-128)		
LCS2	2-Hexanone		200	272	ug/L	**136**	(72-128)	20	2.6
MBLK	2-Hexanone			<2.5	ug/L				
MRL_CHK	2-Hexanone		5.0	5.46	ug/L	109	(50-150)		
MS_201211280338	2-Hexanone	ND	100	137	ug/L	**137**	(71-134)		
LCS1	4-Bromofluorobenzene (S)			96.0	%	96	(70-130)		
LCS2	4-Bromofluorobenzene (S)			100	%	100	(70-130)		
MBLK	4-Bromofluorobenzene (S)			101	%	101	(70-130)		
MRL_CHK	4-Bromofluorobenzene (S)			101	%	101	(70-130)		
MS_201211280338	4-Bromofluorobenzene (S)			99.2	%	99	(70-130)		
LCS1	4-Methyl-2-Pentanone (MIBK)		200	249	ug/L	125	(76-130)		

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Laboratory QC
Report: 416854

City of Wichita Falls

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
LCS2	4-Methyl-2-Pentanone (MIBK)		200	248	ug/L	124	(76-130)	20	0.40
MBLK	4-Methyl-2-Pentanone (MIBK)			<2.5	ug/L				
MRL_CHK	4-Methyl-2-Pentanone (MIBK)		5.0	5.44	ug/L	109	(50-150)		
MS_201211280338	4-Methyl-2-Pentanone (MIBK)	ND	100	134	ug/L	134	(75-136)		
LCS1	Acetone		200	237	ug/L	**118**	(47-117)		
LCS2	Acetone		200	256	ug/L	**128**	(47-117)	20	7.7
MBLK	Acetone			<5	ug/L				
MRL_CHK	Acetone		5.0	4.67	ug/L	93	(50-150)		
MS_201211280338	Acetone	ND	100	58.4	ug/L	57	(37-119)		
MBLK	Acrolein (Screen)			<25	ug/L				
MBLK	Acrylonitrile (Screen)			<25	ug/L				
LCS1	Benzene		20	24.3	ug/L	121	(60-156)		
LCS2	Benzene		20	23.7	ug/L	119	(60-156)	20	2.5
MBLK	Benzene			<0.25	ug/L				
MRL_CHK	Benzene		0.5	0.510	ug/L	102	(50-150)		
S_201211280338	Benzene	ND	10	10.6	ug/L	106	(76-133)		
LCS1	Bromoform		20	20.0	ug/L	99	(54-134)		
LCS2	Bromoform		20	19.4	ug/L	97	(54-134)	20	3.0
MBLK	Bromoform			<0.25	ug/L				
MRL_CHK	Bromoform		0.5	0.450	ug/L	90	(50-150)		
MS_201211280338	Bromoform	ND	10	6.97	ug/L	70	(51-140)		
LCS1	Bromomethane (Methyl Bromide)		20	26.4	ug/L	132	(67-144)		
LCS2	Bromomethane (Methyl Bromide)		20	21.6	ug/L	108	(67-144)	20	20
MBLK	Bromomethane (Methyl Bromide)			<0.25	ug/L				
MRL_CHK	Bromomethane (Methyl Bromide)		0.5	0.860	ug/L	**172**	(50-150)		
MS_201211280338	Bromomethane (Methyl Bromide)	ND	10	8.31	ug/L	83	(55-147)		
LCS1	Carbon disulfide		20	28.8	ug/L	**144**	(63-131)		
LCS2	Carbon disulfide		20	24.2	ug/L	121	(63-131)	20	17
MBLK	Carbon disulfide			<0.25	ug/L				
MRL_CHK	Carbon disulfide		0.5	1.81	ug/L	**362**	(50-150)		
MS_201211280338	Carbon disulfide		10	15.3	ug/L	138	(65-155)		
LCS1	Carbon Tetrachloride		20	21.2	ug/L	106	(73-127)		
LCS2	Carbon Tetrachloride		20	20.9	ug/L	105	(73-127)	20	1.4
MBLK	Carbon Tetrachloride			<0.25	ug/L				
MRL_CHK	Carbon Tetrachloride		0.5	0.570	ug/L	114	(50-150)		
MS_201211280338	Carbon Tetrachloride	ND	10	9.23	ug/L	92	(71-151)		
LCS1	Chlorobenzene		20	24.2	ug/L	121	(57-166)		
LCS2	Chlorobenzene		20	24.1	ug/L	121	(57-166)	20	0.41

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MBLK	Chlorobenzene			<0.25	ug/L				
MRL_CHK	Chlorobenzene		0.5	0.500	ug/L	100	(50-150)		
MS_201211280338	Chlorobenzene	ND	10	10.7	ug/L	107	(77-132)		
LCS1	Chlorodibromomethane		20	21.6	ug/L	108	(77-113)		
LCS2	Chlorodibromomethane		20	21.3	ug/L	106	(77-113)	20	1.4
MBLK	Chlorodibromomethane			<0.25	ug/L				
MRL_CHK	Chlorodibromomethane		0.5	0.610	ug/L	122	(50-150)		
MS_201211280338	Chlorodibromomethane	2.8	10	11.5	ug/L	87	(68-136)		
LCS1	Chloroform (Trichloromethane)		20	23.4	ug/L	117	(78-117)		
LCS2	Chloroform (Trichloromethane)		20	22.9	ug/L	115	(78-117)	20	2.2
MBLK	Chloroform (Trichloromethane)			<0.25	ug/L				
MRL_CHK	Chloroform (Trichloromethane)		0.5	0.540	ug/L	108	(50-150)		
MS_201211280338	Chloroform (Trichloromethane)	6.0	10	16.7	ug/L	107	(76-133)		
LCS1	Chloromethane(Methyl Chloride)		20	23.7	ug/L	119	(78-134)		
LCS2	Chloromethane(Methyl Chloride)		20	19.8	ug/L	99	(78-134)	20	17
MBLK	Chloromethane(Methyl Chloride)			<0.25	ug/L				
MRL_CHK	Chloromethane(Methyl Chloride)		0.5	0.680	ug/L	136	(50-150)		
MS_201211280338	Chloromethane(Methyl Chloride)	14	10	23.1	ug/L	93	(58-143)		
LCS1	cis-1,2-Dichloroethylene		20	23.2	ug/L	**116**	(80-114)		
LCS2	cis-1,2-Dichloroethylene		20	23.1	ug/L	**115**	(80-114)	20	0.43
MBLK	cis-1,2-Dichloroethylene			<0.25	ug/L				
MRL_CHK	cis-1,2-Dichloroethylene		0.5	0.480	ug/L	96	(50-150)		
MS_201211280338	cis-1,2-Dichloroethylene	ND	10	10.2	ug/L	102	(78-133)		
LCS1	cis-1,3-Dichloropropene		20	21.9	ug/L	109	(68-123)		
LCS2	cis-1,3-Dichloropropene		20	21.3	ug/L	106	(68-123)	20	2.8
MBLK	cis-1,3-Dichloropropene			<0.25	ug/L				
MRL_CHK	cis-1,3-Dichloropropene		0.5	0.630	ug/L	126	(50-150)		
MS_201211280338	cis-1,3-Dichloropropene	ND	10	7.87	ug/L	79	(65-120)		
LCS1	Dichlorodifluoromethane		20	22.1	ug/L	111	(46-165)		
LCS2	Dichlorodifluoromethane		20	18.4	ug/L	92	(46-165)	20	18
MBLK	Dichlorodifluoromethane			<0.25	ug/L				
MRL_CHK	Dichlorodifluoromethane		0.5	0.620	ug/L	124	(50-150)		
MS_201211280338	Dichlorodifluoromethane	ND	10	16.6	ug/L	166	(30-169)		
LCS1	Dichloromethane		20	21.3	ug/L	107	(77-121)		
LCS2	Dichloromethane		20	20.8	ug/L	104	(77-121)	20	1.9
MBLK	Dichloromethane			<0.25	ug/L				
MRL_CHK	Dichloromethane		0.5	0.500	ug/L	100	(50-150)		
MS_201211280338	Dichloromethane	ND	10	9.07	ug/L	91	(75-132)		

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QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
LCS1	Ethyl benzene		20	22.4	ug/L	112	(79-122)		
LCS2	Ethyl benzene		20	21.8	ug/L	109	(79-122)	20	2.7
MBLK	Ethyl benzene			<0.25	ug/L				
MRL_CHK	Ethyl benzene		0.5	0.720	ug/L	144	(50-150)		
MS_201211280338	Ethyl benzene	ND	10	9.61	ug/L	96	(68-146)		
LCS1	m,p-Xylenes		40	43.3	ug/L	108	(82-123)		
LCS2	m,p-Xylenes		40	42.7	ug/L	107	(82-123)	20	1.4
MBLK	m,p-Xylenes			<0.25	ug/L				
MRL_CHK	m,p-Xylenes		1.0	1.36	ug/L	136	(50-150)		
MS_201211280338	m,p-Xylenes	ND	20	19.2	ug/L	96	(79-142)		
LCS1	m-Dichlorobenzene (1,3-DCB)		20	19.0	ug/L	95	(76-124)		
LCS2	m-Dichlorobenzene (1,3-DCB)		20	19.5	ug/L	98	(76-124)	20	2.6
MBLK	m-Dichlorobenzene (1,3-DCB)			<0.25	ug/L				
MRL_CHK	m-Dichlorobenzene (1,3-DCB)		0.5	0.490	ug/L	98	(50-150)		
MS_201211280338	m-Dichlorobenzene (1,3-DCB)	ND	10	8.75	ug/L	88	(76-139)		
LCS1	Methyl Tert-butyl ether (MTBE)		20	22.9	ug/L	114	(70-130)		
LCS2	Methyl Tert-butyl ether (MTBE)		20	24.1	ug/L	120	(70-130)	20	5.1
MBLK	Methyl Tert-butyl ether (MTBE)			<0.25	ug/L				
MRL_CHK	Methyl Tert-butyl ether (MTBE)		0.5	0.550	ug/L	110	(50-150)		
MS_201211280338	Methyl Tert-butyl ether (MTBE)	ND	10	11.4	ug/L	114	(70-130)		
LCS1	o-Dichlorobenzene (1,2-DCB)		20	20.3	ug/L	101	(79-118)		
LCS2	o-Dichlorobenzene (1,2-DCB)		20	20.4	ug/L	102	(79-118)	20	0.49
MBLK	o-Dichlorobenzene (1,2-DCB)			<0.25	ug/L				
MRL_CHK	o-Dichlorobenzene (1,2-DCB)		0.5	0.460	ug/L	92	(50-150)		
MS_201211280338	o-Dichlorobenzene (1,2-DCB)	ND	10	8.97	ug/L	90	(80-125)		
LCS1	o-Xylene		20	20.8	ug/L	104	(79-120)		
LCS2	o-Xylene		20	20.7	ug/L	104	(79-120)	20	0.96
MBLK	o-Xylene			<0.25	ug/L				
MRL_CHK	o-Xylene		0.5	0.690	ug/L	138	(50-150)		
MS_201211280338	o-Xylene	ND	10	9.55	ug/L	96	(91-123)		
LCS1	p-Dichlorobenzene (1,4-DCB)		20	19.4	ug/L	97	(74-130)		
LCS2	p-Dichlorobenzene (1,4-DCB)		20	19.6	ug/L	98	(74-130)	20	1.0
MBLK	p-Dichlorobenzene (1,4-DCB)			<0.25	ug/L				
MRL_CHK	p-Dichlorobenzene (1,4-DCB)		0.5	0.480	ug/L	96	(50-150)		
MS_201211280338	p-Dichlorobenzene (1,4-DCB)	ND	10	8.79	ug/L	88	(71-145)		
LCS1	Styrene		20	19.4	ug/L	97	(77-125)		
LCS2	Styrene		20	19.2	ug/L	96	(77-125)	20	1.0
MBLK	Styrene			<0.25	ug/L				

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MRL_CHK	Styrene		0.5	0.660	ug/L	132	(50-150)		
MS_201211280338	Styrene	ND	10	9.03	ug/L	90	(66-142)		
LCS1	Tetrachloroethylene (PCE)		20	24.7	ug/L	**123**	(79-122)		
LCS2	Tetrachloroethylene (PCE)		20	23.8	ug/L	119	(79-122)	20	3.7
MBLK	Tetrachloroethylene (PCE)			<0.25	ug/L				
MRL_CHK	Tetrachloroethylene (PCE)		0.5	0.540	ug/L	108	(50-150)		
MS_201211280338	Tetrachloroethylene (PCE)	ND	10	11.1	ug/L	111	(72-146)		
LCS1	Tetrahydrofuran		200	252	ug/L	126	(67-130)		
LCS2	Tetrahydrofuran		200	247	ug/L	123	(67-130)	20	2.0
MBLK	Tetrahydrofuran			<5.0	ug/L				
MRL_CHK	Tetrahydrofuran		5.0	4.51	ug/L	90	(50-150)		
MS_201211280338	Tetrahydrofuran	ND	100	110	ug/L	110	(68-134)		
LCS1	Toluene		20	24.9	ug/L	**124**	(80-118)		
LCS2	Toluene		20	24.2	ug/L	**121**	(80-118)	20	2.9
MBLK	Toluene			<0.25	ug/L				
MRL_CHK	Toluene		0.5	0.520	ug/L	104	(50-150)		
MS_201211280338	Toluene	ND	10	11.1	ug/L	111	(66-143)		
LCS1	Toluene-d8 (S)			106	%	106	(70-130)		
LCS2	Toluene-d8 (S)			106	%	106	(70-130)		
MBLK	Toluene-d8 (S)			102	%	102	(70-130)		
MRL_CHK	Toluene-d8 (S)			103	%	103	(70-130)		
MS_201211280338	Toluene-d8 (S)			108	%	108	(70-130)		
LCS1	trans-1,2-Dichloroethylene		20	23.9	ug/L	119	(82-122)		
LCS2	trans-1,2-Dichloroethylene		20	23.8	ug/L	119	(82-122)	20	0.42
MBLK	trans-1,2-Dichloroethylene			<0.25	ug/L				
MRL_CHK	trans-1,2-Dichloroethylene		0.5	0.570	ug/L	114	(50-150)		
MS_201211280338	trans-1,2-Dichloroethylene	ND	10	9.84	ug/L	98	(74-138)		
LCS1	trans-1,3-Dichloropropene		20	22.0	ug/L	110	(64-126)		
LCS2	trans-1,3-Dichloropropene		20	20.9	ug/L	105	(64-126)	20	5.1
MBLK	trans-1,3-Dichloropropene			<0.25	ug/L				
MRL_CHK	trans-1,3-Dichloropropene		0.5	0.640	ug/L	128	(50-150)		
MS_201211280338	trans-1,3-Dichloropropene	ND	10	7.07	ug/L	71	(61-127)		
LCS1	Trichloroethylene (TCE)		20	23.3	ug/L	117	(78-119)		
LCS2	Trichloroethylene (TCE)		20	23.7	ug/L	119	(78-119)	20	1.7
MBLK	Trichloroethylene (TCE)			<0.25	ug/L				
MRL_CHK	Trichloroethylene (TCE)		0.5	0.530	ug/L	106	(50-150)		
MS_201211280338	Trichloroethylene (TCE)	ND	10	11.0	ug/L	110	(71-139)		
LCS1	Trichlorofluoromethane		20	22.0	ug/L	110	(70-145)		

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LCS2	Trichlorofluoromethane		20	19.0	ug/L	95	(70-145)	20	15
MBLK	Trichlorofluoromethane			<0.25	ug/L				
MRL_CHK	Trichlorofluoromethane		0.5	0.410	ug/L	82	(50-150)		
MS_201211280338	Trichlorofluoromethane	ND	10	9.24	ug/L	92	(63-161)		
LCS1	Vinyl Acetate		100	102	ug/L	102	(72-136)		
LCS2	Vinyl Acetate		100	100	ug/L	100	(72-136)	20	2.0
MBLK	Vinyl Acetate			<0.25	ug/L				
MRL_CHK	Vinyl Acetate		2.5	2.55	ug/L	102	(50-150)		
MS_201211280338	Vinyl Acetate	ND	50	71.2	ug/L	142	(55-146)		
LCS1	Vinyl chloride (VC)		20	23.0	ug/L	115	(66-140)		
LCS2	Vinyl chloride (VC)		20	20.0	ug/L	100	(66-140)	20	14
MBLK	Vinyl chloride (VC)			<0.25	ug/L				
MRL_CHK	Vinyl chloride (VC)		0.5	0.690	ug/L	138	(50-150)		
MS_201211280338	Vinyl chloride (VC)	ND	10	14.2	ug/L	142	(56-159)		
QC Ref# 684795 - Volatile Organics by EPA 624 by EPA 624						**Analysis Date: 12/11/2012**			
LCS1	1,1,1-Trichloroethane		20	19.1	ug/L	95	(79-121)		
LCS2	1,1,1-Trichloroethane		20	18.8	ug/L	94	(79-121)	20	1.6
MBLK	1,1,1-Trichloroethane			<0.25	ug/L				
MRL_CHK	1,1,1-Trichloroethane		0.5	0.480	ug/L	96	(50-150)		
MS_201212120139	1,1,1-Trichloroethane	ND	10	7.64	ug/L	76	(75-144)		
LCS1	1,1,2,2-Tetrachloroethane		20	21.8	ug/L	109	(77-126)		
LCS2	1,1,2,2-Tetrachloroethane		20	21.8	ug/L	109	(77-126)	20	0.0
MBLK	1,1,2,2-Tetrachloroethane			<0.25	ug/L				
MRL_CHK	1,1,2,2-Tetrachloroethane		0.5	0.660	ug/L	132	(50-150)		
MS_201212120139	1,1,2,2-Tetrachloroethane	ND	10	9.16	ug/L	92	(79-130)		
LCS1	1,1,2-Trichloroethane		20	18.7	ug/L	94	(79-116)		
LCS2	1,1,2-Trichloroethane		20	18.6	ug/L	93	(79-116)	20	0.54
MBLK	1,1,2-Trichloroethane			<0.25	ug/L				
MRL_CHK	1,1,2-Trichloroethane		0.5	0.510	ug/L	102	(50-150)		
MS_201212120139	1,1,2-Trichloroethane	ND	10	8.18	ug/L	82	(76-129)		
LCS1	1,1-Dichloroethane		20	18.4	ug/L	92	(77-129)		
LCS2	1,1-Dichloroethane		20	18.4	ug/L	92	(77-129)	20	0.0
MBLK	1,1-Dichloroethane			<0.25	ug/L				
MRL_CHK	1,1-Dichloroethane		0.5	0.460	ug/L	92	(50-150)		
MS_201212120139	1,1-Dichloroethane	ND	10	7.47	ug/L	75	(70-146)		
LCS1	1,1-Dichloroethylene		20	18.0	ug/L	90	(77-139)		
LCS2	1,1-Dichloroethylene		20	17.3	ug/L	86	(77-139)	20	4.0
MBLK	1,1-Dichloroethylene			<0.25	ug/L				

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QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MRL_CHK	1,1-Dichloroethylene		0.5	0.530	ug/L	106	(50-150)		
MS_201212120139	1,1-Dichloroethylene	ND	10	6.36	ug/L	**62**	(75-134)		
LCS1	1,2-Dichloroethane		20	19.4	ug/L	97	(81-122)		
LCS2	1,2-Dichloroethane		20	19.1	ug/L	96	(81-122)	20	1.6
MBLK	1,2-Dichloroethane			<0.25	ug/L				
MRL_CHK	1,2-Dichloroethane		0.5	0.520	ug/L	104	(50-150)		
MS_201212120139	1,2-Dichloroethane	ND	10	8.07	ug/L	81	(75-135)		
LCS1	1,2-Dichloroethane-d4 (S)			91.2	%	91	(70-130)		
LCS2	1,2-Dichloroethane-d4 (S)			90.6	%	91	(70-130)		
MBLK	1,2-Dichloroethane-d4 (S)			94.4	%	94	(70-130)		
MRL_CHK	1,2-Dichloroethane-d4 (S)			91.0	%	91	(70-130)		
MS_201212120139	1,2-Dichloroethane-d4 (S)			92.4	%	92	(70-130)		
LCS1	1,2-Dichloropropane		20	17.8	ug/L	89	(77-118)		
LCS2	1,2-Dichloropropane		20	17.6	ug/L	88	(77-118)	20	1.1
MBLK	1,2-Dichloropropane			<0.25	ug/L				
MRL_CHK	1,2-Dichloropropane		0.5	0.460	ug/L	92	(50-150)		
MS_201212120139	1,2-Dichloropropane	ND	10	7.51	ug/L	75	(73-132)		
LCS1	2-Butanone (MEK)		200	163	ug/L	82	(65-122)		
LCS2	2-Butanone (MEK)		200	174	ug/L	87	(65-122)	20	6.5
MBLK	2-Butanone (MEK)			<2.5	ug/L				
MRL_CHK	2-Butanone (MEK)		5.0	5.37	ug/L	107	(50-150)		
MS_201212120139	2-Butanone (MEK)	ND	100	96.3	ug/L	96	(59-129)		
LCS1	2-Hexanone		200	174	ug/L	87	(72-128)		
LCS2	2-Hexanone		200	184	ug/L	92	(72-128)	20	5.6
MBLK	2-Hexanone			<2.5	ug/L				
MRL_CHK	2-Hexanone		5.0	5.58	ug/L	112	(50-150)		
MS_201212120139	2-Hexanone	ND	100	101	ug/L	101	(71-134)		
LCS1	4-Bromofluorobenzene (S)			110	%	110	(70-130)		
LCS2	4-Bromofluorobenzene (S)			105	%	105	(70-130)		
MBLK	4-Bromofluorobenzene (S)			98.6	%	99	(70-130)		
MRL_CHK	4-Bromofluorobenzene (S)			100	%	100	(70-130)		
MS_201212120139	4-Bromofluorobenzene (S)			102	%	102	(70-130)		
LCS1	4-Methyl-2-Pentanone (MIBK)		200	167	ug/L	83	(76-130)		
LCS2	4-Methyl-2-Pentanone (MIBK)		200	178	ug/L	89	(76-130)	20	6.4
MBLK	4-Methyl-2-Pentanone (MIBK)			<2.5	ug/L				
MRL_CHK	4-Methyl-2-Pentanone (MIBK)		5.0	4.72	ug/L	94	(50-150)		
MS_201212120139	4-Methyl-2-Pentanone (MIBK)	ND	100	90.9	ug/L	91	(75-136)		
LCS1	Acetone		200	152	ug/L	76	(47-117)		

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Laboratory QC
Report: 416854

City of Wichita Falls

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
LCS2	Acetone		200	158	ug/L	79	(47-117)	20	3.9
MBLK	Acetone			<5	ug/L				
MRL_CHK	Acetone		5.0	6.41	ug/L	128	(50-150)		
MS_201212120139	Acetone	ND	100	112	ug/L	108	(37-119)		
MBLK	Acrolein (Screen)			<25	ug/L				
MBLK	Acrylonitrile (Screen)			<25	ug/L				
LCS1	Benzene		20	18.0	ug/L	90	(60-156)		
LCS2	Benzene		20	17.8	ug/L	89	(60-156)	20	1.1
MBLK	Benzene			<0.25	ug/L				
MRL_CHK	Benzene		0.5	0.530	ug/L	106	(50-150)		
MS_201212120139	Benzene	ND	10	7.13	ug/L	71	(76-133)		
LCS1	Bromoform		20	19.1	ug/L	95	(54-134)		
LCS2	Bromoform		20	19.0	ug/L	95	(54-134)	20	0.53
MBLK	Bromoform			<0.25	ug/L				
MRL_CHK	Bromoform		0.5	0.600	ug/L	120	(50-150)		
S_201212120139	Bromoform	2.9	10	10.7	ug/L	78	(51-140)		
LCS1	Bromomethane (Methyl Bromide)		20	11.5	ug/L	58	(67-144)		
LCS2	Bromomethane (Methyl Bromide)		20	11.5	ug/L	57	(67-144)	20	0.0
MBLK	Bromomethane (Methyl Bromide)			<0.25	ug/L				
MRL_CHK	Bromomethane (Methyl Bromide)		0.5	0.570	ug/L	114	(50-150)		
MS_201212120139	Bromomethane (Methyl Bromide)	ND	10	5.25	ug/L	53	(55-147)		
LCS1	Carbon disulfide		20	17.1	ug/L	86	(63-131)		
LCS2	Carbon disulfide		20	16.6	ug/L	83	(63-131)	20	2.4
MBLK	Carbon disulfide			<0.25	ug/L				
MRL_CHK	Carbon disulfide		0.5	0.590	ug/L	118	(50-150)		
MS_201212120139	Carbon disulfide	ND	10	7.97	ug/L	77	(65-155)		
LCS1	Carbon Tetrachloride		20	19.1	ug/L	95	(73-127)		
LCS2	Carbon Tetrachloride		20	18.7	ug/L	93	(73-127)	20	2.1
MBLK	Carbon Tetrachloride			<0.25	ug/L				
MRL_CHK	Carbon Tetrachloride		0.5	0.480	ug/L	96	(50-150)		
MS_201212120139	Carbon Tetrachloride	ND	10	7.67	ug/L	77	(71-151)		
LCS1	Chlorobenzene		20	19.3	ug/L	96	(57-166)		
LCS2	Chlorobenzene		20	18.7	ug/L	94	(57-166)	20	3.2
MBLK	Chlorobenzene			<0.25	ug/L				
MRL_CHK	Chlorobenzene		0.5	0.510	ug/L	102	(50-150)		
MS_201212120139	Chlorobenzene	ND	10	7.98	ug/L	80	(77-132)		
LCS1	Chlorodibromomethane		20	19.5	ug/L	98	(77-113)		
LCS2	Chlorodibromomethane		20	19.6	ug/L	98	(77-113)	20	0.51

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QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MBLK	Chlorodibromomethane			<0.25	ug/L				
MRL_CHK	Chlorodibromomethane		0.5	0.450	ug/L	90	(50-150)		
MS_201212120139	Chlorodibromomethane	2.4	10	10.7	ug/L	83	(68-136)		
LCS1	Chloroform (Trichloromethane)		20	18.8	ug/L	94	(78-117)		
LCS2	Chloroform (Trichloromethane)		20	18.4	ug/L	92	(78-117)	20	2.1
MBLK	Chloroform (Trichloromethane)			<0.25	ug/L				
MRL_CHK	Chloroform (Trichloromethane)		0.5	0.490	ug/L	98	(50-150)		
MS_201212120139	Chloroform (Trichloromethane)	ND	10	7.94	ug/L	76	(76-133)		
LCS1	Chloromethane(Methyl Chloride)		20	16.6	ug/L	83	(78-134)		
LCS2	Chloromethane(Methyl Chloride)		20	15.3	ug/L	77	(78-134)	20	8.2
MBLK	Chloromethane(Methyl Chloride)			<0.25	ug/L				
MRL_CHK	Chloromethane(Methyl Chloride)		0.5	0.710	ug/L	142	(50-150)		
MS_201212120139	Chloromethane(Methyl Chloride)	ND	10	8.28	ug/L	83	(58-143)		
LCS1	cis-1,2-Dichloroethylene		20	17.6	ug/L	88	(80-114)		
LCS2	cis-1,2-Dichloroethylene		20	17.4	ug/L	87	(80-114)	20	1.1
MBLK	cis-1,2-Dichloroethylene			<0.25	ug/L				
MRL_CHK	cis-1,2-Dichloroethylene		0.5	0.480	ug/L	96	(50-150)		
MS_201212120139	cis-1,2-Dichloroethylene	ND	10	7.29	ug/L	73	(78-133)		
LCS1	cis-1,3-Dichloropropene		20	18.4	ug/L	92	(68-123)		
LCS2	cis-1,3-Dichloropropene		20	18.3	ug/L	92	(68-123)	20	0.55
MBLK	cis-1,3-Dichloropropene			<0.25	ug/L				
MRL_CHK	cis-1,3-Dichloropropene		0.5	0.530	ug/L	106	(50-150)		
MS_201212120139	cis-1,3-Dichloropropene	ND	10	7.50	ug/L	75	(65-120)		
LCS1	Dichlorodifluoromethane		20	15.3	ug/L	77	(46-165)		
LCS2	Dichlorodifluoromethane		20	15.1	ug/L	75	(46-165)	20	1.3
MBLK	Dichlorodifluoromethane			<0.25	ug/L				
MRL_CHK	Dichlorodifluoromethane		0.5	0.560	ug/L	112	(50-150)		
MS_201212120139	Dichlorodifluoromethane	ND	10	8.13	ug/L	81	(30-169)		
LCS1	Dichloromethane		20	18.6	ug/L	93	(77-121)		
LCS2	Dichloromethane		20	18.0	ug/L	90	(77-121)	20	3.3
MBLK	Dichloromethane			<0.25	ug/L				
MRL_CHK	Dichloromethane		0.5	0.490	ug/L	98	(50-150)		
MS_201212120139	Dichloromethane	ND	10	7.27	ug/L	73	(75-132)		
LCS1	Ethyl benzene		20	19.2	ug/L	96	(79-122)		
LCS2	Ethyl benzene		20	18.3	ug/L	92	(79-122)	20	4.8
MBLK	Ethyl benzene			<0.25	ug/L				
MRL_CHK	Ethyl benzene		0.5	0.500	ug/L	100	(50-150)		
MS_201212120139	Ethyl benzene	ND	10	7.58	ug/L	76	(68-146)		

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QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
LCS1	m,p-Xylenes		40	38.2	ug/L	96	(82-123)		
LCS2	m,p-Xylenes		40	37.2	ug/L	93	(82-123)	20	2.9
MBLK	m,p-Xylenes			<0.25	ug/L				
MRL_CHK	m,p-Xylenes		1.0	0.980	ug/L	98	(50-150)		
MS_201212120139	m,p-Xylenes	ND	20	15.6	ug/L	**78**	(79-142)		
LCS1	m-Dichlorobenzene (1,3-DCB)		20	21.9	ug/L	110	(76-124)		
LCS2	m-Dichlorobenzene (1,3-DCB)		20	20.5	ug/L	102	(76-124)	20	6.6
MBLK	m-Dichlorobenzene (1,3-DCB)			<0.25	ug/L				
MRL_CHK	m-Dichlorobenzene (1,3-DCB)		0.5	0.660	ug/L	132	(50-150)		
MS_201212120139	m-Dichlorobenzene (1,3-DCB)	ND	10	8.62	ug/L	86	(76-139)		
LCS1	Methyl Tert-butyl ether (MTBE)		20	17.2	ug/L	86	(70-130)		
LCS2	Methyl Tert-butyl ether (MTBE)		20	17.6	ug/L	88	(70-130)	20	2.3
MBLK	Methyl Tert-butyl ether (MTBE)			<0.25	ug/L				
MRL_CHK	Methyl Tert-butyl ether (MTBE)		0.5	0.530	ug/L	106	(50-150)		
MS_201212120139	Methyl Tert-butyl ether (MTBE)	ND	10	8.49	ug/L	85	(70-130)		
CS1	o-Dichlorobenzene (1,2-DCB)		20	21.1	ug/L	105	(79-118)		
LCS2	o-Dichlorobenzene (1,2-DCB)		20	20.1	ug/L	101	(79-118)	20	4.8
MBLK	o-Dichlorobenzene (1,2-DCB)			<0.25	ug/L				
MRL_CHK	o-Dichlorobenzene (1,2-DCB)		0.5	0.650	ug/L	130	(50-150)		
MS_201212120139	o-Dichlorobenzene (1,2-DCB)	ND	10	9.11	ug/L	91	(80-125)		
LCS1	o-Xylene		20	18.9	ug/L	95	(79-120)		
LCS2	o-Xylene		20	18.7	ug/L	93	(79-120)	20	1.1
MBLK	o-Xylene			<0.25	ug/L				
MRL_CHK	o-Xylene		0.5	0.520	ug/L	104	(50-150)		
MS_201212120139	o-Xylene	ND	10	7.81	ug/L	**78**	(91-123)		
LCS1	p-Dichlorobenzene (1,4-DCB)		20	21.8	ug/L	109	(74-130)		
LCS2	p-Dichlorobenzene (1,4-DCB)		20	20.6	ug/L	103	(74-130)	20	5.7
MBLK	p-Dichlorobenzene (1,4-DCB)			<0.25	ug/L				
MRL_CHK	p-Dichlorobenzene (1,4-DCB)		0.5	0.640	ug/L	128	(50-150)		
MS_201212120139	p-Dichlorobenzene (1,4-DCB)	ND	10	8.75	ug/L	88	(71-145)		
LCS1	Styrene		20	18.1	ug/L	91	(77-125)		
LCS2	Styrene		20	17.8	ug/L	89	(77-125)	20	1.7
MBLK	Styrene			<0.25	ug/L				
MRL_CHK	Styrene		0.5	0.470	ug/L	94	(50-150)		
MS_201212120139	Styrene	ND	10	0.450	ug/L	**4.5**	(66-142)		
LCS1	Tetrachloroethylene (PCE)		20	18.9	ug/L	94	(79-122)		
LCS2	Tetrachloroethylene (PCE)		20	18.5	ug/L	92	(79-122)	20	2.1
MBLK	Tetrachloroethylene (PCE)			<0.25	ug/L				

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QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MRL_CHK	Tetrachloroethylene (PCE)		0.5	0.540	ug/L	108	(50-150)		
MS_201212120139	Tetrachloroethylene (PCE)	ND	10	7.83	ug/L	78	(72-146)		
LCS1	Tetrahydrofuran		200	176	ug/L	88	(67-130)		
LCS2	Tetrahydrofuran		200	183	ug/L	92	(67-130)	20	3.9
MBLK	Tetrahydrofuran			<5.0	ug/L				
MRL_CHK	Tetrahydrofuran		5.0	5.04	ug/L	101	(50-150)		
MS_201212120139	Tetrahydrofuran	ND	100	93.7	ug/L	94	(68-134)		
LCS1	Toluene		20	19.4	ug/L	97	(80-118)		
LCS2	Toluene		20	18.8	ug/L	94	(80-118)	20	3.1
MBLK	Toluene			<0.25	ug/L				
MRL_CHK	Toluene		0.5	0.500	ug/L	100	(50-150)		
MS_201212120139	Toluene	ND	10	7.89	ug/L	79	(66-143)		
LCS1	Toluene-d8 (S)			97.2	%	97	(70-130)		
LCS2	Toluene-d8 (S)			98.6	%	99	(70-130)		
MBLK	Toluene-d8 (S)			97.8	%	98	(70-130)		
MRL_CHK	Toluene-d8 (S)			97.4	%	97	(70-130)		
MS_201212120139	Toluene-d8 (S)			97.2	%	97	(70-130)		
LCS1	trans-1,2-Dichloroethylene		20	17.1	ug/L	86	(82-122)		
LCS2	trans-1,2-Dichloroethylene		20	17.0	ug/L	85	(82-122)	20	0.59
MBLK	trans-1,2-Dichloroethylene			<0.25	ug/L				
MRL_CHK	trans-1,2-Dichloroethylene		0.5	0.430	ug/L	86	(50-150)		
MS_201212120139	trans-1,2-Dichloroethylene	ND	10	6.39	ug/L	**63**	(74-138)		
LCS1	trans-1,3-Dichloropropene		20	18.0	ug/L	90	(64-126)		
LCS2	trans-1,3-Dichloropropene		20	18.0	ug/L	90	(64-126)	20	0.0
MBLK	trans-1,3-Dichloropropene			<0.25	ug/L				
MRL_CHK	trans-1,3-Dichloropropene		0.5	0.510	ug/L	102	(50-150)		
MS_201212120139	trans-1,3-Dichloropropene	ND	10	7.57	ug/L	76	(61-127)		
LCS1	Trichloroethylene (TCE)		20	19.2	ug/L	96	(78-119)		
LCS2	Trichloroethylene (TCE)		20	19.2	ug/L	96	(78-119)	20	0.0
MBLK	Trichloroethylene (TCE)			<0.25	ug/L				
MRL_CHK	Trichloroethylene (TCE)		0.5	0.510	ug/L	102	(50-150)		
MS_201212120139	Trichloroethylene (TCE)	ND	10	7.94	ug/L	78	(71-139)		
LCS1	Trichlorofluoromethane		20	16.4	ug/L	82	(70-145)		
LCS2	Trichlorofluoromethane		20	16.3	ug/L	82	(70-145)	20	0.61
MBLK	Trichlorofluoromethane			<0.25	ug/L				
MRL_CHK	Trichlorofluoromethane		0.5	0.610	ug/L	122	(50-150)		
MS_201212120139	Trichlorofluoromethane	ND	10	8.40	ug/L	84	(63-161)		
LCS1	Vinyl Acetate		100	63.1	ug/L	**63**	(72-136)		

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QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
LCS2	Vinyl Acetate		100	64.4	ug/L	64	(72-136)	20	2.0
MBLK	Vinyl Acetate			<0.25	ug/L				
MRL_CHK	Vinyl Acetate		2.5	2.57	ug/L	103	(50-150)		
MS_201212120139	Vinyl Acetate	ND	50	37.0	ug/L	74	(55-146)		
LCS1	Vinyl chloride (VC)		20	15.7	ug/L	78	(66-140)		
LCS2	Vinyl chloride (VC)		20	15.3	ug/L	77	(66-140)	20	2.6
MBLK	Vinyl chloride (VC)			<0.25	ug/L				
MRL_CHK	Vinyl chloride (VC)		0.5	0.620	ug/L	124	(50-150)		
MS_201212120139	Vinyl chloride (VC)	ND	10	7.76	ug/L	78	(56-159)		
QC Ref# 685212 - Volatile Organics by GCMS by EPA 8260						**Analysis Date: 12/11/2012**			
LCS1	1,2-Dichloroethane-d4 (S)			96.2	%	96	(70-130)		
LCS2	1,2-Dichloroethane-d4 (S)			96.4	%	96	(70-130)		
MBLK	1,2-Dichloroethane-d4 (S)			97.8	%	98	(70-130)		
MRL_CHK	1,2-Dichloroethane-d4 (S)			97.4	%	97	(70-130)		
MS_201212140222	1,2-Dichloroethane-d4 (S)			99.2	%	99	(70-130)		
MSD_201212140222	1,2-Dichloroethane-d4 (S)			98.4	%	98	(70-130)		
LCS1	2-Chloroethylvinylether		5.0	5.18	ug/L	104	(70-130)		
LCS2	2-Chloroethylvinylether		5.0	5.10	ug/L	102	(70-130)	20	1.6
MBLK	2-Chloroethylvinylether			<0.5	ug/L				
MRL_CHK	2-Chloroethylvinylether		0.5	0.460	ug/L	92	(50-150)		
MS_201212140222	2-Chloroethylvinylether	ND	10	0	ug/L	0	(70-130)		
MSD_201212140222	2-Chloroethylvinylether	ND	10	0	ug/L	0	(70-130)	20	0
LCS1	4-Bromofluorobenzene (S)			97.2	%	97	(70-130)		
LCS2	4-Bromofluorobenzene (S)			95.6	%	96	(70-130)		
MBLK	4-Bromofluorobenzene (S)			104	%	104	(70-130)		
MRL_CHK	4-Bromofluorobenzene (S)			101	%	101	(70-130)		
MS_201212140222	4-Bromofluorobenzene (S)			108	%	108	(70-130)		
MSD_201212140222	4-Bromofluorobenzene (S)			104	%	104	(70-130)		
LCS1	Toluene-d8 (S)			99.2	%	99	(70-130)		
LCS2	Toluene-d8 (S)			96.6	%	97	(70-130)		
MBLK	Toluene-d8 (S)			98.4	%	98	(70-130)		
MRL_CHK	Toluene-d8 (S)			97.6	%	98	(70-130)		
MS_201212140222	Toluene-d8 (S)			99.4	%	99	(70-130)		
MSD_201212140222	Toluene-d8 (S)			98.8	%	99	(70-130)		
QC Ref# 685307 - Sulfonyl Urea Compounds by MWH/ LCMSMS						**Analysis Date: 12/04/2012**			
LCS1	Chlorotoluron		1.0	0.968	ug/L	97	(70-130)		
LCS2	Chlorotoluron		1.0	0.914	ug/L	91	(70-130)	30	5.7

Spike recovery is already corrected for native results.
Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.
Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.
RPD not calculated for LCS2 when different a concentration than LCS1 is used.
RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level).
(S) - Indicates surrogate compound.
(I) - Indicates internal standard compound.

eurofins | Eaton Analytical
formerly MWH Laboratories

750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
Tel: (626) 386-1100
Fax: (626) 386-1101
1 800 566 LABS (1 800 566 5227)

Laboratory QC
Report: 416854

City of Wichita Falls

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MBLK	Chlorotoluron			<0.05	ug/L				
MRL_CHK	Chlorotoluron		0.1	0.100	ug/L	100	(50-150)		
MS_201211290118	Chlorotoluron	ND	1.0	1.03	ug/L	101	(70-130)		
MSD_201211290118	Chlorotoluron	ND	1.0	1.03	ug/L	101	(70-130)	30	0.0
LCS1	Diuron		1.0	0.990	ug/L	99	(70-130)		
LCS2	Diuron		1.0	0.977	ug/L	98	(70-130)	30	1.3
MBLK	Diuron			<0.2	ug/L				
MRL_CHK	Diuron		0.1	0.124	ug/L	124	(50-150)		
MS_201211290118	Diuron	ND	1.0	1.18	ug/L	118	(70-130)		
MSD_201211290118	Diuron	ND	1.0	0.985	ug/L	99	(70-130)	30	18
LCS1	Isoproturon		1.0	0.962	ug/L	96	(70-130)		
LCS2	Isoproturon		1.0	0.986	ug/L	99	(70-130)	30	2.5
MBLK	Isoproturon			<0.05	ug/L				
MRL_CHK	Isoproturon		0.1	0.100	ug/L	101	(50-150)		
MS_201211290118	Isoproturon	ND	1.0	1.08	ug/L	108	(70-130)		
MSD_201211290118	Isoproturon	ND	1.0	1.07	ug/L	107	(70-130)	30	0.93
LCS1	Linuron		1.0	0.927	ug/L	93	(70-130)		
LCS2	Linuron		1.0	1.01	ug/L	101	(70-130)	30	8.6
MBLK	Linuron			<0.05	ug/L				
MRL_CHK	Linuron		0.1	0.108	ug/L	108	(50-150)		
MS_201211290118	Linuron	ND	1.0	1.10	ug/L	109	(70-130)		
MSD_201211290118	Linuron	ND	1.0	1.04	ug/L	104	(70-130)	30	5.6
LCS1	Metazachlor		1.0	1.02	ug/L	102	(70-130)		
LCS2	Metazachlor		1.0	0.988	ug/L	99	(70-130)	30	3.2
MBLK	Metazachlor			<0.05	ug/L				
MRL_CHK	Metazachlor		0.1	0.108	ug/L	108	(50-150)		
MS_201211290118	Metazachlor	ND	1.0	1.15	ug/L	115	(70-130)		
MSD_201211290118	Metazachlor	ND	1.0	1.15	ug/L	115	(70-130)	30	0.0
LCS1	Metoxuron		1.0	0.989	ug/L	99	(70-130)		
LCS2	Metoxuron		1.0	1.01	ug/L	101	(70-130)	30	2.1
MBLK	Metoxuron			<0.05	ug/L				
MRL_CHK	Metoxuron		0.1	0.0991	ug/L	99	(50-150)		
MS_201211290118	Metoxuron	ND	1.0	0.951	ug/L	95	(70-130)		
MSD_201211290118	Metoxuron	ND	1.0	0.958	ug/L	96	(70-130)	30	0.73
LCS1	Monuron			99.0	%	99	(70-130)		
LCS2	Monuron			99.7	%	100	(70-130)		
MBLK	Monuron			91.9	%				
MRL_CHK	Monuron			100	%	100	(70-130)		

Spike recovery is already corrected for native results.
Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.
Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.
RPD not calculated for LCS2 when different a concentration than LCS1 is used.
RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level).
(S) - Indicates surrogate compound.
(I) - Indicates internal standard compound.

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1 800 566 LABS (1 800 566 5227)

Laboratory QC
Report: 416854

City of Wichita Falls

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MS_201211290118	Monuron	100		102	%	102	(70-130)		
MSD_201211290118	Monuron	100		99.7	%	100	(70-130)		
LCS1	Propanil		1.0	1.06	ug/L	106	(70-130)		
LCS2	Propanil		1.0	1.09	ug/L	109	(70-130)	30	2.8
MBLK	Propanil			<0.05	ug/L				
MRL_CHK	Propanil		0.1	0.112	ug/L	112	(50-150)		
MS_201211290118	Propanil	ND	1.0	1.15	ug/L	115	(70-130)		
MSD_201211290118	Propanil	ND	1.0	1.14	ug/L	114	(70-130)	30	0.87
LCS1	Pyriproxyfen		1.0	1.04	ug/L	105	(70-130)		
LCS2	Pyriproxyfen		1.0	1.04	ug/L	104	(70-130)	30	0.96
MBLK	Pyriproxyfen			<0.05	ug/L				
MRL_CHK	Pyriproxyfen		0.1	0.0999	ug/L	100	(50-150)		
MS_201211290118	Pyriproxyfen	ND	1.0	1.09	ug/L	109	(70-130)		
MSD_201211290118	Pyriproxyfen	ND	1.0	1.13	ug/L	113	(70-130)	30	3.6
LCS1	Tebuthiuron		1.0	1.12	ug/L	112	(70-130)		
LCS2	Tebuthiuron		1.0	1.12	ug/L	112	(70-130)	30	0.0
MBLK	Tebuthiuron			<0.05	ug/L				
MRL_CHK	Tebuthiuron		0.1	0.113	ug/L	113	(50-150)		
MS_201211290118	Tebuthiuron	ND	1.0	0.878	ug/L	88	(70-130)		
MSD_201211290118	Tebuthiuron	ND	1.0	0.904	ug/L	90	(70-130)	30	2.9

Spike recovery is already corrected for native results.
Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.
Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.
RPD not calculated for LCS2 when different a concentration than LCS1 is used.
RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level).
(S) - Indicates surrogate compound.
(I) - Indicates internal standard compound.

908 North Temperance Ave. ∇ Clovis, CA 93611 ∇ Phone 559-275-2175 ∇ Fax 559-275-4422

Certification Number: CA1312
NELAP Certification number: 05233CA
Texas Certificate Number: T104704242-10-3

December 19, 2012

Eurofins Eaton Analytical
750 Royal Oaks Drive, Suite 100
Monrovia, California 91016

Attn: Jackie Contreras

Subject: Report of Data: Case 69410

Results in this report apply to the sample analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Dear Ms. Contreras,

One water sample for project " 416854" was received on November 30, 2012, in good condition. Written results are being provided on this December 19, 2012, for the requested analysis. All holding times were met.

For the EPA 508 analysis, the sample was extracted and analyzed according to the method. Five analytes recovered above the upper control limits in the lab control spike; these compounds were not detected in the sample. The PCB reporting limits were increased to 2.5ug/L due to matrix interference.

No other unusual problem or complication was encountered with this sample set.

If you have any questions or require further information, please contact us at your convenience. Thank you for choosing APPL, Inc.

I certify that this data package complies with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. These test results meet all requirements of NELAC. Release of the hard copy has been authorized by the Laboratory Manager or her designee, as verified by the following signature.

Sharon Dehmlow, Laboratory Director
APPL, Inc.

SD/cm
Enclosure
cc: File

Number of pages in this report: ____

EPA 508 Specialty OCL & PCBs

Eurofins Eaton Analytical
750 Royal Oaks Dr., Ste 100
Monrovia, CA 91016

Attn: Jackie Contreras
Project: 416854
Sample ID: 201211290119
Sample Collection Date: 11/28/12

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

ARF: 69410
APPL ID: AY72380
QCG: #508-121203A-173597

Method	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
EPA 508	2,4-DDD	Not detected	0.05	0.005	ug/L	12/03/12	12/12/12
EPA 508	2,4-DDE	Not detected	0.05	0.005	ug/L	12/03/12	12/12/12
EPA 508	2,4-DDT	Not detected	0.02	0.003	ug/L	12/03/12	12/12/12
EPA 508	4,4'-DDE	Not detected	0.01	0.002	ug/L	12/03/12	12/12/12
EPA 508	4,4'-DDT	Not detected	0.02	0.002	ug/L	12/03/12	12/12/12
EPA 508	4,4'-TDE/DDD	Not detected	0.02	0.002	ug/L	12/03/12	12/12/12
EPA 508	A-BHC	Not detected	0.05	0.003	ug/L	12/03/12	12/12/12
EPA 508	ALACHLOR	Not detected	0.10	0.006	ug/L	12/03/12	12/12/12
EPA 508	ALDRIN	Not detected	0.05	0.009	ug/L	12/03/12	12/12/12
EPA 508	B-BHC	Not detected	0.05	0.005	ug/L	12/03/12	12/12/12
EPA 508	BENEFIN	Not detected	0.10	0.008	ug/L	12/03/12	12/12/12
EPA 508	CAPTAN	Not detected	0.10	0.006	ug/L	12/03/12	12/12/12
EPA 508	CARBOPHENOTHION	Not detected	0.05	0.019	ug/L	12/03/12	12/12/12
EPA 508	CHLORDANE	Not detected	0.05	0.006	ug/L	12/03/12	12/12/12
EPA 508	CHLOROTHALONIL	Not detected	0.05	0.009	ug/L	12/03/12	12/12/12
EPA 508	D-BHC	Not detected	0.05	0.005	ug/L	12/03/12	12/12/12
EPA 508	DICOFOL	Not detected	0.10	0.011	ug/L	12/03/12	12/12/12
EPA 508	DIELDRIN	Not detected	0.02	0.004	ug/L	12/03/12	12/12/12
EPA 508	ENDOSULFAN I	Not detected	0.02	0.005	ug/L	12/03/12	12/12/12
EPA 508	ENDOSULFAN II	Not detected	0.01	0.007	ug/L	12/03/12	12/12/12
EPA 508	ENDOSULFAN SULFATE	Not detected	0.05	0.005	ug/L	12/03/12	12/12/12
EPA 508	ENDRIN	Not detected	0.05	0.004	ug/L	12/03/12	12/12/12
EPA 508	ENDRIN ALDEHYDE	Not detected	0.05	0.009	ug/L	12/03/12	12/12/12
EPA 508	ENDRIN KETONE	Not detected	0.05	0.006	ug/L	12/03/12	12/12/12
EPA 508	G-BHC (LINDANE)	Not detected	0.05	0.004	ug/L	12/03/12	12/12/12
EPA 508	HEPTACHLOR	Not detected	0.01	0.008	ug/L	12/03/12	12/12/12
EPA 508	HEPTACHLOR EPOXIDE	Not detected	0.01	0.004	ug/L	12/03/12	12/12/12
EPA 508	HEXACHLOROBENZENE	Not detected	0.05	0.012	ug/L	12/03/12	12/12/12
EPA 508	METHOXYCHLOR	Not detected	0.05	0.018	ug/L	12/03/12	12/12/12
EPA 508	NITROFEN	Not detected	0.05	0.017	ug/L	12/03/12	12/12/12
EPA 508	OXYFLUORFEN	Not detected	0.05	0.008	ug/L	12/03/12	12/12/12
EPA 508	PCB-1016	Not detected	2.50	0.183	ug/L	12/03/12	12/12/12
EPA 508	PCB-1221	Not detected	2.50	0.248	ug/L	12/03/12	12/12/12
EPA 508	PCB-1232	Not detected	2.50	0.189	ug/L	12/03/12	12/12/12
EPA 508	PCB-1242	Not detected	2.50	0.162	ug/L	12/03/12	12/12/12
EPA 508	PCB-1248	Not detected	2.50	0.142	ug/L	12/03/12	12/12/12
EPA 508	PCB-1254	Not detected	2.50	0.086	ug/L	12/03/12	12/12/12

Quant Method: OCL1206.M
Run #: 1206221
Instrument: Ethel
Sequence: 121206
Dilution Factor: 1
Initials: MA

Printed: 12/13/12 11:52:49 AM
APPL-F1-SC-NoMC-REG MDLs

EPA 508 Specialty OCL & PCBs

Eurofins Eaton Analytical
750 Royal Oaks Dr., Ste 100
Monrovia, CA 91016

Attn: Jackie Contreras

Project: 416854

Sample ID: 201211290119

Sample Collection Date: 11/28/12

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

ARF: 69410

APPL ID: AY72380

QCG: #508-121203A-173597

Method	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
EPA 508	PCB-1260	Not detected	2.50	0.119	ug/L	12/03/12	12/12/12
EPA 508	PCNB	Not detected	0.05	0.005	ug/L	12/03/12	12/12/12
EPA 508	PROPACHLOR	Not detected	0.10	0.009	ug/L	12/03/12	12/12/12
EPA 508	TOXAPHENE	Not detected	0.50	0.103	ug/L	12/03/12	12/12/12
EPA 508	SURROGATE: DECACHLOROBIPHEN	93.4	70-130		%	12/03/12	12/12/12

Quant Method: OCL1206.M
Run #: 1206221
Instrument: Ethel
Sequence: 121206
Dilution Factor: 1
Initials: MA

Printed: 12/13/12 11:52:50 AM
APPL-F1-SC-NoMC-REG MDLs

Method Blank

EPA 508 Specialty OCL & PCBs

Blank Name/QCG: **121203W-72379 - 173597**
Batch ID: #508-121203A

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Sample Type	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
BLANK	2,4-DDD	Not detected	0.05	0.005	ug/L	12/03/12	12/12/12
BLANK	2,4-DDE	Not detected	0.05	0.005	ug/L	12/03/12	12/12/12
BLANK	2,4-DDT	Not detected	0.02	0.003	ug/L	12/03/12	12/12/12
BLANK	4,4'-DDE	Not detected	0.01	0.002	ug/L	12/03/12	12/12/12
BLANK	4,4'-DDT	Not detected	0.02	0.002	ug/L	12/03/12	12/12/12
BLANK	4,4'-TDE/DDD	Not detected	0.02	0.002	ug/L	12/03/12	12/12/12
BLANK	A-BHC	Not detected	0.05	0.003	ug/L	12/03/12	12/12/12
BLANK	ALACHLOR	Not detected	0.10	0.006	ug/L	12/03/12	12/12/12
BLANK	ALDRIN	Not detected	0.05	0.009	ug/L	12/03/12	12/12/12
BLANK	B-BHC	Not detected	0.05	0.005	ug/L	12/03/12	12/12/12
BLANK	BENEFIN	Not detected	0.10	0.008	ug/L	12/03/12	12/12/12
BLANK	CAPTAN	Not detected	0.10	0.006	ug/L	12/03/12	12/12/12
BLANK	CARBOPHENOTHION	Not detected	0.05	0.019	ug/L	12/03/12	12/12/12
BLANK	CHLORDANE	Not detected	0.05	0.006	ug/L	12/03/12	12/12/12
BLANK	CHLOROTHALONIL	Not detected	0.05	0.009	ug/L	12/03/12	12/12/12
BLANK	D-BHC	Not detected	0.05	0.005	ug/L	12/03/12	12/12/12
BLANK	DICOFOL	Not detected	0.10	0.011	ug/L	12/03/12	12/12/12
BLANK	DIELDRIN	Not detected	0.02	0.004	ug/L	12/03/12	12/12/12
BLANK	ENDOSULFAN I	Not detected	0.02	0.005	ug/L	12/03/12	12/12/12
BLANK	ENDOSULFAN II	Not detected	0.01	0.007	ug/L	12/03/12	12/12/12
BLANK	ENDOSULFAN SULFATE	Not detected	0.05	0.005	ug/L	12/03/12	12/12/12
BLANK	ENDRIN	Not detected	0.05	0.004	ug/L	12/03/12	12/12/12
BLANK	ENDRIN ALDEHYDE	Not detected	0.05	0.009	ug/L	12/03/12	12/12/12
BLANK	ENDRIN KETONE	Not detected	0.05	0.006	ug/L	12/03/12	12/12/12
BLANK	G-BHC (LINDANE)	Not detected	0.05	0.004	ug/L	12/03/12	12/12/12
BLANK	HEPTACHLOR	Not detected	0.01	0.008	ug/L	12/03/12	12/12/12
BLANK	HEPTACHLOR EPOXIDE	Not detected	0.01	0.004	ug/L	12/03/12	12/12/12
BLANK	HEXACHLOROBENZENE	Not detected	0.05	0.012	ug/L	12/03/12	12/12/12
BLANK	METHOXYCHLOR	Not detected	0.05	0.018	ug/L	12/03/12	12/12/12
BLANK	NITROFEN	Not detected	0.05	0.017	ug/L	12/03/12	12/12/12
BLANK	OXYFLUORFEN	Not detected	0.05	0.008	ug/L	12/03/12	12/12/12
BLANK	PCB-1016	Not detected	0.50	0.183	ug/L	12/03/12	12/12/12
BLANK	PCB-1221	Not detected	0.50	0.248	ug/L	12/03/12	12/12/12
BLANK	PCB-1232	Not detected	0.50	0.189	ug/L	12/03/12	12/12/12

Quant Method: OCL1206.M
Run #: 1206215
Instrument: Ethel
Sequence: 121206
Initials: MA

GC SC-Blank-REG MDLs
Printed: 12/13/12 11:52:49 AM

Method Blank

EPA 508 Specialty OCL & PCBs

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **121203W-72379 - 173597**
Batch ID: #508-121203A

Sample Type	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
BLANK	PCB-1242	Not detected	0.50	0.162	ug/L	12/03/12	12/12/12
BLANK	PCB-1248	Not detected	0.50	0.142	ug/L	12/03/12	12/12/12
BLANK	PCB-1254	Not detected	0.50	0.086	ug/L	12/03/12	12/12/12
BLANK	PCB-1260	Not detected	0.50	0.119	ug/L	12/03/12	12/12/12
BLANK	PCNB	Not detected	0.05	0.005	ug/L	12/03/12	12/12/12
BLANK	PROPACHLOR	Not detected	0.10	0.009	ug/L	12/03/12	12/12/12
BLANK	TOXAPHENE	Not detected	0.50	0.103	ug/L	12/03/12	12/12/12
BLANK	SURROGATE: DECACHLOROBIPHEN	97.7	70-130		%	12/03/12	12/12/12

Quant Method: OCL1206.M
Run #: 1206215
Instrument: Ethel
Sequence: 121206
Initials: MA

GC SC-Blank-REG MDLs
Printed: 12/13/12 11:52:49 AM

Laboratory Control Spike Recovery

EPA 508 Specialty OCL & PCBs

APPL ID: **121203W-72379 LCS - 173597**
Batch ID: #508-121203A

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Level ug/L	SPK Result ug/L	SPK % Recovery	Recovery Limits
2,4-DDD	0.500	0.556	111	36-128
2,4-DDE	0.500	0.530	106	15-136
2,4-DDT	0.500	0.532	106	41-127
4,4'-DDE	0.300	0.242	80.7	69-129
4,4'-DDT	0.300	0.256	85.3	78-146
4,4'-TDE/DDD	0.300	0.255	85.0	75-139
A-BHC	0.300	0.258	86.0	64-120
ALACHLOR	0.500	0.622	124 #	51-120
ALDRIN	0.300	0.187	62.3	60-112
B-BHC	0.300	0.285	95.0	67-124
BENEFIN	0.500	0.573	115	17-121
CAPTAN	0.500	0.504	101	17-149
CARBOPHENOTHION	0.500	0.698	140 #	41-131
CHLORDANE	0.600	0.468	78.0	69-129
CHLOROTHALONIL	0.500	0.607	121 #	64-118
D-BHC	0.300	0.321	107 #	25-105
DICOFOL	0.500	0.284	56.8	13-140
DIELDRIN	0.300	0.253	84.3	61-113
ENDOSULFAN I	0.300	0.254	84.7	61-113
ENDOSULFAN II	0.300	0.262	87.3	64-120
ENDOSULFAN SULFATE	0.300	0.271	90.3	74-130
ENDRIN	0.300	0.193	64.3	62-114
ENDRIN ALDEHYDE	0.300	0.237	79.0	62-114
ENDRIN KETONE	0.300	0.270	90.0	55-135
G-BHC (LINDANE)	0.300	0.260	86.7	62-116
HEPTACHLOR	0.300	0.241	80.3	69-127
HEPTACHLOR EPOXIDE	0.300	0.252	84.0	61-113
HEXACHLOROBENZENE	0.500	0.370	74.0	69-129
METHOXYCHLOR	0.300	0.242	80.7	74-137
NITROFEN	0.500	0.532	106	45-131
OXYFLUORFEN	0.500	0.621	124	70-130

= Recovery is outside QC limits.

Comments: _____

Primary	SPK
Quant Method :	OCL1206.M
Extraction Date :	12/03/12
Analysis Date :	12/12/12
Instrument :	Ethel
Run :	1206222
Initials :	MA

Printed: 12/13/12 12:05:08 PM
APPL Standard LCS

Laboratory Control Spike Recovery
EPA 508 Specialty OCL & PCBs

APPL ID: **121203W-72379 LCS - 173597**
Batch ID: #508-121203A

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Level ug/L	SPK Result ug/L	SPK % Recovery	Recovery Limits
PCB-1016	1.00	1.37	137 #	39-107
PCB-1260	1.00	0.973	97.3	49-112
PCNB	0.500	0.519	104	29-123
PROPACHLOR	0.500	0.515	103	72-134
TOXAPHENE	1.00	0.972	97.2	47-124
SURROGATE: DECACHLOROBIPHENYL	0.750	0.638	85.1	70-130

= Recovery is outside QC limits.

Comments:

Primary	SPK
Quant Method :	OCL1206.M
Extraction Date :	12/03/12
Analysis Date :	12/12/12
Instrument :	Ethel
Run :	1206222
Initials :	MA

Printed: 12/13/12 12:05:08 PM
APPL Standard LCS

4.0°C

69410

Submittal Form & Purchase Order 99-19861

Date: 11/29/2012

eurofins | Eaton Analytical
formerly MWH Laboratories

Ship To:
908 N. Temperance
Appl, Inc.

Clovis, CA 93611

Phone: 559-275-2175 Fax: 559-275-4422

Folder #:	Report Due:	Sub PO #:
416854	12/14/2012	99-19861

REPORTING REQUIRMENTS:** ***Do Not Combine Reports with any other samples submitted under different Folder Numbers!
Report & Invoice must have the Folder # **416854** Sub PO# **99-19861** and Job # **1000014**

Report all quality control data according to Method. Include dates analyzed. Date extracted (if extracted) and Method reference on the report.
Results must have Complete data & QC with Approval Signature.

Reports: Jackie Contreras Sub-Contracting Administrator
EMAIL TO: us20_subcontract@eurofinsus.com
Eurofins Eaton Analytical 750 Royal Oaks Drive, Suite 100, Monrovia, CA 91016
Phone (626) 386-1165 Fax (626) 386-1122
Invoices to: Eurofins Eaton Analytical
Accounts Payable PO Box 12425, Lancaster, PA 17605

Provide in each Report the Specified State Certification # & Exp Date for requested tests + matrix.

Samples from: TEXAS

JLS	Use Lab Order # for ID	*Client Sample ID for reference only*	Analysis Requested	Sample Date & Time	Matrix	PWS Systemcode	PWSID
EPA 508	201211290119 @508EDD plus Oxyfluorphen	EFFLUENT	@508EDD plus Oxyfluorphen	11/28/12 1600	DW		

Relinquished by: M. DENISA Sample Control EEA Date 11-29-12 Time 1415

Received by: [signature] APPL Date 11-30-12 Time 1050

NOTIFICATION REQUIRED IF RECEIVED OUTSIDE OF 0-6 CELSIUS

An Acknowledgement of Receipt is requested to attn: Jackie Contreras

750 Royal Oaks Drive, Suite 100, Monrovia, CA 91016 Tel (626) 1100 Fax (626) 386-1101 http://www.EatonAnalytical.com

EAST BAY MUNICIPAL UTILITY DISTRICT
Laboratory Services Division
Phone (510)287-1432 Fax (510)465-5462
PO Box 24055, MS 59, Oakland, CA 94623

Analytical Report Prepared for JACLYN CONTRERAS

Report generated on: Dec 13, 2012 04:09 pm
Login No.: L179482

Reported by:

KENNETH GERSTMAN
Laboratory Program Manager

Approved by:

NIRMELA ARSEM
Laboratory Services Division Manager

LSR E024-0201-1
Project Title: Eurofins Eaton Analytical Projects

Login Performance Summary
1 - Sample received by the lab on: Nov 30 2012, 11:05 am
0 - Lost Analyses
0 - Hold Time Exceedences
Turn-around-time met

Samples included in this report:

Sample	Type	Collected	Site	Locator	ClientID
L179482-1	GRAB	28-Nov-2012 16:00	MISC	MISC	201211290119

Legend to the laboratory qualifiers used in this report:
N - Spike recovery outside of control limits
U - Analyte not detected
Qualifiers for subcontract work - See textvalue for description

EAST BAY MUNICIPAL UTILITY DISTRICT
Laboratory Services Division
PO Box 24055, MS 59, Oakland, CA 94623
Phone (510)287-1432 Fax (510)465-5462
Analytical Results Report

LSR E024-0201-1 Eurofins Eaton Analytical Projects
Site: MISC Miscellaneous - Unidentified Site
Locator: MISC Miscellaneous sample, see sample comments for location
ClientID: 201211290119
Lab ID: L179482-1 (P186219-1)
Sample Type: GRAB (Instantaneous Grab)
Date Collected: Nov 28 2012, 04:00pm Sample collector: Client/Eurofins
Date Received: Nov 30 2012, 11:05am Sample receiver: KLORENSO
Sample Comments: Folder # 416854, Sub PO# 99-19859, Job # 1000014, Eurofins Lab ID 201211290119, Client Sample ID: Effluent

Method Reference Parameter	Qualifier	Result	Units	Dilution	MDL	Matrix RL/ML	Tag
Method: SM(21)6710B - BUTYLTINS: GC/MS						WasteH2O	
TARGET ANALYTES							
TRIBUTYLTIN	U	0.0026	ug/L	1	0.0026	0.005	
INTERNAL STANDARD							
D10-PHENANTHRENE		101	% recovery		1		
SURROGATE							
TRIPENTYLTIN		47.2	% recovery		1		

Run ID: R236938 / Work Group No.: WG180696
Prep Date1: 04-DEC-12 Prep Date2: 06-DEC-12 Analyzed 07-Dec-12 22:21

RL is either the client requested or regulatory mandated Reporting Limit. ML is the regulatory mandated Minimum Level

EAST BAY MUNICIPAL UTILITY DISTRICT
Laboratory Services Division
PO Box 24055, MS 59, Oakland, CA 94623
Phone (510)287-1432 Fax (510)465-5462

ANALYTICAL QC SUMMARY REPORT FOR LOGIN L179482

LSR E024-0201-1 Eurofins Eaton Analytical Projects

Sample	Parameter	Sample Type	Qual	Result	Units	Control Limit	Measure Date
Method: SM(21)6710B - BUTYLTINS: GC/MS							
Batch QC Summary:							
WG180626-1	BLANK METH	Method Blank - not subtracted					
WG180626-2	LCS	Low Level Laboratory Control Sample					
WG180626-3	SPIKE BLNK	Spiked Blank (Method Spike)					
WG180696-1	CHK STND	Check Standard					
WG180696-2	CHK STND	Check Standard					
WG180696-3	CHK STND	Check Standard					
WG180696-4	CHK STND	Check Standard					
Run ID: R236938 / Work Group No.: WG180696							
Prep Date1: 04-DEC-12 Prep Date2: 06-DEC-12 Analyzed 07-DEC-12							
INTERNAL STANDARD							
WG180626-1	D10-PHENANTHRENE	BLANK METH		97.1	% recovery	70-130	07-dec-12 21:38
WG180696-1	D10-PHENANTHRENE	CHK STND		110	% recovery	70-130	07-dec-12 18:04
WG180696-2	D10-PHENANTHRENE	CHK STND		110	% recovery	70-130	07-dec-12 18:47
WG180696-3	D10-PHENANTHRENE	CHK STND		106	% recovery	70-130	07-dec-12 23:47
WG180696-4	D10-PHENANTHRENE	CHK STND		107	% recovery	70-130	08-dec-12 00:29
WG180626-2	D10-PHENANTHRENE	LCS		102	% recovery	70-130	07-dec-12 20:12
WG180626-3	D10-PHENANTHRENE	SPIKE BLNK		107	% recovery	70-130	07-dec-12 19:29
SURROGATE							
WG180626-1	TRIPENTYLTIN	BLANK METH		81.1	% recovery	32-122	07-dec-12 21:38
WG180696-1	TRIPENTYLTIN	CHK STND		107	% recovery	32-122	07-dec-12 18:04
WG180696-2	TRIPENTYLTIN	CHK STND		106	% recovery	32-122	07-dec-12 18:47
WG180696-3	TRIPENTYLTIN	CHK STND		108	% recovery	32-122	07-dec-12 23:47
WG180696-4	TRIPENTYLTIN	CHK STND		113	% recovery	32-122	08-dec-12 00:29
WG180626-2	TRIPENTYLTIN	LCS		79.3	% recovery	32-122	07-dec-12 20:12
WG180626-3	TRIPENTYLTIN	SPIKE BLNK		67.6	% recovery	32-122	07-dec-12 19:29
PIKE RECOVERY DATA PARAMETERS							
WG180696-1	TRIBUTYLTIN	CHK STND		96	% recovery	80-120	07-dec-12 18:04
WG180696-2	TRIBUTYLTIN	CHK STND		100	% recovery	80-120	07-dec-12 18:47
WG180696-3	TRIBUTYLTIN	CHK STND		100	% recovery	80-120	07-dec-12 23:47
WG180696-4	TRIBUTYLTIN	CHK STND		99	% recovery	80-120	08-dec-12 00:29
WG180626-2	TRIBUTYLTIN	LCS		86	% recovery	50-150	07-dec-12 20:12
WG180626-3	TRIBUTYLTIN	SPIKE BLNK	N	56	% recovery	70-130	07-dec-12 19:29
TARGET ANALYTES							
WG180626-1	TRIBUTYLTIN	BLANK METH	U	.0026	ug/L	-	07-dec-12 21:38
WG180696-1	TRIBUTYLTIN	CHK STND		.096	ug/L	-	07-dec-12 18:04
WG180696-2	TRIBUTYLTIN	CHK STND		.1	ug/L	-	07-dec-12 18:47
WG180696-3	TRIBUTYLTIN	CHK STND		.1	ug/L	-	07-dec-12 23:47
WG180696-4	TRIBUTYLTIN	CHK STND		.099	ug/L	-	08-dec-12 00:29
WG180626-2	TRIBUTYLTIN	LCS		.0086	ug/L	-	07-dec-12 20:12
WG180626-3	TRIBUTYLTIN	SPIKE BLNK		.056	ug/L	-	07-dec-12 19:29

For detailed information regarding subcontract data, a copy of the original subcontractor report is available upon request

ANALYTICAL RESULTS

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

Prepared for:

Eurofins Eaton Analytical, Inc
Suite 100
750 Royal Oaks Drive
Monrovia CA 91016

December 11, 2012

Project: 416854

Submittal Date: 12/01/2012
Group Number: 1353048
PO Number: 99-19854
State of Sample Origin: TX

Client Sample Description	Lancaster Labs (LLI) #
Lab ID# 201211290119 Groundwater	6879157

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO Eurofins Eaton Analytical, Inc Attn: Jaclyn Contreras

Respectfully Submitted,

Natalie R. Luciano
Specialist

(717) 556-7258

Sample Description: Lab ID# 201211290119 Groundwater
Folder# 416854 Sub PO# 99-19854 Job# 1000014

LLI Sample # PW 6879157
LLI Group # 1353048
Account # 14482

Project Name: 416854

Collected: 11/28/2012 16:00

Submitted: 12/01/2012 09:40
Reported: 12/11/2012 09:18

Eurofins Eaton Analytical, Inc
Suite 100
750 Royal Oaks Drive
Monrovia CA 91016

90119

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Dilution Factor
Pesticides	**SW-846 8141B**		ug/l	ug/l	ug/l	
10593	Demeton-O	298-03-3	< 1.9	1.9	0.47	1
10593	Demeton-S	126-75-0	< 2.8	2.8	1.1	1
10593	Diazinon	333-41-5	< 5.6	5.6	1.9	1
10593	Dursban (Chlorpyrifos)	2921-88-2	< 2.8	2.8	0.94	1

General Sample Comments

State of Texas Lab Certification No. T104704194-08A-TX

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10593	OP Pesticides in Water	SW-846 8141B	1	123390013A	12/07/2012 00:15	Jamie L Brillhart	1
11123	OP Pest Waters Update IV Ext	SW-846 3510C	1	123390013A	12/05/2012 10:00	William H Saadeh	1

*=This limit was used in the evaluation of the final result

Quality Control Summary

Client Name: Eurofins Eaton Analytical, Inc
Reported: 12/11/12 at 09:18 AM

Group Number: 1353048

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank LOQ**	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 123390013A	Sample number(s): 6879157								
Demeton-O	< 2.0	2.0	0.50	ug/l	55	60	29-78	9	20
Demeton-S	< 3.0	3.0	1.2	ug/l	59	103	23-144	55*	20
Diazinon	< 6.0	6.0	2.0	ug/l	26	101	19-132	120*	20
Dursban (Chlorpyrifos)	< 3.0	3.0	1.0	ug/l	103	103	62-136	0	20

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: OP Pesticides in Water
Batch number: 123390013A

	2-Nitro-m-xylene
6879157	96
Blank	95
LCS	98
LCSD	97
Limits:	45-141

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

eurofins | Eaton Analytical
formerly MWH Laboratories

Ship To:
2425 New Holland Pike
Eurofins Lancaster Laboratories

Lancaster, PA 17601

Phone: 717-656-2300 Fax:

Folder #:	Report Due:	Sub PO #:
416854	12/14/2012	99-19854

Submittal Form & Purchase Order 99-19854

Date: 11/29/2012

*REPORTING REQUIRMENTS: *Do Not Combine Reports with any other samples submitted under different Folder Numbers!*
Report & Invoice must have the Folder # 416854 Sub PO# 99-19854 and Job # 1000014

Report all quality control data according to Method. Include dates analyzed. Date extracted (if extracted) and Method reference on the report.
Results must have Complete data & QC with Approval Signature.

Reports: Jackie Contreras Sub-Contracting Administrator
EMAIL TO: us20_subcontract@eurofinsus.com
Eurofins Eaton Analytical 750 Royal Oaks Drive, Suite 100, Monrovia, CA 91016
Phone (626) 386-1165 Fax (626) 386-1122
Invoices to: Eurofins Eaton Analytical
Accounts Payable PO Box 12425, Lancaster, PA 17605

Provide in each Report the Specified State Certification # & Exp Date for requested tests + matrix.

Samples from: TEXAS

Acct # 14482 G-1353048 S-6879157

JLS	Use Lab Order # for ID	Client Sample ID for reference only	Analysis Requested	Sample Date & Time	Matrix	PWS Systemcode	PWSID
	201211290119	EFFLUENT		11/28/12 1600	DW		
EPA 8141	Demeton-O		Demeton-O by 8141				
EPA 8141	Demeton-S		Demeton-S by 8141				
EPA 8141	Chlorpyrifos		Chlorpyrifos by 8141				
EPA 8141	Diazinon		Diazinon by 8141				

Relinquished by: M. DERUSA Sample Control EEA Date 11-29-12 Time 1355

Received by: Pat [illegible] Date 12-1-12 Time 0940

NOTIFICATION REQUIRED IF RECEIVED OUTSIDE OF 0-6 CELSIUS

An Acknowledgement of Receipt is requested to attn: Jackie Contreras

750 Royal Oaks Drive, Suite 100, Monrovia, CA 91016 Tel (626) 386-1100 Fax (626) 386-1101 http://www.EatonAnalytical.com

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

J estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR part 136 Table II as "analyze immediately" are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL LANCASTER LABORATORIES BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF LANCASTER LABORATORIES AND (B) WHETHER LANCASTER LABORATORIES HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Lancaster Laboratories which includes any conditions that vary from the Standard Terms and Conditions, and Lancaster hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

LABORATORY REPORT

This report contains 5 pages.
(including the cover page)

If you have any questions concerning this report, please do not hesitate to call us at (800) 332-4345 or (574) 233-4777.

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UL LLC
110 S. Hill St., South Bend, IN 46617-2702 USA
T: 800.332.4345 / F: 574.233.8207 / W: UL.com

Laboratory Report

Client: City of Wichita Falls

Attn: Mark Southard
P. O. Box 1431
Wichita Falls, TX 76307

Report: 288995
Priority: Standard Written
Status: Final
PWS ID: TX2430001

Copies to: None

Sample Information

UL ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
2746034	Lake Wichita	1623	11/28/12 11:50	Client	11/29/12 09:15
2746035	Lake Arrowhead	1623	11/28/12 12:00	Client	11/29/12 09:15
2746036	1005 River Rd Pre Outfall	1623	11/28/12 14:20	Client	11/29/12 09:15

Report Summary

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call Jim Vernon at (574) 233-4777.

Note: This report may not be reproduced, except in full, without written approval from UL.

Jim Vernon P.M.

Digitally signed by james.n.vernon@ul.com
Date: 2012.12.13 07:42:29 -05'00'

Authorized Signature | Title | Date

Client Name: City of Wichita Falls
Report #: 288995

UL LLC
110 S. Hill St., South Bend, IN 46617-2702 USA
T: 800.332.4345 / F: 574.233.8207 / W: UL.com

Client Name: City of Wichita Falls Report #: 288995

Sampling Point: Lake Wichita PWS ID: TX2430001

Microbiology									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
—	Giardia	1623	—	0.091	< 0.091	cysts/L	—	11/30/12 09:05	2746034
—	Cryptosporidium	1623	—	0.091	< 0.091	oocysts/L	—	11/30/12 09:05	2746034

For method 1623: The calculated MRL value is dependant on the volume filtered and the volume analyzed for each sample.

Sampling Point: Lake Arrowhead PWS ID: TX2430001

Microbiology									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
—	Giardia	1623	—	0.091	< 0.091	cysts/L	—	11/30/12 09:05	2746035
—	Cryptosporidium	1623	—	0.091	< 0.091	oocysts/L	—	11/30/12 09:05	2746035

For method 1623: The calculated MRL value is dependant on the volume filtered and the volume analyzed for each sample.

Sampling Point: 1005 River Rd Pre Outfall PWS ID: TX2430001

Microbiology									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
—	Giardia	1623	—	0.150	**4.948**	cysts/L	—	11/30/12 09:05	2746036
—	Cryptosporidium	1623	—	0.150	< 0.150	oocysts/L	—	11/30/12 09:05	2746036

For method 1623: The calculated MRL value is dependant on the volume filtered and the volume analyzed for each sample.

† UL has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

Lab Definitions

Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis.

Internal Standards (IS) - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

Laboratory Duplicate (LD) - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

Laboratory Fortified Blank (LFB) / Laboratory Control Sample (LCS) - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control.

Laboratory Method Blank (LMB) / Laboratory Reagent Blank (LRB) - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

Laboratory Trip Blank (LTB) / Field Reagent Blank (FRB) - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD) - is a sample aliquot taken from the same field sample source as the Matrix Spike Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix.

Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM) - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results.

Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV) - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the calibration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

Surrogate Standard (SS) / Surrogate Analyte (SUR) - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.

LABORATORY REPORT

This report contains 13 pages.
(including the cover page)

If you have any questions concerning this report, please do not hesitate to call us at (800) 332-4345 or (574) 233-4777.

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UL LLC
110 S. Hill St., South Bend, IN 46617-2702 USA
T: 800.332.4345 / F: 574.233.8207 / W: UL.com

Laboratory Report

Client: City of Wichita Falls

Attn: Mark Southard
P. O. Box 1431
Wichita Falls, TX 76307

Report: 289002
Priority: Standard Written
Status: Final
PWS ID: TX2430001

Copies to: None

Sample Information

UL ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
2746064	Wastewater Effluent	552.2	11/28/12 16:00	Client	11/29/12 09:15
2746065	Wastewater Effluent	524.2	11/28/12 16:00	Client	11/29/12 09:15
2746066	Wastewater Effluent	505	11/28/12 16:00	Client	11/29/12 09:15
2746067	Wastewater Effluent	548.1	11/28/12 16:00	Client	11/29/12 09:15
2746068	Wastewater Effluent	504.1	11/28/12 16:00	Client	11/29/12 09:15
2746069	Wastewater Effluent	547	11/28/12 16:00	Client	11/29/12 09:15
2746070	Wastewater Effluent	531.1	11/28/12 16:00	Client	11/29/12 09:15
2746071	Wastewater Effluent	7110 B	11/28/12 16:00	Client	11/29/12 09:15
2746072	Wastewater Effluent	L221	11/28/12 16:00	Client	11/29/12 09:15
2746073	Wastewater Effluent	L220	11/28/12 16:00	Client	11/29/12 09:15
2746074	Wastewater Effluent	521	11/28/12 16:00	Client	11/29/12 09:15
2746075	Wastewater Effluent	L211	11/28/12 16:00	Client	11/29/12 09:15
2746076	Wastewater Effluent	1613	11/28/12 16:00	Client	11/29/12 09:15
2746077	Wastewater Effluent	525.2	11/28/12 16:00	Client	11/29/12 09:15
2746078	Wastewater Effluent	L200	11/28/12 16:00	Client	11/29/12 09:15
2746079	Wastewater Effluent	537	11/28/12 16:00	Client	11/29/12 09:15
2746080	Wastewater Effluent	245.1	11/28/12 16:00	Client	11/29/12 09:15
2746080	Wastewater Effluent	200.7	11/28/12 16:00	Client	11/29/12 09:15
2746081	Wastewater Effluent	515.3	11/28/12 16:00	Client	11/29/12 09:15
2746082	Wastewater Effluent	549.2	11/28/12 16:00	Client	11/29/12 09:15
2746083	Wastewater Effluent	331.0	11/28/12 16:00	Client	11/29/12 09:15
2746084	Wastewater Effluent	S170	11/28/12 16:00	Client	11/29/12 09:15

Report Summary

Project: Wastewater Reuse Testing

UL LLC
110 S. Hill St., South Bend, IN 46617-2702 USA
T: 800.332.4345 / F: 574.233.8207 / W: UL.com

Note: Dioxin analysis was performed by Pace Analytical Services, Inc., Minneapolis, MN.

Note: In the Method L220 analysis, nicotine was also present in the associated LMB at 0.008 ug/L, which is greater than the blank MRL check limit of 0.005 ug/L.

Note: The sample submitted for Method L221 analysis was received at a pH greater than 2, which is outside of method requirements. The sample pH was adjusted by laboratory personnel prior to analysis.

Note: In the Method L221 analysis, triclosan is not reportable in the sample submitted for analysis due to the presence of a large interference peak.

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call Jim Vernon at (574) 233-4777.

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Jim Vernon P.M.

Digitally signed by james.n.vernon@ul.com
Date: 2013.01.11 11:25:54 -05'00'

Authorized Signature Title Date

Client Name: City of Wichita Falls Report #: 289002

Sampling Point: Wastewater Effluent PWS ID: TX2430001

General Chemistry

Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
14797-73-0	Perchlorate	331.0	—	0.05	**0.21**	ug/L	—	11/30/12 03:11	2746083

Metals

Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
7439-89-6	Iron	200.7	0.3 ^	0.020	**0.096**	mg/L	12/03/12 11:15	12/05/12 20:49	2746080
7439-97-6	Mercury	245.1	2 *	0.1	< 0.1	ug/L	12/26/12 11:30	12/28/12 07:20	2746080

Radionuclides

Analyte ID #	Analyte	Method	Reg Limit	DL**	Result	Units	Preparation Date	Analyzed	UL ID #
—	Gross Alpha	7110 B	15 *	0.83	0.35 ± 0.48	pCi/L	12/13/12 08:20	12/19/12 17:06	2746071
—	Gross Beta	7110 B	—	1.3	**18.5 ± 1.4**	pCi/L	12/13/12 08:20	12/19/12 17:06	2746071

** Detection Limit (DL) shall be that concentration which can be counted with a precision of plus or minus 100% at the 95 % confidence level.

Disinfection Byproducts

Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
5589-96-8	Bromochloroacetic acid	552.2	—	1.0	**2.1**	ug/L	12/11/12 08:00	12/11/12 18:50	2746064
631-64-1	Dibromoacetic acid	552.2	—	1.0	**1.3**	ug/L	12/11/12 08:00	12/11/12 18:50	2746064
79-43-6	Dichloroacetic acid	552.2	—	1.0	**2.8**	ug/L	12/11/12 08:00	12/11/12 18:50	2746064
79-08-3	Monobromoacetic acid	552.2	—	1.0	< 1.0	ug/L	12/11/12 08:00	12/11/12 18:50	2746064
79-11-8	Monochloroacetic acid	552.2	—	2.0	< 2.0	ug/L	12/11/12 08:00	12/11/12 18:50	2746064
76-03-9	Trichloroacetic acid	552.2	—	1.0	**7.3**	ug/L	12/11/12 08:00	12/11/12 18:50	2746064
—	Total HAA5	552.2	60 *	2.0	**11.4**	ug/L	12/11/12 08:00	12/11/12 18:50	2746064

Semi-volatile Organic Chemicals

Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed	UL ID #
96-12-8	1,2-Dibromo-3-chloropropane (DBCP)	504.1	0.2 *	0.01	< 0.01	ug/L	12/05/12 11:00	12/05/12 19:38	2746068
106-93-4	1,2-Dibromoethane (EDB)	504.1	0.05 *	0.01	< 0.01	ug/L	12/05/12 11:00	12/05/12 19:38	2746068
12674-11-2	Aroclor 1016	505	—	0.08	< 0.08	ug/L	12/03/12 11:55	12/04/12 03:31	2746066
11104-28-2	Aroclor 1221	505	—	0.19	< 0.19	ug/L	12/03/12 11:55	12/04/12 03:31	2746066
11141-16-5	Aroclor 1232	505	—	0.23	< 0.23	ug/L	12/03/12 11:55	12/04/12 03:31	2746066
53469-21-9	Aroclor 1242	505	—	0.26	< 0.26	ug/L	12/03/12 11:55	12/04/12 03:31	2746066
12672-29-6	Aroclor 1248	505	—	0.1	< 0.1	ug/L	12/03/12 11:55	12/04/12 03:31	2746066
11097-69-1	Aroclor 1254	505	—	0.1	< 0.1	ug/L	12/03/12 11:55	12/04/12 03:31	2746066
11096-82-5	Aroclor 1260	505	—	0.2	< 0.2	ug/L	12/03/12 11:55	12/04/12 03:31	2746066
57-74-9	Chlordane	505	2 *	0.1	< 0.1	ug/L	12/03/12 11:55	12/04/12 03:31	2746066
8001-35-2	Toxaphene	505	3 *	1.0	< 1.0	ug/L	12/03/12 11:55	12/04/12 03:31	2746066
94-75-7	2,4-D	515.3	70 *	0.1	< 0.1	ug/L	12/06/12 08:20	12/07/12 05:19	2746081
75-99-0	Dalapon	515.3	200 *	1.0	< 1.0	ug/L	12/06/12 08:20	12/07/12 05:19	2746081
1918-00-9	Dicamba	515.3	—	0.1	< 0.1	ug/L	12/06/12 08:20	12/07/12 05:19	2746081

88-85-7	Dinoseb	515.3	7 *	0.1	< 0.1	ug/L	12/06/12 08:20	12/07/12 05:19	2746081
87-86-5	Pentachlorophenol	515.3	1 *	0.04	< 0.04	ug/L	12/06/12 08:20	12/07/12 05:19	2746081
1918-02-1	Picloram	515.3	500 *	0.1	< 0.1	ug/L	12/06/12 08:20	12/07/12 05:19	2746081
93-72-1	2,4,5-TP (Silvex)	515.3	50 *	0.1	< 0.1	ug/L	12/06/12 08:20	12/07/12 05:19	2746081
924-16-3	N-Nitrosodi-N-butylamine (NDBA)	521	—	4.0	< 4.0	ng/L	12/10/12 09:00	12/14/12 23:42	2746074
621-64-7	N-Nitrosodi-N-propylamine (NDPA)	521	—	7.0	< 7.0	ng/L	12/10/12 09:00	12/19/12 00:31	2746074
55-18-5	N-Nitrosodiethylamine (NDEA)	521	—	5.0	< 5.0	ng/L	12/10/12 09:00	12/14/12 23:42	2746074
62-75-9	N-Nitrosodimethylamine (NDMA)	521	—	2.0	18	ng/L	12/10/12 09:00	12/14/12 23:42	2746074
10595-95-6	N-Nitrosomethylethylamine (NMEA)	521	—	3.0	< 3.0	ng/L	12/10/12 09:00	12/14/12 23:42	2746074
100-75-4	N-Nitrosopiperidine (NPIP)	521	—	2.0	< 2.0	ng/L	12/10/12 09:00	12/14/12 23:42	2746074
930-55-2	N-Nitrosopyrrolidine (NPYR)	521	—	2.0	< 2.0	ng/L	12/10/12 09:00	12/19/12 00:31	2746074
15972-60-8	Alachlor	525.2	2 *	0.1	< 0.1	ug/L	12/04/12 08:15	12/06/12 08:58	2746077
309-00-2	Aldrin	525.2	—	0.1	< 0.1	ug/L	12/04/12 08:15	12/06/12 08:58	2746077
1912-24-9	Atrazine	525.2	3 *	0.1	< 0.1	ug/L	12/04/12 08:15	12/06/12 08:58	2746077
50-32-8	Benzo(a)pyrene	525.2	0.2 *	0.02	< 0.02	ug/L	12/04/12 08:15	12/06/12 08:58	2746077
58-89-9	gamma-BHC (Lindane)	525.2	0.2 *	0.02	< 0.02	ug/L	12/04/12 08:15	12/06/12 08:58	2746077
23184-66-9	Butachlor	525.2	—	0.1	< 0.1	ug/L	12/04/12 08:15	12/06/12 08:58	2746077
60-57-1	Dieldrin	525.2	—	0.1	< 0.1	ug/L	12/04/12 08:15	12/06/12 08:58	2746077
103-23-1	Di(2-ethylhexyl)adipate	525.2	400 *	0.6	< 0.6	ug/L	12/04/12 08:15	12/06/12 08:58	2746077
117-81-7	Di(2-ethylhexyl)phthalate	525.2	6 *	0.6	< 0.6	ug/L	12/04/12 08:15	12/06/12 08:58	2746077
72-20-8	Endrin	525.2	2 *	0.01	< 0.01	ug/L	12/04/12 08:15	12/06/12 08:58	2746077
76-44-8	Heptachlor	525.2	0.4 *	0.04	< 0.04	ug/L	12/04/12 08:15	12/06/12 08:58	2746077
1024-57-3	Heptachlor epoxide	525.2	0.2 *	0.02	< 0.02	ug/L	12/04/12 08:15	12/06/12 08:58	2746077
118-74-1	Hexachlorobenzene	525.2	1 *	0.1	< 0.1	ug/L	12/04/12 08:15	12/06/12 08:58	2746077
77-47-4	Hexachlorocyclopentadiene	525.2	50 *	0.1	< 0.1	ug/L	12/04/12 08:15	12/06/12 08:58	2746077
72-43-5	Methoxychlor	525.2	40 *	0.1	< 0.1	ug/L	12/04/12 08:15	12/06/12 08:58	2746077
51218-45-2	Metolachlor	525.2	—	0.1	< 0.1	ug/L	12/04/12 08:15	12/06/12 08:58	2746077
21087-64-9	Metribuzin	525.2	—	0.1	< 0.1	ug/L	12/04/12 08:15	12/06/12 08:58	2746077
1918-16-7	Propachlor	525.2	—	0.1	< 0.1	ug/L	12/04/12 08:15	12/06/12 08:58	2746077
122-34-9	Simazine	525.2	4 *	0.07	< 0.07	ug/L	12/04/12 08:15	12/06/12 08:58	2746077
116-06-3	Aldicarb	531.1	—	0.5	< 0.5	ug/L	12/03/12 10:00	12/04/12 07:04	2746070
1646-88-4	Aldicarb sulfone	531.1	—	0.7	< 0.7	ug/L	12/03/12 10:00	12/04/12 07:04	2746070
1646-87-3	Aldicarb sulfoxide	531.1	—	0.5	< 0.5	ug/L	12/03/12 10:00	12/04/12 07:04	2746070
63-25-2	Carbaryl	531.1	—	0.5	< 0.5	ug/L	12/03/12 10:00	12/04/12 07:04	2746070
1563-66-2	Carbofuran	531.1	40 *	0.9	< 0.9	ug/L	12/03/12 10:00	12/04/12 07:04	2746070
16655-82-6	3-Hydroxycarbofuran	531.1	—	0.5	< 0.5	ug/L	12/03/12 10:00	12/04/12 07:04	2746070
16752-77-5	Methomyl	531.1	—	0.5	< 0.5	ug/L	12/03/12 10:00	12/04/12 07:04	2746070
23135-22-0	Oxamyl	531.1	200 *	1.0	< 1.0	ug/L	12/03/12 10:00	12/04/12 07:04	2746070
1071-83-6	Glyphosate	547	700 *	6.0	< 6.0	ug/L	12/03/12 12:05	12/04/12 03:34	2746069
145-73-3	Endothall	548.1	100 *	9.0	< 9.0	ug/L	12/04/12 07:45	12/04/12 19:13	2746067
85-00-7	Diquat	549.2	20 *	0.4	< 0.4	ug/L	11/30/12 07:45	11/30/12 19:22	2746082

Any positive Aroclor result would require analysis for total PCB as decachlorobiphenyl by method 508A (MCL = 0.5 ug/L)

Volatile Organic Chemicals

Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
71-43-2	Benzene	524.2	5 *	0.5	< 0.5	ug/L	—	11/29/12 18:03	2746065
108-86-1	Bromobenzene	524.2	—	0.5	< 0.5	ug/L	—	11/29/12 18:03	2746065
74-97-5	Bromochloromethane	524.2	—	0.5	< 0.5	ug/L	—	11/29/12 18:03	2746065
75-27-4	Bromodichloromethane	524.2	—	0.5	12	ug/L	—	11/29/12 18:03	2746065

75-25-2	Bromoform	524.2	—	0.5	**10**	ug/L	—	11/29/12 18:03	2746065
74-83-9	Bromomethane	524.2	—	0.5	< 0.5	ug/L	—	11/29/12 18:03	2746065
104-51-8	n-Butylbenzene	524.2	—	0.5	< 0.5	ug/L	—	11/29/12 18:03	2746065
135-98-8	sec-Butylbenzene	524.2	—	0.5	< 0.5	ug/L	—	11/29/12 18:03	2746065
98-06-6	tert-Butylbenzene	524.2	—	0.5	< 0.5	ug/L	—	11/29/12 18:03	2746065
56-23-5	Carbon tetrachloride	524.2	5 *	0.5	< 0.5	ug/L	—	11/29/12 18:03	2746065
108-90-7	Chlorobenzene	524.2	100 *	0.5	< 0.5	ug/L	—	11/29/12 18:03	2746065
75-00-3	Chloroethane	524.2	—	0.5	< 0.5	ug/L	—	11/29/12 18:03	2746065
67-66-3	Chloroform	524.2	—	0.5	**5.7**	ug/L	—	11/29/12 18:03	2746065
74-87-3	Chloromethane	524.2	—	0.5	< 0.5	ug/L	—	11/29/12 18:03	2746065
95-49-8	2-Chlorotoluene	524.2	—	0.5	< 0.5	ug/L	—	11/29/12 18:03	2746065
106-43-4	4-Chlorotoluene	524.2	—	0.5	< 0.5	ug/L	—	11/29/12 18:03	2746065
124-48-1	Dibromochloromethane	524.2	—	0.5	**19**	ug/L	—	11/29/12 18:03	2746065
—	Total Trihalomethanes	524.2	80 *	0.5	**46.7**	ug/L	—	11/29/12 18:03	2746065
96-12-8	1,2-Dibromo-3-chloropropane (DBCP)	524.2	—	0.2	< 0.2	ug/L	—	11/29/12 18:03	2746065
106-93-4	1,2-Dibromoethane (EDB)	524.2	—	0.2	< 0.2	ug/L	—	11/29/12 18:03	2746065
74-95-3	Dibromomethane	524.2	—	0.5	< 0.5	ug/L	—	11/29/12 18:03	2746065
95-50-1	1,2-Dichlorobenzene	524.2	600 *	0.5	< 0.5	ug/L	—	11/29/12 18:03	2746065
541-73-1	1,3-Dichlorobenzene	524.2	—	0.5	< 0.5	ug/L	—	11/29/12 18:03	2746065
106-46-7	1,4-Dichlorobenzene	524.2	75 *	0.5	< 0.5	ug/L	—	11/29/12 18:03	2746065
75-71-8	Dichlorodifluoromethane	524.2	—	0.5	< 0.5	ug/L	—	11/29/12 18:03	2746065
75-34-3	1,1-Dichloroethane	524.2	—	0.5	< 0.5	ug/L	—	11/29/12 18:03	2746065
107-06-2	1,2-Dichloroethane	524.2	5 *	0.5	< 0.5	ug/L	—	11/29/12 18:03	2746065
75-35-4	1,1-Dichloroethylene	524.2	7 *	0.5	< 0.5	ug/L	—	11/29/12 18:03	2746065
156-59-2	cis-1,2-Dichloroethylene	524.2	70 *	0.5	< 0.5	ug/L	—	11/29/12 18:03	2746065
156-60-5	trans-1,2-Dichloroethylene	524.2	100 *	0.5	< 0.5	ug/L	—	11/29/12 18:03	2746065
75-09-2	Dichloromethane	524.2	5 *	0.5	< 0.5	ug/L	—	11/29/12 18:03	2746065
78-87-5	1,2-Dichloropropane	524.2	5 *	0.5	< 0.5	ug/L	—	11/29/12 18:03	2746065
142-28-9	1,3-Dichloropropane	524.2	—	0.5	< 0.5	ug/L	—	11/29/12 18:03	2746065
594-20-7	2,2-Dichloropropane	524.2	—	0.5	< 0.5	ug/L	—	11/29/12 18:03	2746065
563-58-6	1,1-Dichloropropylene	524.2	—	0.5	< 0.5	ug/L	—	11/29/12 18:03	2746065
10061-01-5	cis-1,3-Dichloropropylene	524.2	—	0.5	< 0.5	ug/L	—	11/29/12 18:03	2746065
10061-02-6	trans-1,3-Dichloropropylene	524.2	—	0.5	< 0.5	ug/L	—	11/29/12 18:03	2746065
542-75-6	1,3-Dichloropropylene, cis & trans	524.2	—	0.5	< 0.5	ug/L	—	11/29/12 18:03	2746065
100-41-4	Ethylbenzene	524.2	700 *	0.5	< 0.5	ug/L	—	11/29/12 18:03	2746065
87-68-3	Hexachlorobutadiene	524.2	—	0.5	< 0.5	ug/L	—	11/29/12 18:03	2746065
98-82-8	Isopropylbenzene	524.2	—	0.5	< 0.5	ug/L	—	11/29/12 18:03	2746065
99-87-6	4-Isopropyltoluene	524.2	—	0.5	< 0.5	ug/L	—	11/29/12 18:03	2746065
1634-04-4	Methyl-t-butyl ether (MTBE)	524.2	—	0.5	< 0.5	ug/L	—	11/29/12 18:03	2746065
91-20-3	Naphthalene	524.2	—	0.5	< 0.5	ug/L	—	11/29/12 18:03	2746065
103-65-1	n-Propylbenzene	524.2	—	0.5	< 0.5	ug/L	—	11/29/12 18:03	2746065
100-42-5	Styrene	524.2	100 *	0.5	< 0.5	ug/L	—	11/29/12 18:03	2746065
630-20-6	1,1,1,2-Tetrachloroethane	524.2	—	0.5	< 0.5	ug/L	—	11/29/12 18:03	2746065
79-34-5	1,1,2,2-Tetrachloroethane	524.2	—	0.5	< 0.5	ug/L	—	11/29/12 18:03	2746065
127-18-4	Tetrachloroethylene	524.2	5 *	0.5	< 0.5	ug/L	—	11/29/12 18:03	2746065
108-88-3	Toluene	524.2	1000 *	0.5	< 0.5	ug/L	—	11/29/12 18:03	2746065
87-61-6	1,2,3-Trichlorobenzene	524.2	—	0.5	< 0.5	ug/L	—	11/29/12 18:03	2746065
120-82-1	1,2,4-Trichlorobenzene	524.2	70 *	0.5	< 0.5	ug/L	—	11/29/12 18:03	2746065
71-55-6	1,1,1-Trichloroethane	524.2	200 *	0.5	< 0.5	ug/L	—	11/29/12 18:03	2746065
79-00-5	1,1,2-Trichloroethane	524.2	5 *	0.5	< 0.5	ug/L	—	11/29/12 18:03	2746065

79-01-6	Trichloroethylene	524.2	5 *	0.5	< 0.5	ug/L	—	11/29/12 18:03	2746065
75-69-4	Trichlorofluoromethane	524.2	—	0.5	< 0.5	ug/L	—	11/29/12 18:03	2746065
96-18-4	1,2,3-Trichloropropane	524.2	—	0.5	< 0.5	ug/L	—	11/29/12 18:03	2746065
95-63-6	1,2,4-Trimethylbenzene	524.2	—	0.5	< 0.5	ug/L	—	11/29/12 18:03	2746065
108-67-8	1,3,5-Trimethylbenzene	524.2	—	0.5	< 0.5	ug/L	—	11/29/12 18:03	2746065
75-01-4	Vinyl chloride	524.2	2 *	0.2	< 0.2	ug/L	—	11/29/12 18:03	2746065
95-47-6	1,2-Xylene	524.2	—	0.5	< 0.5	ug/L	—	11/29/12 18:03	2746065
179601-23-1	1,3 + 1,4-Xylene	524.2	—	0.5	< 0.5	ug/L	—	11/29/12 18:03	2746065
1330-20-7	Xylenes, Total	524.2	10000 *	0.5	< 0.5	ug/L	—	11/29/12 18:03	2746065

Compliance monitoring for 1,2-Dibromo-3-chloropropane (DBCP) must be done using EPA method 504.1.

Compliance monitoring for 1,2-Dibromoethane (EDB) must be done using EPA method 504.1.

UL Methods

Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
375-73-5	Perfluorobutanesulfonic acid (PFBS)	537	—	90.0	< 90.0	ng/L	12/06/12 07:05	12/11/12 01:43	2746079
375-85-9	Perfluoroheptanoic acid (PFHpA)	537	—	10.0	< 10.0	ng/L	12/06/12 07:05	12/11/12 01:43	2746079
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	537	—	30.0	< 30.0	ng/L	12/06/12 07:05	12/11/12 01:43	2746079
375-95-1	Perfluorononanoic acid (PFNA)	537	—	20.0	< 20.0	ng/L	12/06/12 07:05	12/11/12 01:43	2746079
1763-23-1	Perfluorooctane sulfonate (PFOS)	537	—	40.0	< 40.0	ng/L	12/06/12 07:05	12/11/12 01:43	2746079
335-67-1	Perfluorooctanoic acid (PFOA)	537	—	20	**21**	ng/L	12/06/12 07:05	12/11/12 01:43	2746079
80-05-7	Bisphenol A	L200	—	0.1	< 0.1	ug/L	12/03/12 07:45	12/04/12 18:39	2746078
25154-52-3	Nonylphenol, isomer mix	L200	—	0.5	< 0.5	ug/L	12/03/12 07:45	12/04/12 18:39	2746078
1806-26-4	4-n-Octylphenol	L200	—	0.5	< 0.5	ug/L	12/03/12 07:45	12/04/12 18:39	2746078
140-66-9	4-tert-Octylphenol	L200	—	0.5	< 0.5	ug/L	12/03/12 07:45	12/04/12 18:39	2746078
87-86-5	Pentachlorophenol	L200	—	0.1	< 0.1	ug/L	12/03/12 07:45	12/04/12 18:39	2746078
92-69-3	Phenylphenol	L200	—	0.1	< 0.1	ug/L	12/03/12 07:45	12/04/12 18:39	2746078
79-94-7	Tetrabromobisphenol A	L200	—	0.1	< 0.1	ug/L	12/03/12 07:45	12/04/12 18:39	2746078
88-06-2	2,4,6-Trichlorophenol	L200	—	0.1	**0.2**	ug/L	12/03/12 07:45	12/04/12 18:39	2746078
56-53-1	Diethylstilbestrol (DES)	L211	—	0.5	< 0.5	ng/L	12/07/12 07:43	12/07/12 21:53	2746075
57-91-0	17alpha-Estradiol	L211	—	0.5	< 0.5	ng/L	12/07/12 07:43	12/07/12 21:53	2746075
50-28-2	17beta-Estradiol	L211	—	0.5	< 0.5	ng/L	12/07/12 07:43	12/07/12 21:53	2746075
50-27-1	Estriol	L211	—	0.5	< 0.5	ng/L	12/07/12 07:43	12/07/12 21:53	2746075
53-16-7	Estrone	L211	—	0.5	**1.2**	ng/L	12/07/12 07:43	12/07/12 21:53	2746075
57-63-6	17alpha-Ethynyl estradiol	L211	—	0.5	< 0.5	ng/L	12/07/12 07:43	12/07/12 21:53	2746075
57-83-0	Progesterone	L211	—	0.1	**0.2**	ng/L	12/07/12 07:43	12/07/12 21:53	2746075
481-30-1	cis-Testosterone	L211	—	0.1	< 0.1	ng/L	12/07/12 07:43	12/07/12 21:53	2746075
58-22-0	trans-Testosterone	L211	—	0.1	**0.1**	ng/L	12/07/12 07:43	12/07/12 21:53	2746075
103-90-2	Acetaminophen	L220	—	0.005	**0.011**	ug/L	12/06/12 07:00	12/14/12 15:07	2746073
60-80-0	Antipyrine	L220	—	0.001	< 0.001	ug/L	12/06/12 07:00	12/14/12 15:07	2746073
29122-68-7	Atenolol	L220	—	0.001	< 0.001	ug/L	12/06/12 07:00	12/14/12 15:07	2746073
83905-01-5	Azithromycin	L220	—	0.005	**0.028**	ug/L	12/06/12 07:00	12/14/12 15:07	2746073
1405-87-4	Bacitracin	L220	—	1.0	< 1.0	ug/L	12/06/12 07:00	12/14/12 15:07	2746073
58-08-2	Caffeine	L220	—	0.05	< 0.05	ug/L	12/06/12 07:00	12/14/12 15:07	2746073
6804-07-5	Carbadox	L220	—	0.005	< 0.005	ug/L	12/06/12 07:00	12/14/12 15:07	2746073
298-46-4	Carbamazepine	L220	—	0.001	**0.282**	ug/L	12/06/12 07:00	12/17/12 10:38	2746073
85721-33-1	Ciprofloxacin	L220	—	0.05	< 0.05	ug/L	12/06/12 07:00	12/14/12 15:07	2746073
486-56-6	Cotinine	L220	—	0.001	< 0.001	ug/L	12/06/12 07:00	12/14/12 15:07	2746073
134-62-3	DEET	L220	—	0.005	**0.052**	ug/L	12/06/12 07:00	12/14/12 15:07	2746073
50-02-2	Dexamethasone	L220	—	0.005	< 0.005	ug/L	12/06/12 07:00	12/14/12 15:07	2746073
439-14-5	Diazepam	L220	—	0.001	**0.001**	ug/L	12/06/12 07:00	12/14/12 15:07	2746073

42399-41-7	Diltiazem	L220	—	0.0001	**0.0046**	ug/L	12/06/12 07:00	12/14/12 15:07	2746073
93106-60-6	Enrofloxacin	L220	—	0.05	< 0.05	ug/L	12/06/12 07:00	12/14/12 15:07	2746073
114-07-8	Erythromycin	L220	—	0.001	< 0.001	ug/L	12/06/12 07:00	12/14/12 15:07	2746073
59333-67-4	Fluoxetine (Prozac)	L220	—	0.001	**0.035**	ug/L	12/06/12 07:00	12/14/12 15:07	2746073
73334-07-3	Iopromide	L220	—	0.05	< 0.05	ug/L	12/06/12 07:00	12/14/12 15:07	2746073
11054-70-9	Lasalocid	L220	—	0.001	< 0.001	ug/L	12/06/12 07:00	12/14/12 15:07	2746073
154-21-2	Lincomycin	L220	—	0.0001	< 0.0001	ug/L	12/06/12 07:00	12/14/12 15:07	2746073
57-53-4	Meprobamate	L220	—	0.001	**0.479**	ug/L	12/06/12 07:00	12/17/12 10:38	2746073
17090-79-8	Monensin	L220	—	0.001	< 0.001	ug/L	12/06/12 07:00	12/14/12 15:07	2746073
55134-13-9	Narasin	L220	—	0.001	< 0.001	ug/L	12/06/12 07:00	12/14/12 15:07	2746073
22083-74-5	Nicotine	L220	—	0.005	**0.049**	ug/L	12/06/12 07:00	12/14/12 15:07	2746073
70458-96-7	Norfloxacin	L220	—	0.05	< 0.05	ug/L	12/06/12 07:00	12/14/12 15:07	2746073
7060-74-4	Oleandomycin	L220	—	0.001	< 0.001	ug/L	12/06/12 07:00	12/14/12 15:07	2746073
611-59-6	Paraxanthine	L220	—	0.005	< 0.005	ug/L	12/06/12 07:00	12/14/12 15:07	2746073
125-33-7	Primidone	L220	—	0.005	**0.864**	ug/L	12/06/12 07:00	12/17/12 10:38	2746073
80214-83-1	Roxithromycin	L220	—	0.001	< 0.001	ug/L	12/06/12 07:00	12/14/12 15:07	2746073
53003-10-4	Salinomycin	L220	—	0.0001	< 0.0001	ug/L	12/06/12 07:00	12/14/12 15:07	2746073
79902-63-9	Simvastatin	L220	—	0.005	< 0.005	ug/L	12/06/12 07:00	12/14/12 15:07	2746073
80-32-0	Sulfachloropyridazine	L220	—	0.005	< 0.005	ug/L	12/06/12 07:00	12/14/12 15:07	2746073
68-35-9	Sulfadiazine	L220	—	0.001	< 0.001	ug/L	12/06/12 07:00	12/14/12 15:07	2746073
122-11-2	Sulfadimethoxine	L220	—	0.0001	< 0.0001	ug/L	12/06/12 07:00	12/14/12 15:07	2746073
127-79-7	Sulfamerazine	L220	—	0.001	< 0.001	ug/L	12/06/12 07:00	12/14/12 15:07	2746073
57-68-1	Sulfamethazine	L220	—	0.001	< 0.001	ug/L	12/06/12 07:00	12/14/12 15:07	2746073
144-82-1	Sulfamethizole	L220	—	0.001	< 0.001	ug/L	12/06/12 07:00	12/14/12 15:07	2746073
723-46-6	Sulfamethoxazole	L220	—	0.001	**0.125**	ug/L	12/06/12 07:00	12/17/12 10:38	2746073
599-79-1	Sulfasalazine	L220	—	0.005	**0.042**	ug/L	12/06/12 07:00	12/14/12 15:07	2746073
72-14-0	Sulfathiazole	L220	—	0.001	< 0.001	ug/L	12/06/12 07:00	12/14/12 15:07	2746073
83-67-0	Theobromine	L220	—	0.05	**0.86**	ug/L	12/06/12 07:00	12/14/12 15:07	2746073
738-70-5	Trimethoprim	L220	—	0.001	**0.012**	ug/L	12/06/12 07:00	12/14/12 15:07	2746073
74610-55-2	Tylosin	L220	—	0.001	< 0.001	ug/L	12/06/12 07:00	12/14/12 15:07	2746073
21411-53-0	Virginiamycin M1	L220	—	0.001	< 0.001	ug/L	12/06/12 07:00	12/14/12 15:07	2746073
41859-67-0	Bezafibrate	L221	—	0.0005	**0.0006**	ug/L	12/03/12 07:55	12/05/12 03:19	2746072
56-75-7	Chloramphenicol	L221	—	0.005	< 0.049	ug/L	12/03/12 07:55	12/05/12 07:53	2746072
64-72-2	Chlorotetracycline	L221	—	0.05	< 0.05	ug/L	12/03/12 07:55	12/05/12 03:19	2746072
882-09-7	Clofibric acid	L221	—	0.0005	< 0.0005	ug/L	12/03/12 07:55	12/05/12 03:19	2746072
15307-86-5	Diclofenac	L221	—	0.0005	< 0.0049	ug/L	12/03/12 07:55	12/05/12 07:53	2746072
57-41-0	Dilantin	L221	—	0.002	**0.513**	ug/L	12/03/12 07:55	12/05/12 07:53	2746072
83038-87-3	Doxycycline	L221	—	0.05	< 0.05	ug/L	12/03/12 07:55	12/05/12 03:19	2746072
25812-30-0	Gemfibrozil	L221	—	0.0005	**0.0125**	ug/L	12/03/12 07:55	12/05/12 03:19	2746072
15687-27-1	Ibuprofen	L221	—	0.05	< 0.05	ug/L	12/03/12 07:55	12/05/12 03:19	2746072
51-48-9	Levothyroxine (Synthroid)	L221	—	0.002	< 0.002	ug/L	12/03/12 07:55	12/05/12 03:19	2746072
22204-53-1	Naproxen	L221	—	0.002	< 0.002	ug/L	12/03/12 07:55	12/05/12 03:19	2746072
2058-46-0	Oxytetracycline	L221	—	0.5	< 0.5	ug/L	12/03/12 07:55	12/05/12 03:19	2746072
61-33-6	Penicillin G	L221	—	0.002	< 0.020	ug/L	12/03/12 07:55	12/05/12 07:53	2746072
87-08-1	Penicillin V	L221	—	0.002	< 0.020	ug/L	12/03/12 07:55	12/05/12 07:53	2746072
53-03-2	Prednisone	L221	—	0.002	< 0.002	ug/L	12/03/12 07:55	12/05/12 03:19	2746072
69-72-7	Salicylic acid	L221	—	0.05	**0.10**	ug/L	12/03/12 07:55	12/05/12 03:19	2746072
60-54-8	Tetracycline	L221	—	0.5	< 0.5	ug/L	12/03/12 07:55	12/05/12 03:19	2746072
58-55-9	Theophylline	L221	—	0.005	**0.042**	ug/L	12/03/12 07:55	12/05/12 03:19	2746072
102-20-2	Triclocarban	L221	—	0.005	**0.070**	ug/L	12/03/12 07:55	12/05/12 03:19	2746072
1222-05-5	Galaxolide	S170	—	10	**750**	ng/L	12/04/12 12:30	12/05/12 15:03	2746084

21145-77-7	Tonalid	S170	—	10	**89**	ng/L	12/04/12 12:30	12/05/12 15:03	2746084

Reference Lab Tests

Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed	UL ID #
1746-01-6	Dioxin	1613	30 *	10	< 10	pg/L	—	12/05/12 22:25	2746076

† UL has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

Lab Definitions

Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis.

Internal Standards (IS) - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

Laboratory Duplicate (LD) - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

Laboratory Fortified Blank (LFB) / Laboratory Control Sample (LCS) - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control.

Laboratory Method Blank (LMB) / Laboratory Reagent Blank (LRB) - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

Laboratory Trip Blank (LTB) / Field Reagent Blank (FRB) - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD) - is a sample aliquot taken from the same field sample source as the Matrix Spike Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix.

Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM) - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results.

Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV) - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the calibration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

Surrogate Standard (SS) / Surrogate Analyte (SUR) - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.

LABORATORY REPORT

This report contains 5 pages.
(including the cover page)

If you have any questions concerning this report, please do not hesitate to call us at (800) 332-4345 or (574) 233-4777.

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UL LLC
110 S. Hill St., South Bend, IN 46617-2702 USA
T: 800.332.4345 / F: 574.233.8207 / W: UL.com

Laboratory Report

Client: City of Wichita Falls

Attn: Mark Southard
P. O. Box 1431
Wichita Falls, TX 76307

Report: 288117
Priority: Standard Written
Status: Final
PWS ID: TX2430001

Copies to: None

Sample Information

UL ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
2736515	1005 River Road CCB	1623	11/06/12 13:25	Client	11/07/12 09:30

Report Summary

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call Jim Vernon at (574) 233-4777.

Note: This report may not be reproduced, except in full, without written approval from UL.

Jim Vernon P.M.

Digitally signed by james.n.vernon@ul.com
Date: 2012.11.20 09:44:14 -05'00'

Authorized Signature | Title | Date

Client Name: City of Wichita Falls
Report #: 288117

UL LLC
110 S. Hill St., South Bend, IN 46617-2702 USA
T: 800.332.4345 / F: 574.233.8207 / W: UL.com

Client Name: City of Wichita Falls Report #: 288117

Sampling Point: 1005 River Road CCB PWS ID: TX2430001

Microbiology									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
—	Giardia	1623	—	0.100	**5.400**	cysts/L	—	11/09/12 09:10	2736515
—	Cryptosporidium	1623	—	0.100	**0.300**	oocysts/L	—	11/09/12 09:10	2736515

For method 1623: The calculated MRL value is dependant on the volume filtered and the volume analyzed for each sample.

† UL has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

Lab Definitions

Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis.

Internal Standards (IS) - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

Laboratory Duplicate (LD) - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

Laboratory Fortified Blank (LFB) / Laboratory Control Sample (LCS) - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control.

Laboratory Method Blank (LMB) / Laboratory Reagent Blank (LRB) - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

Laboratory Trip Blank (LTB) / Field Reagent Blank (FRB) - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD) - is a sample aliquot taken from the same field sample source as the Matrix Spike Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix.

Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM) - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results.

Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV) - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the calibration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

Surrogate Standard (SS) / Surrogate Analyte (SUR) - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.

LABORATORY REPORT

This report contains 13 pages.
(including the cover page)

If you have any questions concerning this report, please do not hesitate to call us at (800) 332-4345 or (574) 233-4777.

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UL LLC
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Laboratory Report

Client: City of Wichita Falls

Attn: Mark Southard
P. O. Box 1431
Wichita Falls, TX 76307

Report: 287857
Priority: Standard Written
Status: Final
PWS ID: TX2430001

Copies to: None

Sample Information

UL ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
2733863	WW Effluent (Composite)	531.1	10/30/12 11:50	Client	10/31/12 10:15
2733864	WW Effluent (Composite)	515.3	10/30/12 11:50	Client	10/31/12 10:15
2733865	WW Effluent (Composite)	1613	10/30/12 11:50	Client	10/31/12 10:15
2733866	WW Effluent (Composite)	549.2	10/30/12 11:50	Client	10/31/12 10:15
2733867	WW Effluent (Composite)	504.1	10/30/12 11:50	Client	10/31/12 10:15
2733868	WW Effluent (Composite)	L211	10/30/12 11:50	Client	10/31/12 10:15
2733869	WW Effluent (Composite)	S170	10/30/12 11:50	Client	10/31/12 10:15
2733870	WW Effluent (Composite)	547	10/30/12 11:50	Client	10/31/12 10:15
2733871	WW Effluent (Composite)	7110 B	10/30/12 11:50	Client	10/31/12 10:15
2733872	WW Effluent (Composite)	552.2	10/30/12 11:50	Client	10/31/12 10:15
2733873	WW Effluent (Composite)	245.1	10/30/12 11:50	Client	10/31/12 10:15
2733873	WW Effluent (Composite)	200.7	10/30/12 11:50	Client	10/31/12 10:15
2733874	WW Effluent (Composite)	521	10/30/12 11:50	Client	10/31/12 10:15
2733875	WW Effluent (Composite)	331.0	10/30/12 11:50	Client	10/31/12 10:15
2733876	WW Effluent (Composite)	L221	10/30/12 11:50	Client	10/31/12 10:15
2733877	WW Effluent (Composite)	L220	10/30/12 11:50	Client	10/31/12 10:15
2733878	WW Effluent (Composite)	524.2	10/30/12 11:50	Client	10/31/12 10:15
2733879	WW Effluent (Composite)	525.2	10/30/12 11:50	Client	10/31/12 10:15
2733880	WW Effluent (Composite)	505	10/30/12 11:50	Client	10/31/12 10:15
2733881	WW Effluent (Composite)	L200	10/30/12 11:50	Client	10/31/12 10:15
2733882	WW Effluent (Composite)	537	10/30/12 11:50	Client	10/31/12 10:15
2733883	WW Effluent (Composite)	548.1	10/30/12 11:50	Client	10/31/12 10:15

Report Summary

Note: Dioxin analysis was performed by Pace Analytical Services, Inc., Minneapolis, MN.

Note: In the Method L220 analysis, the sulfamethazine recovery in the LFB at 0.02 ug/L (62%) was low outside the acceptance limits of 63-122%. Any result is potentially low biased.

Note: In the Method L221 analysis, triclosan is not reportable in the sample submitted for analysis due to the presence of a large interference peak.

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Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call Jim Vernon at (574) 233-4777.

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Jim Vernon P.M.

Digitally signed by
james.n.vernon@ul.com
Date: 2012.12.13 13:35:24 -05'00'

Authorized Signature | Title | Date

Client Name: City of Wichita Falls Report #: 287857

Sampling Point: WW Effluent (Composite) PWS ID: TX2430001

General Chemistry

Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
14797-73-0	Perchlorate	331.0	—	0.05	< 0.50	ug/L	—	11/17/12 03:55	2733875

Metals

Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
7439-89-6	Iron	200.7	0.3 ^	0.020	**0.11**	mg/L	—	11/16/12 13:46	2733873
7439-97-6	Mercury	245.1	2 *	0.1	< 0.1	ug/L	11/08/12 09:15	11/09/12 09:02	2733873

Radionuclides

Analyte ID #	Analyte	Method	Reg Limit	DL**	Result	Units	Preparation Date	Analyzed	UL ID #
—	Gross Alpha	7110 B	15 *	0.90	-0.06 ± 0.49	pCi/L	11/05/12 09:15	11/08/12 10:10	2733871
—	Gross Beta	7110 B	—	1.1	**13.8 ± 1.2**	pCi/L	11/05/12 09:15	11/08/12 10:10	2733871

** Detection Limit (DL) shall be that concentration which can be counted with a precision of plus or minus 100% at the 95 % confidence level.

Disinfection Byproducts

Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
5589-96-8	Bromochloroacetic acid	552.2	—	1.0	**13**	ug/L	11/05/12 08:05	11/07/12 10:31	2733872
631-64-1	Dibromoacetic acid	552.2	—	1.0	**12**	ug/L	11/05/12 08:05	11/07/12 10:31	2733872
79-43-6	Dichloroacetic acid	552.2	—	1.0	**11**	ug/L	11/05/12 08:05	11/07/12 10:31	2733872
79-08-3	Monobromoacetic acid	552.2	—	1.0	**3.0**	ug/L	11/05/12 08:05	11/07/12 10:31	2733872
79-11-8	Monochloroacetic acid	552.2	—	2.0	**2.8**	ug/L	11/05/12 08:05	11/07/12 10:31	2733872
76-03-9	Trichloroacetic acid	552.2	—	1.0	**9.6**	ug/L	11/05/12 08:05	11/07/12 10:31	2733872
—	Total HAA5	552.2	60 *	2.0	**38.4**	ug/L	11/05/12 08:05	11/07/12 10:31	2733872

Semi-volatile Organic Chemicals

Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed	UL ID #
96-12-8	1,2-Dibromo-3-chloropropane (DBCP)	504.1	0.2 *	0.01	< 0.01	ug/L	11/05/12 11:40	11/05/12 23:18	2733867
106-93-4	1,2-Dibromoethane (EDB)	504.1	0.05 *	0.01	< 0.01	ug/L	11/05/12 11:40	11/05/12 23:18	2733867
12674-11-2	Aroclor 1016	505	—	0.08	< 0.08	ug/L	11/08/12 13:45	11/09/12 01:10	2733880
11104-28-2	Aroclor 1221	505	—	0.19	< 0.19	ug/L	11/08/12 13:45	11/09/12 01:10	2733880
11141-16-5	Aroclor 1232	505	—	0.23	< 0.23	ug/L	11/08/12 13:45	11/09/12 01:10	2733880
53469-21-9	Aroclor 1242	505	—	0.26	< 0.26	ug/L	11/08/12 13:45	11/09/12 01:10	2733880
12672-29-6	Aroclor 1248	505	—	0.1	< 0.1	ug/L	11/08/12 13:45	11/09/12 01:10	2733880
11097-69-1	Aroclor 1254	505	—	0.1	< 0.1	ug/L	11/08/12 13:45	11/09/12 01:10	2733880
11096-82-5	Aroclor 1260	505	—	0.2	< 0.2	ug/L	11/08/12 13:45	11/09/12 01:10	2733880
57-74-9	Chlordane	505	2 *	0.1	< 0.1	ug/L	11/08/12 13:45	11/09/12 01:10	2733880
8001-35-2	Toxaphene	505	3 *	1.0	< 1.0	ug/L	11/08/12 13:45	11/09/12 01:10	2733880
94-75-7	2,4-D	515.3	70 *	0.1	< 0.1	ug/L	11/02/12 09:15	11/03/12 16:28	2733864
75-99-0	Dalapon	515.3	200 *	1.0	< 1.0	ug/L	11/02/12 09:15	11/03/12 16:28	2733864
1918-00-9	Dicamba	515.3	—	0.1	< 0.1	ug/L	11/02/12 09:15	11/03/12 16:28	2733864

88-85-7	Dinoseb	515.3	7 *	0.1	< 0.1	ug/L	11/02/12 09:15	11/03/12 16:28	2733864
87-86-5	Pentachlorophenol	515.3	1 *	0.04	< 0.04	ug/L	11/02/12 09:15	11/03/12 16:28	2733864
1918-02-1	Picloram	515.3	500 *	0.1	< 0.1	ug/L	11/02/12 09:15	11/03/12 16:28	2733864
93-72-1	2,4,5-TP (Silvex)	515.3	50 *	0.1	< 0.1	ug/L	11/02/12 09:15	11/03/12 16:28	2733864
930-55-2	N-Nitrosopyrrolidine (NPYR)	521	—	2.0	< 2.0	ng/L	11/06/12 09:00	11/12/12 14:48	2733874
924-16-3	N-Nitrosodi-N-butylamine (NDBA)	521	—	4.0	< 4.0	ng/L	11/06/12 09:00	11/12/12 14:48	2733874
55-18-5	N-Nitrosodiethylamine (NDEA)	521	—	5.0	< 5.0	ng/L	11/06/12 09:00	11/12/12 14:48	2733874
62-75-9	N-Nitrosodimethylamine (NDMA)	521	—	2.0	< 2.0	ng/L	11/06/12 09:00	11/12/12 14:48	2733874
621-64-7	N-Nitrosodi-N-propylamine (NDPA)	521	—	7.0	< 7.0	ng/L	11/06/12 09:00	11/12/12 14:48	2733874
10595-95-6	N-Nitrosomethylethylamine (NMEA)	521	—	3.0	< 3.0	ng/L	11/06/12 09:00	11/12/12 14:48	2733874
100-75-4	N-Nitrosopiperidine (NPIP)	521	—	2.0	< 2.0	ng/L	11/06/12 09:00	11/12/12 14:48	2733874
15972-60-8	Alachlor	525.2	2 *	0.1	< 0.1	ug/L	11/02/12 07:45	11/06/12 12:42	2733879
309-00-2	Aldrin	525.2	—	0.1	< 0.1	ug/L	11/02/12 07:45	11/06/12 12:42	2733879
1912-24-9	Atrazine	525.2	3 *	0.1	< 0.1	ug/L	11/02/12 07:45	11/06/12 12:42	2733879
50-32-8	Benzo(a)pyrene	525.2	0.2 *	0.02	< 0.02	ug/L	11/02/12 07:45	11/06/12 12:42	2733879
58-89-9	gamma-BHC (Lindane)	525.2	0.2 *	0.02	< 0.02	ug/L	11/02/12 07:45	11/06/12 12:42	2733879
23184-66-9	Butachlor	525.2	—	0.1	< 0.1	ug/L	11/02/12 07:45	11/06/12 12:42	2733879
60-57-1	Dieldrin	525.2	—	0.1	< 0.1	ug/L	11/02/12 07:45	11/06/12 12:42	2733879
103-23-1	Di(2-ethylhexyl)adipate	525.2	400 *	0.6	< 0.6	ug/L	11/02/12 07:45	11/06/12 12:42	2733879
117-81-7	Di(2-ethylhexyl)phthalate	525.2	6 *	0.6	< 0.6	ug/L	11/02/12 07:45	11/06/12 12:42	2733879
72-20-8	Endrin	525.2	2 *	0.01	< 0.01	ug/L	11/02/12 07:45	11/06/12 12:42	2733879
76-44-8	Heptachlor	525.2	0.4 *	0.04	< 0.04	ug/L	11/02/12 07:45	11/06/12 12:42	2733879
1024-57-3	Heptachlor epoxide	525.2	0.2 *	0.02	< 0.02	ug/L	11/02/12 07:45	11/06/12 12:42	2733879
118-74-1	Hexachlorobenzene	525.2	1 *	0.1	< 0.1	ug/L	11/02/12 07:45	11/06/12 12:42	2733879
77-47-4	Hexachlorocyclopentadiene	525.2	50 *	0.1	< 0.1	ug/L	11/02/12 07:45	11/06/12 12:42	2733879
72-43-5	Methoxychlor	525.2	40 *	0.1	< 0.1	ug/L	11/02/12 07:45	11/06/12 12:42	2733879
51218-45-2	Metolachlor	525.2	—	0.1	< 0.1	ug/L	11/02/12 07:45	11/06/12 12:42	2733879
21087-64-9	Metribuzin	525.2	—	0.1	< 0.1	ug/L	11/02/12 07:45	11/06/12 12:42	2733879
1918-16-7	Propachlor	525.2	—	0.1	< 0.1	ug/L	11/02/12 07:45	11/06/12 12:42	2733879
122-34-9	Simazine	525.2	4 *	0.07	< 0.07	ug/L	11/02/12 07:45	11/06/12 12:42	2733879
116-06-3	Aldicarb	531.1	—	0.5	< 0.5	ug/L	11/05/12 09:15	11/06/12 00:05	2733863
1646-88-4	Aldicarb sulfone	531.1	—	0.7	< 0.7	ug/L	11/05/12 09:15	11/06/12 00:05	2733863
1646-87-3	Aldicarb sulfoxide	531.1	—	0.5	< 0.5	ug/L	11/05/12 09:15	11/06/12 00:05	2733863
63-25-2	Carbaryl	531.1	—	0.5	< 0.5	ug/L	11/05/12 09:15	11/06/12 00:05	2733863
1563-66-2	Carbofuran	531.1	40 *	0.9	< 0.9	ug/L	11/05/12 09:15	11/06/12 00:05	2733863
16655-82-6	3-Hydroxycarbofuran	531.1	—	0.5	< 0.5	ug/L	11/05/12 09:15	11/06/12 00:05	2733863
16752-77-5	Methomyl	531.1	—	0.5	< 0.5	ug/L	11/05/12 09:15	11/06/12 00:05	2733863
23135-22-0	Oxamyl	531.1	200 *	1.0	< 1.0	ug/L	11/05/12 09:15	11/06/12 00:05	2733863
1071-83-6	Glyphosate	547	700 *	6.0	< 6.0	ug/L	11/05/12 09:15	11/06/12 00:32	2733870
145-73-3	Endothall	548.1	100 *	9.0	< 9.0	ug/L	11/02/12 07:45	11/08/12 21:21	2733883
85-00-7	Diquat	549.2	20 *	0.4	< 0.4	ug/L	11/02/12 08:10	11/02/12 18:58	2733866

Any positive Aroclor result would require analysis for total PCB as decachlorobiphenyl by method 508A (MCL = 0.5 ug/L)

Volatile Organic Chemicals

Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
71-43-2	Benzene	524.2	5 *	0.5	< 0.5	ug/L	—	11/01/12 15:25	2733878
108-86-1	Bromobenzene	524.2	—	0.5	< 0.5	ug/L	—	11/01/12 15:25	2733878
74-97-5	Bromochloromethane	524.2	—	0.5	< 0.5	ug/L	—	11/01/12 15:25	2733878
75-27-4	Bromodichloromethane	524.2	—	0.5	27	ug/L	—	11/01/12 15:25	2733878

75-25-2	Bromoform	524.2	—	0.5	**18**	ug/L	—	11/01/12 15:25	2733878
74-83-9	Bromomethane	524.2	—	0.5	< 0.5	ug/L	—	11/01/12 15:25	2733878
104-51-8	n-Butylbenzene	524.2	—	0.5	< 0.5	ug/L	—	11/01/12 15:25	2733878
135-98-8	sec-Butylbenzene	524.2	—	0.5	< 0.5	ug/L	—	11/01/12 15:25	2733878
98-06-6	tert-Butylbenzene	524.2	—	0.5	< 0.5	ug/L	—	11/01/12 15:25	2733878
56-23-5	Carbon tetrachloride	524.2	5 *	0.5	< 0.5	ug/L	—	11/01/12 15:25	2733878
108-90-7	Chlorobenzene	524.2	100 *	0.5	< 0.5	ug/L	—	11/01/12 15:25	2733878
75-00-3	Chloroethane	524.2	—	0.5	< 0.5	ug/L	—	11/01/12 15:25	2733878
67-66-3	Chloroform	524.2	—	0.5	**8.1**	ug/L	—	11/01/12 15:25	2733878
74-87-3	Chloromethane	524.2	—	0.5	< 0.5	ug/L	—	11/01/12 15:25	2733878
95-49-8	2-Chlorotoluene	524.2	—	0.5	< 0.5	ug/L	—	11/01/12 15:25	2733878
106-43-4	4-Chlorotoluene	524.2	—	0.5	< 0.5	ug/L	—	11/01/12 15:25	2733878
124-48-1	Dibromochloromethane	524.2	—	0.5	**40**	ug/L	—	11/01/12 15:25	2733878
—	Total Trihalomethanes	524.2	80 *	0.5	**93.1**	ug/L	—	11/01/12 15:25	2733878
96-12-8	1,2-Dibromo-3-chloropropane (DBCP)	524.2	—	0.2	< 0.2	ug/L	—	11/01/12 15:25	2733878
106-93-4	1,2-Dibromoethane (EDB)	524.2	—	0.2	< 0.2	ug/L	—	11/01/12 15:25	2733878
74-95-3	Dibromomethane	524.2	—	0.5	< 0.5	ug/L	—	11/01/12 15:25	2733878
95-50-1	1,2-Dichlorobenzene	524.2	600 *	0.5	< 0.5	ug/L	—	11/01/12 15:25	2733878
541-73-1	1,3-Dichlorobenzene	524.2	—	0.5	< 0.5	ug/L	—	11/01/12 15:25	2733878
106-46-7	1,4-Dichlorobenzene	524.2	75 *	0.5	< 0.5	ug/L	—	11/01/12 15:25	2733878
75-71-8	Dichlorodifluoromethane	524.2	—	0.5	< 0.5	ug/L	—	11/01/12 15:25	2733878
75-34-3	1,1-Dichloroethane	524.2	—	0.5	< 0.5	ug/L	—	11/01/12 15:25	2733878
107-06-2	1,2-Dichloroethane	524.2	5 *	0.5	< 0.5	ug/L	—	11/01/12 15:25	2733878
75-35-4	1,1-Dichloroethylene	524.2	7 *	0.5	< 0.5	ug/L	—	11/01/12 15:25	2733878
156-59-2	cis-1,2-Dichloroethylene	524.2	70 *	0.5	< 0.5	ug/L	—	11/01/12 15:25	2733878
156-60-5	trans-1,2-Dichloroethylene	524.2	100 *	0.5	< 0.5	ug/L	—	11/01/12 15:25	2733878
75-09-2	Dichloromethane	524.2	5 *	0.5	< 0.5	ug/L	—	11/01/12 15:25	2733878
78-87-5	1,2-Dichloropropane	524.2	5 *	0.5	< 0.5	ug/L	—	11/01/12 15:25	2733878
142-28-9	1,3-Dichloropropane	524.2	—	0.5	< 0.5	ug/L	—	11/01/12 15:25	2733878
594-20-7	2,2-Dichloropropane	524.2	—	0.5	< 0.5	ug/L	—	11/01/12 15:25	2733878
563-58-6	1,1-Dichloropropylene	524.2	—	0.5	< 0.5	ug/L	—	11/01/12 15:25	2733878
10061-01-5	cis-1,3-Dichloropropylene	524.2	—	0.5	< 0.5	ug/L	—	11/01/12 15:25	2733878
10061-02-6	trans-1,3-Dichloropropylene	524.2	—	0.5	< 0.5	ug/L	—	11/01/12 15:25	2733878
542-75-6	1,3-Dichloropropylene, cis & trans	524.2	—	0.5	< 0.5	ug/L	—	11/01/12 15:25	2733878
100-41-4	Ethylbenzene	524.2	700 *	0.5	< 0.5	ug/L	—	11/01/12 15:25	2733878
87-68-3	Hexachlorobutadiene	524.2	—	0.5	< 0.5	ug/L	—	11/01/12 15:25	2733878
98-82-8	Isopropylbenzene	524.2	—	0.5	< 0.5	ug/L	—	11/01/12 15:25	2733878
99-87-6	4-Isopropyltoluene	524.2	—	0.5	< 0.5	ug/L	—	11/01/12 15:25	2733878
1634-04-4	Methyl-t-butyl ether (MTBE)	524.2	—	0.5	< 0.5	ug/L	—	11/01/12 15:25	2733878
91-20-3	Naphthalene	524.2	—	0.5	< 0.5	ug/L	—	11/01/12 15:25	2733878
103-65-1	n-Propylbenzene	524.2	—	0.5	< 0.5	ug/L	—	11/01/12 15:25	2733878
100-42-5	Styrene	524.2	100 *	0.5	< 0.5	ug/L	—	11/01/12 15:25	2733878
630-20-6	1,1,1,2-Tetrachloroethane	524.2	—	0.5	< 0.5	ug/L	—	11/01/12 15:25	2733878
79-34-5	1,1,2,2-Tetrachloroethane	524.2	—	0.5	< 0.5	ug/L	—	11/01/12 15:25	2733878
127-18-4	Tetrachloroethylene	524.2	5 *	0.5	< 0.5	ug/L	—	11/01/12 15:25	2733878
108-88-3	Toluene	524.2	1000 *	0.5	< 0.5	ug/L	—	11/01/12 15:25	2733878
87-61-6	1,2,3-Trichlorobenzene	524.2	—	0.5	< 0.5	ug/L	—	11/01/12 15:25	2733878
120-82-1	1,2,4-Trichlorobenzene	524.2	70 *	0.5	< 0.5	ug/L	—	11/01/12 15:25	2733878
71-55-6	1,1,1-Trichloroethane	524.2	200 *	0.5	< 0.5	ug/L	—	11/01/12 15:25	2733878
79-00-5	1,1,2-Trichloroethane	524.2	5 *	0.5	< 0.5	ug/L	—	11/01/12 15:25	2733878

79-01-6	Trichloroethylene	524.2	5 *	0.5	< 0.5	ug/L	—	11/01/12 15:25	2733878
75-69-4	Trichlorofluoromethane	524.2	—	0.5	< 0.5	ug/L	—	11/01/12 15:25	2733878
96-18-4	1,2,3-Trichloropropane	524.2	—	0.5	< 0.5	ug/L	—	11/01/12 15:25	2733878
95-63-6	1,2,4-Trimethylbenzene	524.2	—	0.5	< 0.5	ug/L	—	11/01/12 15:25	2733878
108-67-8	1,3,5-Trimethylbenzene	524.2	—	0.5	< 0.5	ug/L	—	11/01/12 15:25	2733878
75-01-4	Vinyl chloride	524.2	2 *	0.2	< 0.2	ug/L	—	11/01/12 15:25	2733878
95-47-6	1,2-Xylene	524.2	—	0.5	< 0.5	ug/L	—	11/01/12 15:25	2733878
179601-23-1	1,3 + 1,4-Xylene	524.2	—	0.5	< 0.5	ug/L	—	11/01/12 15:25	2733878
1330-20-7	Xylenes, Total	524.2	10000 *	0.5	< 0.5	ug/L	—	11/01/12 15:25	2733878

Compliance monitoring for 1,2-Dibromo-3-chloropropane (DBCP) must be done using EPA method 504.1.

Compliance monitoring for 1,2-Dibromoethane (EDB) must be done using EPA method 504.1.

UL Methods

Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
375-73-5	Perfluorobutanesulfonic acid (PFBS)	537	—	90.0	< 90.9	ng/L	11/08/12 06:45	11/09/12 12:14	2733882
375-85-9	Perfluoroheptanoic acid (PFHpA)	537	—	10.0	< 10.1	ng/L	11/08/12 06:45	11/09/12 12:14	2733882
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	537	—	30.0	< 30.3	ng/L	11/08/12 06:45	11/09/12 12:14	2733882
375-95-1	Perfluorononanoic acid (PFNA)	537	—	20.0	< 20.2	ng/L	11/08/12 06:45	11/09/12 12:14	2733882
1763-23-1	Perfluorooctane sulfonate (PFOS)	537	—	40.0	< 40.4	ng/L	11/08/12 06:45	11/09/12 12:14	2733882
335-67-1	Perfluorooctanoic acid (PFOA)	537	—	20	**27**	ng/L	11/08/12 06:45	11/09/12 12:14	2733882
80-05-7	Bisphenol A	L200	—	0.1	< 0.1	ug/L	11/01/12 09:30	11/05/12 22:34	2733881
25154-52-3	Nonylphenol, isomer mix	L200	—	0.5	< 0.5	ug/L	11/01/12 09:30	11/05/12 22:34	2733881
1806-26-4	4-n-Octylphenol	L200	—	0.5	< 0.5	ug/L	11/01/12 09:30	11/05/12 22:34	2733881
140-66-9	4-tert-Octylphenol	L200	—	0.5	< 0.5	ug/L	11/01/12 09:30	11/05/12 22:34	2733881
87-86-5	Pentachlorophenol	L200	—	0.1	< 0.1	ug/L	11/01/12 09:30	11/05/12 22:34	2733881
92-69-3	Phenylphenol	L200	—	0.1	< 0.1	ug/L	11/01/12 09:30	11/05/12 22:34	2733881
79-94-7	Tetrabromobisphenol A	L200	—	0.1	< 0.1	ug/L	11/01/12 09:30	11/05/12 22:34	2733881
88-06-2	2,4,6-Trichlorophenol	L200	—	0.1	**0.1**	ug/L	11/01/12 09:30	11/05/12 22:34	2733881
56-53-1	Diethylstilbestrol (DES)	L211	—	0.5	< 0.5	ng/L	11/05/12 09:00	11/05/12 20:31	2733868
57-91-0	17alpha-Estradiol	L211	—	0.5	< 0.5	ng/L	11/05/12 09:00	11/05/12 20:31	2733868
50-28-2	17beta-Estradiol	L211	—	0.5	< 0.5	ng/L	11/05/12 09:00	11/05/12 20:31	2733868
50-27-1	Estriol	L211	—	0.5	< 0.5	ng/L	11/05/12 09:00	11/05/12 20:31	2733868
53-16-7	Estrone	L211	—	0.5	< 0.5	ng/L	11/05/12 09:00	11/05/12 20:31	2733868
57-63-6	17alpha-Ethynyl estradiol	L211	—	0.5	< 0.5	ng/L	11/05/12 09:00	11/05/12 20:31	2733868
57-83-0	Progesterone	L211	—	0.1	**0.2**	ng/L	11/05/12 09:00	11/05/12 20:31	2733868
481-30-1	cis-Testosterone	L211	—	0.1	< 0.1	ng/L	11/05/12 09:00	11/05/12 20:31	2733868
58-22-0	trans-Testosterone	L211	—	0.1	< 0.1	ng/L	11/05/12 09:00	11/05/12 20:31	2733868
103-90-2	Acetaminophen	L220	—	0.005	< 0.005	ug/L	11/05/12 07:45	11/16/12 10:28	2733877
60-80-0	Antipyrine	L220	—	0.001	< 0.001	ug/L	11/05/12 07:45	11/16/12 10:28	2733877
29122-68-7	Atenolol	L220	—	0.001	**0.194**	ug/L	11/05/12 07:45	11/20/12 14:21	2733877
83905-01-5	Azithromycin	L220	—	0.005	**0.020**	ug/L	11/05/12 07:45	11/16/12 10:28	2733877
1405-87-4	Bacitracin	L220	—	1.0	< 1.0	ug/L	11/05/12 07:45	11/16/12 10:28	2733877
58-08-2	Caffeine	L220	—	0.05	< 0.05	ug/L	11/05/12 07:45	11/16/12 10:28	2733877
6804-07-5	Carbadox	L220	—	0.005	< 0.005	ug/L	11/05/12 07:45	11/16/12 10:28	2733877
298-46-4	Carbamazepine	L220	—	0.001	**0.130**	ug/L	11/05/12 07:45	11/20/12 14:21	2733877
85721-33-1	Ciprofloxacin	L220	—	0.05	< 0.05	ug/L	11/05/12 07:45	11/16/12 10:28	2733877
486-56-6	Cotinine	L220	—	0.001	**0.018**	ug/L	11/05/12 07:45	11/16/12 10:28	2733877
134-62-3	DEET	L220	—	0.005	**0.122**	ug/L	11/05/12 07:45	11/16/12 10:28	2733877
50-02-2	Dexamethasone	L220	—	0.005	< 0.005	ug/L	11/05/12 07:45	11/16/12 10:28	2733877
439-14-5	Diazepam	L220	—	0.001	**0.002**	ug/L	11/05/12 07:45	11/16/12 10:28	2733877

42399-41-7	Diltiazem	L220	—	0.0001	< 0.0001	ug/L	11/05/12 07:45	11/16/12 10:28	2733877
93106-60-6	Enrofloxacin	L220	—	0.05	< 0.05	ug/L	11/05/12 07:45	11/16/12 10:28	2733877
114-07-8	Erythromycin	L220	—	0.001	< 0.001	ug/L	11/05/12 07:45	11/16/12 10:28	2733877
59333-67-4	Fluoxetine (Prozac)	L220	—	0.001	**0.010**	ug/L	11/05/12 07:45	11/16/12 10:28	2733877
73334-07-3	Iopromide	L220	—	0.05	< 0.05	ug/L	11/05/12 07:45	11/16/12 10:28	2733877
11054-70-9	Lasalocid	L220	—	0.001	< 0.001	ug/L	11/05/12 07:45	11/16/12 10:28	2733877
154-21-2	Lincomycin	L220	—	0.0001	< 0.0001	ug/L	11/05/12 07:45	11/16/12 10:28	2733877
57-53-4	Meprobamate	L220	—	0.001	**0.619**	ug/L	11/05/12 07:45	11/20/12 14:21	2733877
17090-79-8	Monensin	L220	—	0.001	< 0.001	ug/L	11/05/12 07:45	11/16/12 10:28	2733877
55134-13-9	Narasin	L220	—	0.001	< 0.001	ug/L	11/05/12 07:45	11/16/12 10:28	2733877
22083-74-5	Nicotine	L220	—	0.005	**0.022**	ug/L	11/05/12 07:45	11/16/12 10:28	2733877
70458-96-7	Norfloxacin	L220	—	0.05	< 0.05	ug/L	11/05/12 07:45	11/16/12 10:28	2733877
7060-74-4	Oleandomycin	L220	—	0.001	< 0.001	ug/L	11/05/12 07:45	11/16/12 10:28	2733877
611-59-6	Paraxanthine	L220	—	0.005	**0.038**	ug/L	11/05/12 07:45	11/16/12 10:28	2733877
125-33-7	Primidone	L220	—	0.005	**0.400**	ug/L	11/05/12 07:45	11/16/12 10:28	2733877
80214-83-1	Roxithromycin	L220	—	0.001	< 0.001	ug/L	11/05/12 07:45	11/16/12 10:28	2733877
53003-10-4	Salinomycin	L220	—	0.0001	< 0.0001	ug/L	11/05/12 07:45	11/16/12 10:28	2733877
79902-63-9	Simvastatin	L220	—	0.005	< 0.005	ug/L	11/05/12 07:45	11/16/12 10:28	2733877
80-32-0	Sulfachloropyridazine	L220	—	0.005	< 0.005	ug/L	11/05/12 07:45	11/16/12 10:28	2733877
68-35-9	Sulfadiazine	L220	—	0.001	< 0.001	ug/L	11/05/12 07:45	11/16/12 10:28	2733877
122-11-2	Sulfadimethoxine	L220	—	0.0001	< 0.0001	ug/L	11/05/12 07:45	11/16/12 10:28	2733877
127-79-7	Sulfamerazine	L220	—	0.001	< 0.001	ug/L	11/05/12 07:45	11/16/12 10:28	2733877
57-68-1	Sulfamethazine	L220	—	0.001	< 0.001	ug/L	11/05/12 07:45	11/16/12 10:28	2733877
144-82-1	Sulfamethizole	L220	—	0.001	< 0.001	ug/L	11/05/12 07:45	11/16/12 10:28	2733877
723-46-6	Sulfamethoxazole	L220	—	0.001	**0.006**	ug/L	11/05/12 07:45	11/16/12 10:28	2733877
599-79-1	Sulfasalazine	L220	—	0.005	**0.012**	ug/L	11/05/12 07:45	11/16/12 10:28	2733877
72-14-0	Sulfathiazole	L220	—	0.001	< 0.001	ug/L	11/05/12 07:45	11/16/12 10:28	2733877
83-67-0	Theobromine	L220	—	0.05	**0.46**	ug/L	11/05/12 07:45	11/16/12 10:28	2733877
738-70-5	Trimethoprim	L220	—	0.001	< 0.001	ug/L	11/05/12 07:45	11/16/12 10:28	2733877
74610-55-2	Tylosin	L220	—	0.001	< 0.001	ug/L	11/05/12 07:45	11/16/12 10:28	2733877
21411-53-0	Virginiamycin M1	L220	—	0.001	< 0.001	ug/L	11/05/12 07:45	11/16/12 10:28	2733877
41859-67-0	Bezafibrate	L221	—	0.0005	< 0.0005	ug/L	11/06/12 07:50	11/14/12 04:39	2733876
56-75-7	Chloramphenicol	L221	—	0.005	< 0.048	ug/L	11/06/12 07:50	11/14/12 08:22	2733876
64-72-2	Chlorotetracycline	L221	—	0.05	< 0.05	ug/L	11/06/12 07:50	11/14/12 04:39	2733876
882-09-7	Clofibric acid	L221	—	0.0005	< 0.0005	ug/L	11/06/12 07:50	11/14/12 04:39	2733876
15307-86-5	Diclofenac	L221	—	0.0005	< 0.0048	ug/L	11/06/12 07:50	11/14/12 08:22	2733876
57-41-0	Dilantin	L221	—	0.002	**0.433**	ug/L	11/06/12 07:50	11/14/12 08:22	2733876
83038-87-3	Doxycycline	L221	—	0.05	< 0.05	ug/L	11/06/12 07:50	11/14/12 04:39	2733876
25812-30-0	Gemfibrozil	L221	—	0.0005	< 0.0005	ug/L	11/06/12 07:50	11/14/12 04:39	2733876
15687-27-1	Ibuprofen	L221	—	0.05	< 0.05	ug/L	11/06/12 07:50	11/14/12 04:39	2733876
51-48-9	Levothyroxine (Synthroid)	L221	—	0.002	< 0.002	ug/L	11/06/12 07:50	11/14/12 04:39	2733876
22204-53-1	Naproxen	L221	—	0.002	< 0.002	ug/L	11/06/12 07:50	11/14/12 04:39	2733876
2058-46-0	Oxytetracycline	L221	—	0.5	< 0.5	ug/L	11/06/12 07:50	11/14/12 04:39	2733876
61-33-6	Penicillin G	L221	—	0.002	< 0.019	ug/L	11/06/12 07:50	11/14/12 08:22	2733876
87-08-1	Penicillin V	L221	—	0.002	< 0.019	ug/L	11/06/12 07:50	11/14/12 08:22	2733876
53-03-2	Prednisone	L221	—	0.002	< 0.002	ug/L	11/06/12 07:50	11/14/12 04:39	2733876
69-72-7	Salicylic acid	L221	—	0.05	**0.09**	ug/L	11/06/12 07:50	11/14/12 04:39	2733876
60-54-8	Tetracycline	L221	—	0.5	< 0.5	ug/L	11/06/12 07:50	11/14/12 04:39	2733876
58-55-9	Theophylline	L221	—	0.005	**0.028**	ug/L	11/06/12 07:50	11/14/12 04:39	2733876
102-20-2	Triclocarban	L221	—	0.005	**0.120**	ug/L	11/06/12 07:50	11/14/12 04:39	2733876
1222-05-5	Galaxolide	S170	—	10	**590**	ng/L	11/05/12 08:44	11/05/12 18:01	2733869

21145-77-7	Tonalid	S170	---	10	100	ng/L	11/05/12 08:44	11/05/12 18:01	2733869

Reference Lab Tests

Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed	UL ID #
1746-01-6	Dioxin	1613	30 *	10	< 10	pg/L	---	11/16/12 23:07	2733865

† UL has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

Lab Definitions

Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis.

Internal Standards (IS) - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

Laboratory Duplicate (LD) - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

Laboratory Fortified Blank (LFB) / Laboratory Control Sample (LCS) - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control.

Laboratory Method Blank (LMB) / Laboratory Reagent Blank (LRB) - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

Laboratory Trip Blank (LTB) / Field Reagent Blank (FRB) - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD) - is a sample aliquot taken from the same field sample source as the Matrix Spike Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix.

Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM) - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results.

Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV) - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the calibration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

Surrogate Standard (SS) / Surrogate Analyte (SUR) - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.

LABORATORY REPORT

This report contains 5 pages.
(including the cover page)

If you have any questions concerning this report, please do not hesitate to call us at (800) 332-4345 or (574) 233-4777.

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UL LLC
110 S. Hill St., South Bend, IN 46617-2702 USA
T: 800.332.4345 / F: 574.233.8207 / W: UL.com

Laboratory Report

Client: City of Wichita Falls

Attn: Mark Southard
P. O. Box 1431
Wichita Falls, TX 76307

Report: 287632
Priority: Standard Written
Status: Final
PWS ID: TX2430001

Copies to: None

Sample Information

UL ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
2731125	Lake Arrowhead	1623	10/24/12 14:00	Client	10/25/12 09:15
2731126	Lake Wichita	1623	10/24/12 13:05	Client	10/25/12 09:15
2731128	Waste Water CCB	1623	10/24/12 14:30	Client	10/25/12 09:15

Report Summary

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call Jim Vernon at (574) 233-4777.

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Digitally signed by
james.n.vernon@ul.com
Date: 2012.11.12 13:31:36 -05'00'

Authorized Signature | Title | Date

Client Name: City of Wichita Falls
Report #: 287632

UL LLC
110 S. Hill St., South Bend, IN 46617-2702 USA
T: 800.332.4345 / F: 574.233.8207 / W: UL.com

Client Name: City of Wichita Falls Report #: 287632

Sampling Point: Lake Arrowhead PWS ID: TX2430001

Microbiology									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
—	Giardia	1623	—	0.091	< 0.091	cysts/L	—	10/26/12 09:05	2731125
—	Cryptosporidium	1623	—	0.091	< 0.091	oocysts/L	—	10/26/12 09:05	2731125

For method 1623: The calculated MRL value is dependant on the volume filtered and the volume analyzed for each sample.

Sampling Point: Lake Wichita PWS ID: TX2430001

Microbiology									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
—	Giardia	1623	—	0.054	< 0.054	cysts/L	—	10/26/12 09:30	2731126
—	Cryptosporidium	1623	—	0.054	< 0.054	oocysts/L	—	10/26/12 09:30	2731126

For method 1623: The calculated MRL value is dependant on the volume filtered and the volume analyzed for each sample.

Sampling Point: Waste Water CCB PWS ID: TX2430001

Microbiology									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
—	Giardia	1623	—	0.050	**1.150**	cysts/L	—	10/26/12 09:05	2731128
—	Cryptosporidium	1623	—	0.050	**0.100**	oocysts/L	—	10/26/12 09:05	2731128

For method 1623: The calculated MRL value is dependant on the volume filtered and the volume analyzed for each sample.

† UL has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

Lab Definitions

Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis.

Internal Standards (IS) - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

Laboratory Duplicate (LD) - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

Laboratory Fortified Blank (LFB) / Laboratory Control Sample (LCS) - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control.

Laboratory Method Blank (LMB) / Laboratory Reagent Blank (LRB) - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

Laboratory Trip Blank (LTB) / Field Reagent Blank (FRB) - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD) - is a sample aliquot taken from the same field sample source as the Matrix Spike Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix.

Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM) - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results.

Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV) - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the calibration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

Surrogate Standard (SS) / Surrogate Analyte (SUR) - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.

LABORATORY REPORT

This report contains 5 pages.
(including the cover page)

If you have any questions concerning this report, please do not hesitate to call us at (800) 332-4345 or (574) 233-4777.

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UL LLC
110 S. Hill St., South Bend, IN 46617-2702 USA
T: 800.332.4345 / F: 574.233.8207 / W: UL.com

Laboratory Report

Client: City of Wichita Falls

Attn: Mark Southard
P. O. Box 1431
Wichita Falls, TX 76307

Report: 287375
Priority: Standard Written
Status: Final
PWS ID: TX2430001

Copies to: None

Sample Information

UL ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
2728159	1005 River Road CCB	1623	10/17/12 13:15	Client	10/18/12 09:15

Report Summary

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call Jim Vernon at (574) 233-4777.

Note: This report may not be reproduced, except in full, without written approval from UL.

Jim Vernon P.M.

Digitally signed by james.n.vernon@ul.com
Date: 2012.10.29 13:41:14 -04'00'

Authorized Signature | Title | Date

Client Name: City of Wichita Falls
Report #: 287375

UL LLC
110 S. Hill St., South Bend, IN 46617-2702 USA
T: 800.332.4345 / F: 574.233.8207 / W: UL.com

Client Name: City of Wichita Falls Report #: 287375

Sampling Point: 1005 River Road CCB PWS ID: TX2430001

Microbiology									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
—	Giardia	1623	—	0.050	< 0.050	cysts/L	—	10/19/12 09:40	2728159
—	Cryptosporidium	1623	—	0.050	< 0.050	oocysts/L	—	10/19/12 09:40	2728159

For method 1623: The calculated MRL value is dependant on the volume filtered and the volume analyzed for each sample.

† UL has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

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eurofins

Eaton Analytical

formerly MWH Laboratories

Acknowledgement of Samples Received

Addr: **City of Wichita Falls**
4801 Big Ed Neal Dr
Wichita Falls, TX 76310

Client ID: WICHITA-TX
Folder #: 412567
Project: WASTEWATER_REUSE
Sample Group: REUSE STUDY

Attn: Mark Southard
Phone: 940-691-1153

Project Manager: Cam P Pham
Phone: (909) 254-0381
PO #: P1300784

The following samples were received from you on **October 17, 2012**. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact your service representative. Thank you for using Eurofins Eaton Analytical.

Sample #	Sample ID			Sample Date
201210170373	WASTEWATER EFFLUENT			10/16/2012 0930
	Chlorpyrifos	Demeton-O	Demeton-S	
	Diazinon	@508EDD plus Oxyfluorphen	@515_4-REG	
	@525_ADDITIONAL	@525PLUS C	@532-LCMS	
	@551_EDB-DBCP	@8270SCR C	@TBTEDD Subbed	
	@VOAPP C	2-Chloroethylvinylether by 8260	Ammonia Nitrogen	
	Ammonium ion (as N) at 25C	Asbestos by TEM - >10 microns	Chromium III (Calculated)	
	Chromium Total ICAP/MS	Cyanide by manual distillation	Hexavalent chromium(Dissolved)	
	Nickel Total ICAP/MS	Orthophosphate as P (OPO4)	PH (H3=past HT not compliant)	
	Phenolic Compounds	Silica		
201211120104	WASTEWATER EFFLUENT - DUP			10/16/2012 0930
	@508EDD plus Oxyfluorphen			

Test Description

@508EDD plus Oxyfluorphen -- @508EDD plus Oxyfluorphen

@515_4-REG -- Chlorophenoxy Herbicides

@525_ADDITIONAL -- EPA 525 N/P Pesticides

@525PLUS C -- Semivolatiles by GCMS

@532-LCMS -- Sulfonyl Urea Compounds

@551_EDB-DBCP -- EDB/DBCP/HAN by EPA 551.1

@8270SCR C -- 8270 Semivolatile, Screen, TIC

@TBTEDD Subbed -- Tributyltin

@VOAPP C -- Volatile Organics by EPA 624

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formerly MWH Laboratories

750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
Tel: (626) 386-1100
Fax: (626) 386-1101
1 800 566 LABS (1 800 566 5227)

Laboratory Report

for

City of Wichita Falls
4801 Big Ed Neal Dr
Wichita Falls, TX 76310
Attention: Mark Southard
Fax: 940-691-4121

Date of Issue
11/19/2012

EUROFINS EATON
ANALYTICAL

NELAP ACCREDITED TNI LABORATORY
01114CA

Report: 412567
Project: WASTEWATER_REUSE
Group: REUSE STUDY

CPP: Cam P Pham

Project Manager

Laboratory certifies that the test results meet all **TNI NELAP** requirements unless noted in the Comments section or the Case Narrative. Following the cover page are Hits Reports, Comments, QC Summary, QC Report and Regulatory Forms. This report shall not be reproduced except in full, without the written approval of the laboratory.

STATE CERTIFICATION LIST

State	Certification Number	State	Certification Number
Alabama	41060	**Mississippi**	Certified
Alaska	CA00006	**Montana**	Cert 0035
Arizona	AZ0778	**Nevada**	CA00006-2012-1
Arkansas	Certified	**New Hampshire**	2959-11
California – NELAP	01114CA	**New Jersey**	CA 008
California – ELAP	1422	**New Mexico**	Certified
Colorado	Certified	**New York**	11320
Connecticut	PH-0107	**North Carolina**	06701
Delaware	CA 006	**North Dakota**	R-009
Florida	E871024	**Oregon**	CA 200003-010
Georgia	947	**Pennsylvania**	68-565
Guam	11-004r	**Rhode Island**	01114CA
Hawaii	Certified	**South Carolina**	87016001
Idaho	Certified	**South Dakota**	Certified
Illinois	200033	**Tennessee**	TN02839
Indiana	C-CA-01	**Texas**	T104704230-11-2
Kansas	E-10268	**Utah**	Mont-1
Kentucky	90107	**Vermont**	VT0114
Louisiana	LA110022	**Virginia**	00210
Maine	CA0006	**Washington**	C383
Maryland	224	**West Virginia**	9943 C
Commonwealth of Northern Marianas Is.	MP0004	**Wisconsin**	998316660
Massachusetts	M-CA006	**Wyoming**	8TMS-L
Michigan	9906	**EPA Region 5**	Certified

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Acknowledgement of Samples Received

Addr: **City of Wichita Falls**
4801 Big Ed Neal Dr
Wichita Falls, TX 76310

Client ID: WICHITA-TX
Folder #: 412567
Project: WASTEWATER_REUSE
Sample Group: REUSE STUDY

Attn: Mark Southard
Phone: 940-691-1153

Project Manager: Cam P Pham
Phone: (909) 254-0381
PO #: P1300784

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Sample #	Sample ID	Sample Date
201210170373	WASTEWATER EFFLUENT	10/16/2012 0930

Chlorpyrifos	Demeton-O	Demeton-S
Diazinon	@508EDD plus Oxyfluorphen	@515_4-REG
@525_ADDITIONAL	@525PLUS C	@532-LCMS
@551_EDB-DBCP	@8270SCR C	@TBTEDD Subbed
@VOAPP C	2-Chloroethylvinylether by 8260	Ammonia Nitrogen
Ammonium ion (as N) at 25C	Asbestos by TEM - >10 microns	Chromium III (Calculated)
Chromium Total ICAP/MS	Cyanide by manual distillation	Hexavalent chromium(Dissolved)
Nickel Total ICAP/MS	Orthophosphate as P (OPO4)	PH (H3=past HT not compliant)
Phenolic Compounds	Silica	

201211120104	WASTEWATER EFFLUENT - DUP	10/16/2012 0930

@508EDD plus Oxyfluorphen

Test Description

@508EDD plus Oxyfluorphen -- @508EDD plus Oxyfluorphen

@515_4-REG -- Chlorophenoxy Herbicides

@525_ADDITIONAL -- EPA 525 N/P Pesticides

@525PLUS C -- Semivolatiles by GCMS

@532-LCMS -- Sulfonyl Urea Compounds

@551_EDB-DBCP -- EDB/DBCP/HAN by EPA 551.1

@8270SCR C -- 8270 Semivolatile, Screen, TIC

@TBTEDD Subbed -- Tributyltin

@VOAPP C -- Volatile Organics by EPA 624

412567

MWH Laboratories
A Division of MWH Americas, Inc.

CHAIN OF CUSTODY RECORD

750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
Tel: 626 386 1100
Fax: 626 386 1101
1 800 566 LABS (1 800 566 5227)

MWH LABS USE ONLY:

LOGIN COMMENTS: _____

SAMPLES CHECKED AGAINST COC BY: JS
SAMPLES LOGGED IN BY: JS
SAMPLES REC'D DAY OF COLLECTION? [ ] (check for yes)

SAMPLE TEMP RECEIVED AT:
[ ] Colton / Sacramento / Scottsdale _____ °c (Compliance: 4 ± 2 °C)
[✓] Monrovia 3.8 °c (Compliance: 4 ± 2 °C)

CONDITION OF BLUE ICE: FROZEN ✓ PARTIALLY FROZEN ___ THAWED ___ WET ICE _____ NO ICE _____

METHOD OF SHIPMENT: Pick-Up / Walk-In / FedEx / UPS / DHL / Area Fast / Top Line / Other: _____

TO BE COMPLETED BY SAMPLER:

COMPANY/AGENCY NAME: City of Wichita Falls

PROJECT CODE: Wastewater Reuse

MWH LABS CLIENT CODE: Wichita TX

COC ID:

SAMPLE GROUP: Wastewater Effluent

TAT requested: rush by adv notice only

STD ✓ 1 wk ___ 3 day ___ 2 day ___ 1 day ___

COMPLIANCE SAMPLES (check for yes) [ ] - Requires state forms [ ]

NON-COMPLIANCE SAMPLES (check for yes) [X]
REGULATION INVOLVED: _____ (eg. SDWA, Phase V, NPDES, FDA, ...)

Type of samples (circle one): ROUTINE SPECIAL CONFIRMATION

SEE ATTACHED BOTTLE ORDER FOR ANALYSES [X] (check for yes), OR
list ANALYSES REQUIRED (enter number of bottles sent for each test for each sample)

SAMPLE DATE	SAMPLE TIME	SAMPLE ID	CLIENT LAB ID	MATRIX*	Field Data	Field Data	[illegible]	SAMPLER COMMENTS
10/16/12	9:30 AM		EFFLUENT					[illegible] 10/17/12 13:25

* MATRIX TYPES: RSW = Raw Surface Water, RGW = Raw Ground Water, CFW = Chlor(am)inated Finished Water, FW = Other Finished Water, SEAW = Sea Water, WW = Waste Water, BW = Bottled Water, SW = Storm Water, SO = Soil, SL = Sludge, O = Other - Please Identify

	SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
SAMPLED BY:	Blair Ramon	Blair Ramon	City of Wichita Falls	10/16/12	10:00 AM
RELINQUISHED BY:	[signature]				
RECEIVED BY:		Joe Sanchez	EEA	10/17/12	1316
RELINQUISHED BY:					
RECEIVED BY:					

PAGE ___ OF ___

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formerly Eaton Laboratories

750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
(626) 386-1100 FAX (626) 386-1101

Kit Order for City of Wichita Falls

Cam P Pham is your Eurofins Eaton Analytical Project Manager

Note: Sampler Please return this paper with your samples

Kit #: 57767
Created By: CPP
Order Date: 10/11/2012
Ship By: 10/01/2012
STG: Bottle Orders

Client ID: WICHITA-TX
Project Code: WASTEWATER_REUSE Bottle Orders
Group Name: REUSE STUDY
PO#/JOB#:

Ship Sample Kits to
City of Wichita Falls
4801 Big Ed Neal Dr
Wichita Falls, TX 76310

Attn: Mark Southard
Phone: 940-691-1153
Fax: 940-691-4121

Send Report to
City of Wichita Falls
4801 Big Ed Neal Dr
Wichita Falls, TX 76310

Attn: Mark Southard
Phone: 940-691-1153
Fax: 940-691-4121

Billing Address
City of Wichita Falls
4801 Big Ed Neal Dr
Wichita Falls, TX 76310

Attn: Mark Southard
Phone: 940-691-1153
Fax: 940-691-4121

# of Samples	Tests	Bottles - Qty for each sample, type & preservative if ai	UN DOT #
3	@508EDD plus Oxyfluorphen	2 1L amber glass no preservative	
3	@515_4-REG	2 125ml amber glass 7mg SULFITE xls	
1	@525_ADDITIONAL	2 1L amber glass 2ml of 6N HCl	UN1789
2	@525_ADDITIONAL, @525PLUS	2 1L amber glass 2ml of 6N HCl	UN1789
1	@525PLUS C	2 1L amber glass 45mg Sulfite xls+1 vial 2 ml 6N HCl	UN1789
3	@532-LCMS	2 40ml amber glass vial TRIZMA + CuSO4	
3	@551_EDB-DBCP	3 60ml amber glass EDB1g(1%NaP/99%KP)+0.6%NH4CL	
2	@8270SCR	2 1L amber glass BNA_NO_PRESERVATIVE	
1	@8270SCR C	2 1L amber glass BNA_1ML_THIO	
3	@TBTEDD Subbed	2 1L amber glass 1.5ml HCL (6N)	UN1789
1	@VOAPP C	4 40ml amber glass vial 1 drop 8% thio+2ml BOT 1:1 HCL	UN1789
1	@VOAPP C	4 40ml amber glass vial 25mg Ascorbic+drop 2ml 1:1 HCL	UN1789
2	@VOAPP, @VOAPP	4 40ml amber glass vial 4drops 6N HCL (36%)	UN1789
3	2-Chloroethylvinylether by 8260	3 40 ml VOA vial 2CEVE5_NO_PRESERVATIVE	
3	Ammonia Nitrogen	1 250ml poly 0.5ml H2SO4 (50%)	UN1830
3	Asbestos by TEM - >10 microns	1 1L poly sonicated no preservative	
3	Chlorpyrifos, Demeton-O, Demeton-S, Diazinon	2 1L amber glass 8141WRD_NO_PRESERVATIVE	
3	Chromium Total ICAP/MS, Nickel Total ICAP/MS, Silica, Silica	1 500ml acid poly 2ml HNO3 (18%)	UN2031
3	Cyanide by manual distillation	1 250 ml poly 2 ml NaOH (30%)+6 scoops AA	
3	Hexavalent Chromium (Dissolved)	1 125ml poly 1ml NH4SO4/NH4OH buffer	UN1824
3	Orthophosphate as P	1 125ml poly OPO4_no preservative	
3	Phenolic Compounds	1 250ml amber glass 1ml H2SO4	UN1830

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City of Wichita Falls
Mark Southard
4801 Big Ed Neal Dr
Wichita Falls, TX 76310

Folder Comments

Analytical results for Demeton are submitted by Eurofins Lancaster Laboratories, Lancaster PA
Analytical results for 508 are submitted by APPL Labs, Clovis, CA
Analytical results for Tributyl Tin are submitted by EBMUD, Oakland, CA CA ELAP # 1060

(Pesticides EPA 508; performed by APPL Inc.) - The sample was originally extracted and analyzed within hold time. However, the LCS was not spiked with the full list. The sample was re-extracted and re-analyzed past hold time with full spiked LCS. Data from both runs are confirmed and reported.

Flags Legend:

L2 - The associated blank spike recovery was below laboratory acceptance limits.

L4 - The associated blank spike recovery was below method acceptance limits.

LE - MRL Check recovery was above laboratory acceptance limits.

VC - CCV is high biased, ND data are reportable as per NELAC 5.5.5.10

The Comments Report may be blank if there are no comments for this report.

eurofins | Eaton Analytical
formerly MWH Laboratories

750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
Tel: (626) 386-1100
Fax: (626) 386-1101
1 800 566 LABS (1 800 566 5227)

Laboratory Hits
Report: 412567

City of Wichita Falls
Mark Southard
4801 Big Ed Neal Dr
Wichita Falls, TX 76310

Samples Received on:
10/17/2012

Analyzed	Analyte	Sample ID	Result	Federal MCL	Units	MRL
	201210170373	**WASTEWATER EFFLUENT**				
11/09/2012 10:26	Ammonium ion (as N) at 25C		0.044		mg/L	0.01
10/30/2012 17:55	Bromodichloromethane		28		ug/L	0.5
10/30/2012 17:55	Bromoform		21		ug/L	0.5
10/30/2012 17:55	Chlorodibromomethane		47		ug/L	0.5
10/30/2012 17:55	Chloroform (Trichloromethane)		8.5		ug/L	0.5
10/22/2012 15:18	Diuron		0.21		ug/L	0.1
10/18/2012 11:18	Hexavalent chromium(Dissolved)		0.080		ug/L	0.02
10/17/2012 16:46	Orthophosphate as P		2.5		mg/L	0.05
11/08/2012 15:01	PH (H3=past HT not compliant)		7.4		Units	0.1
10/18/2012 20:12	Silica		9.2		mg/L	0.5

SUMMARY OF POSITIVE DATA ONLY

eurofins | Eaton Analytical
formerly MWH Laboratories

750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
Tel: (626) 386-1100
Fax: (626) 386-1101
1 800 566 LABS (1 800 566 5227)

Laboratory Data
Report: 412567

City of Wichita Falls
Mark Southard
4801 Big Ed Neal Dr
Wichita Falls, TX 76310

Samples Received on:
10/17/2012

Prepared	Analyzed	QC Ref #	Method	Analyte	Result	Units	MRL	Dilution
WASTEWATER EFFLUENT (201210170373)						**Sampled on 10/16/2012 0930**		
		SM (21) 6710B - Tributyltin						
10/26/2012	11/05/2012	19:05	(SM (21) 6710B)	Tributyltin	ND	ug/L	0.005	1
		EPA 508 - @508EDD plus Oxyfluorphen						
10/23/2012	11/02/2012	00:00	(EPA 508)	2,4-DDD	ND	ug/L	0.05	1
10/23/2012	11/02/2012	00:00	(EPA 508)	2,4-DDE	ND	ug/L	0.05	1
10/23/2012	11/02/2012	00:00	(EPA 508)	2,4-DDT	ND	ug/L	0.02	1
10/23/2012	11/02/2012	00:00	(EPA 508)	4,4-DDE	ND	ug/L	0.01	1
10/23/2012	11/02/2012	00:00	(EPA 508)	4,4-DDT	ND	ug/L	0.02	1
10/23/2012	11/02/2012	00:00	(EPA 508)	4,4-TDE-DDD	ND	ug/L	0.02	1
10/23/2012	11/02/2012	00:00	(EPA 508)	a-BHC	ND	ug/L	0.05	1
0/23/2012	11/02/2012	00:00	(EPA 508)	Alachlor	ND	ug/L	0.1	1
10/23/2012	11/02/2012	00:00	(EPA 508)	Aldrin	ND	ug/L	0.05	1
10/23/2012	11/02/2012	00:00	(EPA 508)	b-BHC	ND	ug/L	0.05	1
10/23/2012	11/02/2012	00:00	(EPA 508)	Benefin	ND	ug/L	0.1	1
10/23/2012	11/02/2012	00:00	(EPA 508)	Captan	ND	ug/L	0.1	1
10/23/2012	11/02/2012	00:00	(EPA 508)	Carbophenothion	ND	ug/L	0.05	1
10/23/2012	11/02/2012	00:00	(EPA 508)	Chlordane	ND	ug/L	0.05	1
10/23/2012	11/02/2012	00:00	(EPA 508)	Chlorothalonil	ND	ug/L	0.05	1
10/23/2012	11/02/2012	00:00	(EPA 508)	d-BHC	ND	ug/L	0.05	1
10/23/2012	11/02/2012	00:00	(EPA 508)	Dicofol	ND	ug/L	0.1	1
10/23/2012	11/02/2012	00:00	(EPA 508)	Dieldrin	ND	ug/L	0.02	1
10/23/2012	11/02/2012	00:00	(EPA 508)	Endosulfan I	ND	ug/L	0.02	1
10/23/2012	11/02/2012	00:00	(EPA 508)	Endosulfan II	ND	ug/L	0.01	1
10/23/2012	11/02/2012	00:00	(EPA 508)	Endosulfan Sulfate	ND	ug/L	0.05	1
10/23/2012	11/02/2012	00:00	(EPA 508)	Endrin	ND	ug/L	0.05	1
10/23/2012	11/02/2012	00:00	(EPA 508)	Endrin Aldehyde	ND	ug/L	0.05	1
10/23/2012	11/02/2012	00:00	(EPA 508)	Endrin Ketone	ND	ug/L	0.05	1
10/23/2012	11/02/2012	00:00	(EPA 508)	g-BHC	ND	ug/L	0.05	1
10/23/2012	11/02/2012	00:00	(EPA 508)	Heptachlor	ND	ug/L	0.01	1
10/23/2012	11/02/2012	00:00	(EPA 508)	Heptachlor Epoxide	ND	ug/L	0.01	1
10/23/2012	11/02/2012	00:00	(EPA 508)	hexachlorobenzene	ND	ug/L	0.05	1
10/23/2012	11/02/2012	00:00	(EPA 508)	Methoxychlor	ND	ug/L	0.05	1
10/23/2012	11/02/2012	00:00	(EPA 508)	Nitrofen	ND	ug/L	0.05	1
10/23/2012	11/02/2012	00:00	(EPA 508)	Oxyfluorphen	ND	ug/L	0.05	1
10/23/2012	11/02/2012	00:00	(EPA 508)	PCB-1016	ND	ug/L	0.5	1

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Report: 412567

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Prepared	Analyzed	QC Ref #	Method	Analyte	Result	Units	MRL	Dilution
10/23/2012	11/02/2012 00:00		(EPA 508)	PCB-1221	ND	ug/L	0.5	1
10/23/2012	11/02/2012 00:00		(EPA 508)	PCB-1232	ND	ug/L	0.5	1
10/23/2012	11/02/2012 00:00		(EPA 508)	PCB-1242	ND	ug/L	0.5	1
10/23/2012	11/02/2012 00:00		(EPA 508)	PCB-1248	ND	ug/L	0.5	1
10/23/2012	11/02/2012 00:00		(EPA 508)	PCB-1254	ND	ug/L	0.5	1
10/23/2012	11/02/2012 00:00		(EPA 508)	PCB-1260	ND	ug/L	0.5	1
10/23/2012	11/02/2012 00:00		(EPA 508)	PCNB	ND	ug/L	0.05	1
10/23/2012	11/02/2012 00:00		(EPA 508)	Propachlor	ND	ug/L	0.1	1
10/23/2012	11/02/2012 00:00		(EPA 508)	Toxaphene	ND	ug/L	0.5	1
		EPA 8141 - Demeton-O by 8141						
	10/27/2012 06:21		(EPA 8141)	Demeton-o	ND (U)	ug/L	1.9	1
		EPA 8141 - Demeton-S by 8141						
	10/27/2012 06:21		(EPA 8141)	Demeton-s	ND (U)	ug/L	2.8	1
		EPA 8141 - Chlorpyrifos by 8141						
	10/27/2012 06:21		(EPA 8141)	Chlorpyrifos	ND (U)	ug/L	2.8	1
		EPA 8141 - Diazinon by 8141						
	10/27/2012 06:21		(EPA 8141)	Diazinon	ND (U)	ug/L	5.7	1
		EPA 200.8 - ICPMS Metals						
10/18/2012	10/19/2012 15:38	677518	(EPA 200.8)	Chromium Total ICAP/MS	ND	ug/L	1	1
10/18/2012	10/19/2012 15:38	677518	(EPA 200.8)	Nickel Total ICAP/MS	ND	ug/L	5	1
		EPA 200.7 - ICP Metals						
10/18/2012	10/18/2012 20:12	677347	(EPA 200.7)	Silica	9.2	mg/L	0.5	1
		EPA 100.2 - Asbestos by TEM - >10 microns						
10/17/2012	10/31/2012 00:00	679081	(EPA 100.2)	Asbestos by TEM - >10 microns	ND	MFL	0.74	1
		Calculated - Ammonium ion (as N) at 25C						
	11/09/2012 10:26		(Calculated)	Ammonium ion (as N) at 25C	0.044	mg/L	0.01	1
		EPA 200.8 - Chromium III (Calculated)						
	10/22/2012 09:35		(EPA 200.8)	Chromium III (Calculated)	ND	ug/L	1	1
		EPA 515.4 - Chlorophenoxy Herbicides						
10/18/2012	10/21/2012 11:10	677744	(EPA 515.4)	2,4,5-TP (Silvex)	ND	ug/L	0.2	1
10/18/2012	10/21/2012 11:10	677744	(EPA 515.4)	2,4-D	ND	ug/L	0.1	1
10/18/2012	10/21/2012 11:10	677744	(EPA 515.4)	Bentazon	ND	ug/L	0.5	1
10/18/2012	10/21/2012 11:10	677744	(EPA 515.4)	Dalapon	ND	ug/L	1	1
10/18/2012	10/21/2012 11:10	677744	(EPA 515.4)	Dinoseb	ND	ug/L	0.2	1
10/18/2012	10/21/2012 11:10	677744	(EPA 515.4)	Pentachlorophenol	ND	ug/L	0.04	1
10/18/2012	10/21/2012 11:10	677744	(EPA 515.4)	Picloram	ND	ug/L	0.1	1
		EPA 551.1 - EDB/DBCP/HAN by EPA 551.1						

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10/22/2012	10/23/2012 02:19	677702	(EPA 551.1)	Dibromochloropropane (DBCP)	ND	ug/L	0.01	1
10/22/2012	10/23/2012 02:19	677702	(EPA 551.1)	Ethylene Dibromide (EDB)	ND	ug/L	0.01	1
10/22/2012	10/23/2012 02:19	677702	(EPA 551.1)	1,2-Dibromopropane	80	%		1
	SW 8270C - 8270 Semivolatile, Screen, TIC							
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	1,2,4,5-Tetrachlorobenzene Scr	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	1,2,4-Trichlorobenzene	ND	ug/L	5	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	1,2-Diphenylhydrazine	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	1,3,5-Trinitrobenzene Screen	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	1,3-Dinitrobenzene Screen	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	1,4-Naphthoquinone Screen	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	1,4-phenylenediamine Screen	ND	ug/L	50	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	1-Naphthylamine Screen	ND	ug/L	10	1
0/23/2012	10/25/2012 18:37	678508	(SW 8270C)	2,3,4,6-tetrachlorophenol Scr	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	2,4,5-Trichlorophenol	ND	ug/L	5	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	2,4,6-Trichlorophenol	ND	ug/L	5	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	2,4-Dichlorophenol	ND	ug/L	5	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	2,4-Dimethylphenol	ND	ug/L	5	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	2,4-Dinitrophenol	ND (VC)	ug/L	50	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	2,4-Dinitrotoluene	ND	ug/L	5	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	2,6-Dichlorophenol Screen	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	2,6-Dinitrotoluene	ND	ug/L	5	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	2-Acetylaminofluorene Screen	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	2-Chloronaphthalene	ND	ug/L	5	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	2-Chlorophenol	ND	ug/L	5	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	2-Methylnaphthalene	ND	ug/L	5	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	2-Methylphenol	ND	ug/L	5	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	2-Naphthylamine Screen	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	2-Nitroaniline	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	2-Nitrophenol	ND	ug/L	5	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	2-Picoline Screen	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	3,3-Dichlorobenzidine	ND	ug/L	50	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	3,3-Dimethylbenzidine Screen	ND	ug/L	50	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	3-Methylcholanthrene Screen	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	3-Nitroaniline	ND	ug/L	20	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	4,6-Dinitro-o-cresol	ND (VC)	ug/L	50	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	4-Aminobiphenyl Screen	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	4-Bromophenylphenylether	ND	ug/L	5	1

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10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	4-Chloroaniline	ND	ug/L	5	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	4-Chlorophenylphenylether	ND	ug/L	5	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	4-Methylphenol	ND	ug/L	5	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	4-Nitroaniline	ND	ug/L	20	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	4-Nitrophenol	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	5-Nitro-o-toluidine Screen	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	7,12-Dimethylbenz(a)anthracene	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	a,a-Dimethylphenethylamine Scr	ND	ug/L	50	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Acenaphthene	ND	ug/L	5	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Acenaphthylene	ND	ug/L	5	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Acetophenone Screen	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Aniline	ND	ug/L	5	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Anthracene	ND	ug/L	5	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Aramite Screen	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Benzidine	ND	ug/L	50	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Benzo(a)anthracene	ND	ug/L	5	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Benzo(a)pyrene	ND	ug/L	5	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Benzo(b)fluoranthene	ND	ug/L	5	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Benzo(g,h,i)perylene	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Benzo(k)fluoranthene	ND	ug/L	5	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Benzoic Acid	ND	ug/L	50	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Benzyl Alcohol	ND	ug/L	5	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	bis(2-Chloroethoxy)methane	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	bis(2-Chloroethyl)ether	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	bis(2-Chloroisopropyl)ether	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Butylbenzylphthalate	ND	ug/L	5	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Carbazole Screen	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Chlorobenzilate Screen	ND	ug/L	50	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Chrysene	ND	ug/L	5	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Di(2-Ethylhexyl)phthalate	ND	ug/L	4	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Diallate (cis or trans) Screen	ND	ug/L	50	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Dibenz(a,h)anthracene	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Dibenzofuran	ND	ug/L	5	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Diethylphthalate	ND	ug/L	5	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Dimethoate Screen	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Dimethylaminoazobenzene Screen	ND	ug/L	10	1

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10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Dimethylphthalate	ND	ug/L	5	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Di-n-butylphthalate	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Di-n-octylphthalate	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Dinoseb Screen	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Diphenylamine Screen	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Disulfoton Screen	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Ethyl Methanesulfonate Screen	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Famphur Screen	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Fluoranthene	ND	ug/L	5	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Fluorene	ND	ug/L	5	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Hexachlorobenzene	ND	ug/L	5	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Hexachlorobutadiene	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Hexachlorocyclopentadiene	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Hexachloroethane	ND	ug/L	5	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Hexachlorophene Screen	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Hexachloropropene Screen	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Indeno(1,2,3-c,d)pyrene	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Isodrin Screen	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Isophorone	ND	ug/L	5	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Isosafrole Screen	ND	ug/L	50	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Kepone Screen	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	m-Dichlorobenzene (1,3-DCB)	ND	ug/L	5	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Methapyrilene Screen	ND	ug/L	50	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Methyl Methanesulfonate Screen	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Naphthalene	ND	ug/L	5	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Nitrobenzene	ND	ug/L	5	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	N-Nitrosodiethylamine Screen	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	N-Nitrosodimethylamine	ND	ug/L	5	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	N-Nitrosodi-n-butylamine Scr	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	N-Nitrosodi-N-propylamine	ND	ug/L	5	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	N-Nitrosodiphenylamine	ND	ug/L	5	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	n-nitrosomethylethylamine Scr	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	N-Nitrosomorpholine Screen	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	N-Nitrosopiperidine Screen	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	N-Nitrosopyrrolidine Screen	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	o-Dichlorobenzene (1,2-DCB)	ND	ug/L	5	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	ooo-Triethylphosphorothioate S	ND	ug/L	10	1

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Prepared	Analyzed	QC Ref #	Method	Analyte	Result	Units	MRL	Dilution
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	o-Toluidine Screen	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Parathion Screen	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	p-Chloro-m-cresol	ND	ug/L	5	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	p-Dichlorobenzene (1,4-DCB)	ND	ug/L	5	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Pentachlorobenzene Screen	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Pentachloroethane Screen	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Pentachloronitrobenzene Screen	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Pentachlorophenol	ND (VC)	ug/L	20	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Phenacetin Screen	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Phenanthrene	ND	ug/L	5	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Phenol	ND	ug/L	5	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Phorate Screen	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Pronamide Screen	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Pyrene	ND	ug/L	5	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Pyridine Screen	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Safrole Screen	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Thionazine Screen	ND	ug/L	10	1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	2,4,6-Tribromophenol	76	%		1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	2-Fluorobiphenyl	50	%		1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	2-Fluorophenol	41	%		1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Nitrobenzene-d5	49	%		1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Phenol-d5	47	%		1
10/23/2012	10/25/2012 18:37	678508	(SW 8270C)	Terphenyl-d14	65	%		1
	EPA 525.2 - Semivolatiles by GCMS							
10/24/2012	10/25/2012 17:30	678802	(EPA 525.2)	2,4-Dinitrotoluene	ND	ug/L	0.1	1
10/24/2012	10/25/2012 17:30	678802	(EPA 525.2)	2,6-Dinitrotoluene	ND	ug/L	0.1	1
10/24/2012	10/25/2012 17:30	678802	(EPA 525.2)	4,4-DDD	ND	ug/L	0.1	1
10/24/2012	10/25/2012 17:30	678802	(EPA 525.2)	4,4-DDE	ND	ug/L	0.1	1
10/24/2012	10/25/2012 17:30	678802	(EPA 525.2)	4,4-DDT	ND	ug/L	0.1	1
10/24/2012	10/25/2012 17:30	678802	(EPA 525.2)	Acenaphthene	ND	ug/L	0.1	1
10/24/2012	10/25/2012 17:30	678802	(EPA 525.2)	Acenaphthylene	ND	ug/L	0.1	1
10/24/2012	10/25/2012 17:30	678802	(EPA 525.2)	Acetochlor	ND	ug/L	0.1	1
10/24/2012	10/25/2012 17:30	678802	(EPA 525.2)	Alachlor	ND	ug/L	0.05	1
10/24/2012	10/25/2012 17:30	678802	(EPA 525.2)	Aldrin	ND (L4)	ug/L	0.05	1
10/24/2012	10/25/2012 17:30	678802	(EPA 525.2)	Alpha-BHC	ND	ug/L	0.1	1
10/24/2012	10/25/2012 17:30	678802	(EPA 525.2)	alpha-Chlordane	ND	ug/L	0.05	1

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Laboratory Data
Report: 412567

City of Wichita Falls
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Wichita Falls, TX 76310

Samples Received on:
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Prepared	Analyzed		QC Ref #	Method	Analyte	Result	Units	MRL	Dilution
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Anthracene	ND	ug/L	0.02	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Atrazine	ND	ug/L	0.05	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Benz(a)Anthracene	ND	ug/L	0.05	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Benzo(a)pyrene	ND	ug/L	0.02	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Benzo(b)Fluoranthene	ND	ug/L	0.02	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Benzo(g,h,i)Perylene	ND	ug/L	0.05	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Benzo(k)Fluoranthene	ND	ug/L	0.02	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Beta-BHC	ND	ug/L	0.1	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Bromacil	ND	ug/L	0.2	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Butachlor	ND	ug/L	0.05	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Butylbenzylphthalate	ND	ug/L	0.5	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Caffeine by method 525mod	ND	ug/L	0.05	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Chlorobenzilate	ND	ug/L	0.1	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Chloroneb	ND	ug/L	0.1	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Chlorothalonil(Draconil,Bravo)	ND	ug/L	0.1	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Chlorpyrifos (Dursban)	ND	ug/L	0.05	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Chrysene	ND	ug/L	0.02	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Delta-BHC	ND	ug/L	0.1	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Di-(2-Ethylhexyl)adipate	ND	ug/L	0.6	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Di(2-Ethylhexyl)phthalate	ND	ug/L	0.6	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Diazinon (Qualitative)	ND	ug/L	0.1	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Dibenz(a,h)Anthracene	ND	ug/L	0.05	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Dichlorvos (DDVP)	ND	ug/L	0.05	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Dieldrin	ND	ug/L	0.2	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Diethylphthalate	ND	ug/L	0.5	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Dimethoate	ND	ug/L	0.1	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Dimethylphthalate	ND	ug/L	0.5	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Di-n-Butylphthalate	ND	ug/L	1	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Di-N-octylphthalate	ND	ug/L	0.1	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Endosulfan I (Alpha)	ND	ug/L	0.1	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Endosulfan II (Beta)	ND	ug/L	0.1	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Endosulfan Sulfate	ND	ug/L	0.1	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Endrin	ND	ug/L	0.2	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Endrin Aldehyde	ND	ug/L	0.1	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	EPTC	ND	ug/L	0.1	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Fluoranthene	ND	ug/L	0.1	1
/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Fluorene	ND	ug/L	0.05	1

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10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	gamma-Chlordane	ND	ug/L	0.05	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Heptachlor	ND	ug/L	0.03	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Heptachlor Epoxide (isomer B)	ND	ug/L	0.05	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Hexachlorobenzene	ND	ug/L	0.05	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Hexachlorocyclopentadiene	ND	ug/L	0.05	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Indeno(1,2,3,c,d)Pyrene	ND	ug/L	0.05	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Isophorone	ND	ug/L	0.5	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Lindane	ND	ug/L	0.04	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Malathion	ND	ug/L	0.1	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Methoxychlor	ND	ug/L	0.1	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Metolachlor	ND	ug/L	0.05	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Metribuzin	ND	ug/L	0.05	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Molinate	ND	ug/L	0.1	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Naphthalene	ND	ug/L	0.3	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Parathion	ND	ug/L	0.1	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Pendimethalin	ND	ug/L	0.1	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Pentachlorophenol	ND (LE)	ug/L	1	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Permethrin (mixed isomers)	ND (LE)	ug/L	0.1	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Phenanthrene	ND	ug/L	0.04	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Propachlor	ND	ug/L	0.05	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Pyrene	ND	ug/L	0.05	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Simazine	ND	ug/L	0.05	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Terbacil	ND	ug/L	0.1	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Terbuthylazine	ND	ug/L	0.1	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Thiobencarb (ELAP)	ND	ug/L	0.2	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	trans-Nonachlor	ND	ug/L	0.05	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Trifluralin	ND	ug/L	0.1	1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	1,3-Dimethyl-2-nitrobenzene	102	%		1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Acenaphthene-d10	82	%		1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Chrysene-d12	87	%		1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Perylene-d12	97	%		1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Phenanthrene-d10	88	%		1
10/24/2012	10/25/2012	17:30	678802	(EPA 525.2)	Triphenylphosphate	109	%		1
				EPA 525 - EPA 525 N/P Pesticides					
10/24/2012	10/29/2012	19:28	679394	(EPA 525)	Guthion	ND	ug/L	0.1	1
10/24/2012	10/29/2012	19:28	679394	(EPA 525)	Mirex	ND	ug/L	0.1	1

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10/24/2012	10/29/2012 19:28	679394	(EPA 525)	1,3-Dimethyl-2-nitrobenzene	101	%		1
10/24/2012	10/29/2012 19:28	679394	(EPA 525)	acenaphthene-d10	89	%		1
10/24/2012	10/29/2012 19:28	679394	(EPA 525)	chrysene-d12	88	%		1
10/24/2012	10/29/2012 19:28	679394	(EPA 525)	perylene-d12	93	%		1
10/24/2012	10/29/2012 19:28	679394	(EPA 525)	phenanthrene-d10	98	%		1
10/24/2012	10/29/2012 19:28	679394	(EPA 525)	Triphenylphosphate	97	%		1
	EPA 218.6 - Hexavalent chromium(Dissolved)							
	10/18/2012 11:18	677390	(EPA 218.6)	Hexavalent chromium(Dissolved)	0.080	ug/L	0.02	1
	MWH/ LCMSMS - Sulfonyl Urea Compounds							
	10/22/2012 15:18	677069	(MWH/ LCMSMS)	Chlorotoluron	ND	ug/L	0.1	1
	10/22/2012 15:18	677069	(MWH/ LCMSMS)	Diuron	0.21	ug/L	0.1	1
	10/22/2012 15:18	677069	(MWH/ LCMSMS)	Isoproturon	ND	ug/L	0.1	1
	10/22/2012 15:18	677069	(MWH/ LCMSMS)	Linuron	ND	ug/L	0.1	1
	10/22/2012 15:18	677069	(MWH/ LCMSMS)	Metazachlor	ND	ug/L	0.1	1
	10/22/2012 15:18	677069	(MWH/ LCMSMS)	Metoxuron	ND	ug/L	0.1	1
	10/22/2012 15:18	677069	(MWH/ LCMSMS)	Propanil	ND	ug/L	0.1	1
	10/22/2012 15:18	677069	(MWH/ LCMSMS)	Pyriproxyfen	ND	ug/L	0.1	1
	10/22/2012 15:18	677069	(MWH/ LCMSMS)	Monuron	90	%		1
	MWH 420/SW9066 - Phenolic Compounds							
10/19/2012	10/20/2012 13:17	677695	(MWH 420/SW9066)	Phenolic Compounds	ND	mg/L	0.01	1
	EPA 335.4 - Cyanide by manual distillation							
	10/24/2012 19:42	678231	(EPA 335.4)	Cyanide by manual distillation	ND	mg/L	0.005	1
	EPA 350.1 - Ammonia Nitrogen							
	10/22/2012 18:36	678007	(EPA 350.1)	Ammonia Nitrogen	ND	mg/L	0.05	1
	EPA 8260 - Volatile Organics by GCMS							
10/23/2012	10/23/2012 13:24	678364	(EPA 8260)	2-Chloroethylvinylether	ND	ug/L	0.5	1
10/23/2012	10/23/2012 13:24	678364	(EPA 8260)	1,2-Dichloroethane-d4	96	%		1
10/23/2012	10/23/2012 13:24	678364	(EPA 8260)	4-Bromofluorobenzene	99	%		1
10/23/2012	10/23/2012 13:24	678364	(EPA 8260)	Toluene-d8	96	%		1
	EPA 624 - Volatile Organics by EPA 624							
10/30/2012	10/30/2012 17:55	679851	(EPA 624)	1,1,1-Trichloroethane	ND	ug/L	0.5	1
10/30/2012	10/30/2012 17:55	679851	(EPA 624)	1,1,2,2-Tetrachloroethane	ND	ug/L	0.5	1
10/30/2012	10/30/2012 17:55	679851	(EPA 624)	1,1,2-Trichloroethane	ND	ug/L	0.5	1
10/30/2012	10/30/2012 17:55	679851	(EPA 624)	1,1-Dichloroethane	ND	ug/L	0.5	1
10/30/2012	10/30/2012 17:55	679851	(EPA 624)	1,1-Dichloroethylene	ND	ug/L	0.5	1
10/30/2012	10/30/2012 17:55	679851	(EPA 624)	1,2-Dichloroethane	ND	ug/L	0.5	1
10/30/2012	10/30/2012 17:55	679851	(EPA 624)	1,2-Dichloropropane	ND	ug/L	0.5	1

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10/30/2012	10/30/2012 17:55	679851	(EPA 624)	2-Butanone (MEK)	ND	ug/L	5	1
10/30/2012	10/30/2012 17:55	679851	(EPA 624)	2-Hexanone	ND	ug/L	10	1
10/30/2012	10/30/2012 17:55	679851	(EPA 624)	4-Methyl-2-Pentanone (MIBK)	ND	ug/L	5	1
10/30/2012	10/30/2012 17:55	679851	(EPA 624)	Acetone	ND	ug/L	10	1
10/30/2012	10/30/2012 17:55	679851	(EPA 624)	Acrolein (Screen)	ND	ug/L	25	1
10/30/2012	10/30/2012 17:55	679851	(EPA 624)	Acrylonitrile (Screen)	ND	ug/L	25	1
10/30/2012	10/30/2012 17:55	679851	(EPA 624)	Benzene	ND	ug/L	0.5	1
10/30/2012	10/30/2012 17:55	679851	(EPA 624)	Bromodichloromethane	28	ug/L	0.5	1
10/30/2012	10/30/2012 17:55	679851	(EPA 624)	Bromoform	21	ug/L	0.5	1
10/30/2012	10/30/2012 17:55	679851	(EPA 624)	Bromomethane (Methyl Bromide)	ND	ug/L	0.5	1
10/30/2012	10/30/2012 17:55	679851	(EPA 624)	Carbon disulfide	ND (L2)	ug/L	0.5	1
10/30/2012	10/30/2012 17:55	679851	(EPA 624)	Carbon Tetrachloride	ND	ug/L	0.5	1
10/30/2012	10/30/2012 17:55	679851	(EPA 624)	Chlorobenzene	ND	ug/L	0.5	1
10/30/2012	10/30/2012 17:55	679851	(EPA 624)	Chlorodibromomethane	47	ug/L	0.5	1
10/30/2012	10/30/2012 17:55	679851	(EPA 624)	Chloroethane	ND	ug/L	0.5	1
10/30/2012	10/30/2012 17:55	679851	(EPA 624)	Chloroform (Trichloromethane)	8.5	ug/L	0.5	1
10/30/2012	10/30/2012 17:55	679851	(EPA 624)	Chloromethane(Methyl Chloride)	ND	ug/L	0.5	1
10/30/2012	10/30/2012 17:55	679851	(EPA 624)	cis-1,2-Dichloroethylene	ND	ug/L	0.5	1
10/30/2012	10/30/2012 17:55	679851	(EPA 624)	cis-1,3-Dichloropropene	ND	ug/L	0.5	1
10/30/2012	10/30/2012 17:55	679851	(EPA 624)	Dichlorodifluoromethane	ND	ug/L	0.5	1
10/30/2012	10/30/2012 17:55	679851	(EPA 624)	Dichloromethane	ND	ug/L	0.5	1
10/30/2012	10/30/2012 17:55	679851	(EPA 624)	Ethyl benzene	ND	ug/L	0.5	1
10/30/2012	10/30/2012 17:55	679851	(EPA 624)	m,p-Xylenes	ND	ug/L	0.5	1
10/30/2012	10/30/2012 17:55	679851	(EPA 624)	m-Dichlorobenzene (1,3-DCB)	ND	ug/L	0.5	1
10/30/2012	10/30/2012 17:55	679851	(EPA 624)	Methyl Tert-butyl ether (MTBE)	ND	ug/L	0.5	1
10/30/2012	10/30/2012 17:55	679851	(EPA 624)	o-Dichlorobenzene (1,2-DCB)	ND	ug/L	0.5	1
10/30/2012	10/30/2012 17:55	679851	(EPA 624)	o-Xylene	ND	ug/L	0.5	1
10/30/2012	10/30/2012 17:55	679851	(EPA 624)	p-Dichlorobenzene (1,4-DCB)	ND	ug/L	0.5	1
10/30/2012	10/30/2012 17:55	679851	(EPA 624)	Styrene	ND	ug/L	0.5	1
10/30/2012	10/30/2012 17:55	679851	(EPA 624)	Tetrachloroethylene (PCE)	ND	ug/L	0.5	1
10/30/2012	10/30/2012 17:55	679851	(EPA 624)	Tetrahydrofuran	ND	ug/L	10	1
10/30/2012	10/30/2012 17:55	679851	(EPA 624)	Toluene	ND	ug/L	0.5	1
10/30/2012	10/30/2012 17:55	679851	(EPA 624)	Total 1,3-Dichloropropene	ND	ug/L	1	1
10/30/2012	10/30/2012 17:55	679851	(EPA 624)	trans-1,2-Dichloroethylene	ND	ug/L	0.5	1
10/30/2012	10/30/2012 17:55	679851	(EPA 624)	trans-1,3-Dichloropropene	ND	ug/L	0.5	1
10/30/2012	10/30/2012 17:55	679851	(EPA 624)	Trichloroethylene (TCE)	ND	ug/L	0.5	1
10/30/2012	10/30/2012 17:55	679851	(EPA 624)	Trichlorofluoromethane	ND	ug/L	0.5	1

Rounding on totals after summation.
(c) - indicates calculated results

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Laboratory Data
Report: 412567

City of Wichita Falls
Mark Southard
4801 Big Ed Neal Dr
Wichita Falls, TX 76310

Samples Received on:
10/17/2012

Prepared	Analyzed		QC Ref #	Method	Analyte	Result	Units	MRL	Dilution
10/30/2012	10/30/2012	17:55	679851	(EPA 624)	Vinyl Acetate	ND	ug/L	10	1
10/30/2012	10/30/2012	17:55	679851	(EPA 624)	Vinyl chloride (VC)	ND	ug/L	0.3	1
10/30/2012	10/30/2012	17:55	679851	(EPA 624)	1,2-Dichloroethane-d4	97	%		1
10/30/2012	10/30/2012	17:55	679851	(EPA 624)	4-Bromofluorobenzene	100	%		1
10/30/2012	10/30/2012	17:55	679851	(EPA 624)	Toluene-d8	97	%		1
				SM4500-HB - PH (H3=past HT not compliant)					
	11/08/2012	15:01	680331	(SM4500-HB)	PH (H3=past HT not compliant)	7.4	Units	0.1	1
				4500P-E/365.1 - Orthophosphate as P (OPO4)					
	10/17/2012	16:46	677263	(4500P-E/365.1)	Orthophosphate as P	2.5	mg/L	0.05	5
WASTEWATER EFFLUENT - DUP (201211120104)							**Sampled on 10/16/2012 0930**		
				EPA 508 - @508EDD plus Oxyfluorphen					
/5/2012	11/05/2012	00:00		(EPA 508)	2,4-DDD	ND	ug/L	0.05	1
11/5/2012	11/05/2012	00:00		(EPA 508)	2,4-DDE	ND	ug/L	0.05	1
11/5/2012	11/05/2012	00:00		(EPA 508)	2,4-DDT	ND	ug/L	0.02	1
11/5/2012	11/05/2012	00:00		(EPA 508)	4,4-DDE	ND	ug/L	0.01	1
11/5/2012	11/05/2012	00:00		(EPA 508)	4,4-DDT	ND	ug/L	0.02	1
11/5/2012	11/05/2012	00:00		(EPA 508)	4,4-TDE-DDD	ND	ug/L	0.02	1
11/5/2012	11/05/2012	00:00		(EPA 508)	a-BHC	ND	ug/L	0.05	1
11/5/2012	11/05/2012	00:00		(EPA 508)	Alachlor	ND	ug/L	0.1	1
11/5/2012	11/05/2012	00:00		(EPA 508)	Aldrin	ND	ug/L	0.05	1
11/5/2012	11/05/2012	00:00		(EPA 508)	b-BHC	ND	ug/L	0.05	1
11/5/2012	11/05/2012	00:00		(EPA 508)	Benefin	ND	ug/L	0.1	1
11/5/2012	11/05/2012	00:00		(EPA 508)	Captan	ND	ug/L	0.1	1
11/5/2012	11/05/2012	00:00		(EPA 508)	Carbophenothion	ND	ug/L	0.05	1
11/5/2012	11/05/2012	00:00		(EPA 508)	Chlordane	ND	ug/L	0.05	1
11/5/2012	11/05/2012	00:00		(EPA 508)	Chlorothalonil	ND	ug/L	0.05	1
11/5/2012	11/05/2012	00:00		(EPA 508)	d-BHC	ND	ug/L	0.05	1
11/5/2012	11/05/2012	00:00		(EPA 508)	Dicofol	ND	ug/L	0.1	1
11/5/2012	11/05/2012	00:00		(EPA 508)	Dieldrin	ND	ug/L	0.02	1
11/5/2012	11/05/2012	00:00		(EPA 508)	Endosulfan I	ND	ug/L	0.02	1
11/5/2012	11/05/2012	00:00		(EPA 508)	Endosulfan II	ND	ug/L	0.01	1
11/5/2012	11/05/2012	00:00		(EPA 508)	Endosulfan Sulfate	ND	ug/L	0.05	1
11/5/2012	11/05/2012	00:00		(EPA 508)	Endrin	ND	ug/L	0.05	1
11/5/2012	11/05/2012	00:00		(EPA 508)	Endrin Aldehyde	ND	ug/L	0.05	1
11/5/2012	11/05/2012	00:00		(EPA 508)	Endrin Ketone	ND	ug/L	0.05	1
11/5/2012	11/05/2012	00:00		(EPA 508)	g-BHC	ND	ug/L	0.05	1

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Report: 412567

City of Wichita Falls
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Wichita Falls, TX 76310

Samples Received on:
10/17/2012

Prepared	Analyzed	QC Ref #	Method	Analyte	Result	Units	MRL	Dilution
11/5/2012	11/05/2012 00:00		(EPA 508)	Heptachlor	ND	ug/L	0.01	1
11/5/2012	11/05/2012 00:00		(EPA 508)	Heptachlor Epoxide	ND	ug/L	0.01	1
11/5/2012	11/05/2012 00:00		(EPA 508)	hexachlorobenzene	ND	ug/L	0.05	1
11/5/2012	11/05/2012 00:00		(EPA 508)	Methoxychlor	ND	ug/L	0.05	1
11/5/2012	11/05/2012 00:00		(EPA 508)	Nitrofen	ND	ug/L	0.05	1
11/5/2012	11/05/2012 00:00		(EPA 508)	Oxyfluorphen	ND	ug/L	0.05	1
11/5/2012	11/05/2012 00:00		(EPA 508)	PCB-1016	ND	ug/L	0.5	1
11/5/2012	11/05/2012 00:00		(EPA 508)	PCB-1221	ND	ug/L	0.5	1
11/5/2012	11/05/2012 00:00		(EPA 508)	PCB-1232	ND	ug/L	0.5	1
11/5/2012	11/05/2012 00:00		(EPA 508)	PCB-1242	ND	ug/L	0.5	1
11/5/2012	11/05/2012 00:00		(EPA 508)	PCB-1248	ND	ug/L	0.5	1
'/5/2012	11/05/2012 00:00		(EPA 508)	PCB-1254	ND	ug/L	0.5	1
/5/2012	11/05/2012 00:00		(EPA 508)	PCB-1260	ND	ug/L	0.5	1
11/5/2012	11/05/2012 00:00		(EPA 508)	PCNB	ND	ug/L	0.05	1
11/5/2012	11/05/2012 00:00		(EPA 508)	Propachlor	ND	ug/L	0.1	1
11/5/2012	11/05/2012 00:00		(EPA 508)	Toxaphene	ND	ug/L	0.5	1

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QC Ref # 677069 - Sulfonyl Urea Compounds — **Analysis Date: 10/22/2012**
201210170373 WASTEWATER EFFLUENT — Analyzed by: LHZ

QC Ref # 677263 - Orthophosphate as P (OPO4) — **Analysis Date: 10/17/2012**
201210170373 WASTEWATER EFFLUENT — Analyzed by: JMO

QC Ref # 677347 - ICP Metals — **Analysis Date: 10/18/2012**
201210170373 WASTEWATER EFFLUENT — Analyzed by: NINA

QC Ref # 677390 - Hexavalent chromium(Dissolved) — **Analysis Date: 10/18/2012**
201210170373 WASTEWATER EFFLUENT — Analyzed by: TLH

QC Ref # 677518 - ICPMS Metals — **Analysis Date: 10/19/2012**
201210170373 WASTEWATER EFFLUENT — Analyzed by: SXK

QC Ref # 677695 - Phenolic Compounds — **Analysis Date: 10/20/2012**
201210170373 WASTEWATER EFFLUENT — Analyzed by: KXS

QC Ref # 677702 - EDB/DBCP/HAN by EPA 551.1 — **Analysis Date: 10/23/2012**
201210170373 WASTEWATER EFFLUENT — Analyzed by: MCP

QC Ref # 677744 - Chlorophenoxy Herbicides — **Analysis Date: 10/21/2012**
201210170373 WASTEWATER EFFLUENT — Analyzed by: KCL

QC Ref # 678007 - Ammonia Nitrogen — **Analysis Date: 10/22/2012**
201210170373 WASTEWATER EFFLUENT — Analyzed by: QMK

QC Ref # 678231 - Cyanide by manual distillation — **Analysis Date: 10/24/2012**
201210170373 WASTEWATER EFFLUENT — Analyzed by: QMK

QC Ref # 678364 - Volatile Organics by GCMS — **Analysis Date: 10/23/2012**
201210170373 WASTEWATER EFFLUENT — Analyzed by: KAM

QC Ref # 678508 - 8270 Semivolatile, Screen, TIC — **Analysis Date: 10/25/2012**
201210170373 WASTEWATER EFFLUENT — Analyzed by: PAC

QC Ref # 678802 - Semivolatiles by GCMS — **Analysis Date: 10/25/2012**
201210170373 WASTEWATER EFFLUENT — Analyzed by: PAC

QC Ref # 679081 - Asbestos by TEM - >10 microns — **Analysis Date: 10/31/2012**
201210170373 WASTEWATER EFFLUENT — Analyzed by: CJB

QC Ref # 679394 - EPA 525 N/P Pesticides — **Analysis Date: 10/29/2012**
201210170373 WASTEWATER EFFLUENT — Analyzed by: JWC

QC Ref # 679851 - Volatile Organics by EPA 624 — **Analysis Date: 10/30/2012**
201210170373 WASTEWATER EFFLUENT — Analyzed by: KCP

QC Ref # 680331 - PH (H3=past HT not compliant) — **Analysis Date: 11/08/2012**
201210170373 WASTEWATER EFFLUENT — Analyzed by: ADV

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Report: 412567

City of Wichita Falls

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
QC Ref# 677069 - Sulfonyl Urea Compounds by MWH/ LCMSMS						**Analysis Date: 10/22/2012**			
LCS1	Chlorotoluron		1.0	1.04	ug/L	104	(70-130)		
LCS2	Chlorotoluron		1.0	1.06	ug/L	106	(70-130)	30	1.9
MBLK	Chlorotoluron			<0.05	ug/L				
MRL_CHK	Chlorotoluron		0.1	0.0935	ug/L	94	(50-150)		
MS_201210170383	Chlorotoluron	ND	1.0	0.986	ug/L	99	(70-130)		
MSD_201210170383	Chlorotoluron	ND	1.0	1.03	ug/L	103	(70-130)	30	4.4
LCS1	Diuron		1.0	1.19	ug/L	119	(70-130)		
LCS2	Diuron		1.0	1.09	ug/L	109	(70-130)	30	8.8
MBLK	Diuron			<0.2	ug/L				
MRL_CHK	Diuron		0.1	0.0959	ug/L	96	(50-150)		
MS_201210170383	Diuron	ND	1.0	1.16	ug/L	113	(70-130)		
MSD_201210170383	Diuron	ND	1.0	1.21	ug/L	118	(70-130)	30	4.2
LCS1	Isoproturon		1.0	1.03	ug/L	103	(70-130)		
LCS2	Isoproturon		1.0	1.02	ug/L	102	(70-130)	30	0.98
MBLK	Isoproturon			<0.05	ug/L				
MRL_CHK	Isoproturon		0.1	0.0924	ug/L	92	(50-150)		
MS_201210170383	Isoproturon	ND	1.0	1.03	ug/L	103	(70-130)		
MSD_201210170383	Isoproturon	ND	1.0	1.00	ug/L	100	(70-130)	30	3.0
LCS1	Linuron		1.0	1.12	ug/L	112	(70-130)		
LCS2	Linuron		1.0	0.930	ug/L	93	(70-130)	30	19
MBLK	Linuron			<0.05	ug/L				
MRL_CHK	Linuron		0.1	0.115	ug/L	115	(50-150)		
MS_201210170383	Linuron	ND	1.0	0.995	ug/L	100	(70-130)		
MSD_201210170383	Linuron	ND	1.0	1.13	ug/L	113	(70-130)	30	13
LCS1	Metazachlor		1.0	1.02	ug/L	102	(70-130)		
LCS2	Metazachlor		1.0	1.03	ug/L	103	(70-130)	30	0.98
MBLK	Metazachlor			<0.05	ug/L				
MRL_CHK	Metazachlor		0.1	0.0728	ug/L	73	(50-150)		
MS_201210170383	Metazachlor	ND	1.0	0.996	ug/L	100	(70-130)		
MSD_201210170383	Metazachlor	ND	1.0	0.926	ug/L	93	(70-130)	30	7.3
LCS1	Metoxuron		1.0	1.09	ug/L	109	(70-130)		
LCS2	Metoxuron		1.0	1.03	ug/L	103	(70-130)	30	5.7
MBLK	Metoxuron			<0.05	ug/L				
MRL_CHK	Metoxuron		0.1	0.0729	ug/L	73	(50-150)		
MS_201210170383	Metoxuron	ND	1.0	0.948	ug/L	95	(70-130)		
MSD_201210170383	Metoxuron	ND	1.0	0.928	ug/L	93	(70-130)	30	2.1

Spike recovery is already corrected for native results.
Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.
Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.
RPD not calculated for LCS2 when different a concentration than LCS1 is used.
RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level).
(S) - Indicates surrogate compound.
(I) - Indicates internal standard compound.

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Report: 412567

City of Wichita Falls

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
LCS1	Monuron			93.4	%	93	(70-130)		
LCS2	Monuron			87.4	%	87	(70-130)		
MBLK	Monuron			96.5	%				
MRL_CHK	Monuron			96.4	%	96	(70-130)		
MS_201210170383	Monuron	88		95.2	%	95	(70-130)		
MSD_201210170383	Monuron	88		87.8	%	88	(70-130)		
LCS1	Propanil		1.0	0.951	ug/L	95	(70-130)		
LCS2	Propanil		1.0	0.957	ug/L	96	(70-130)	30	0.63
MBLK	Propanil			<0.05	ug/L				
MRL_CHK	Propanil		0.1	0.0959	ug/L	96	(50-150)		
MS_201210170383	Propanil	ND	1.0	1.06	ug/L	106	(70-130)		
MSD_201210170383	Propanil	ND	1.0	1.08	ug/L	108	(70-130)	30	1.9
LCS1	Pyriproxyfen		1.0	1.28	ug/L	128	(70-130)		
LCS2	Pyriproxyfen		1.0	1.29	ug/L	129	(70-130)	30	0.78
MBLK	Pyriproxyfen			<0.05	ug/L				
RL_CHK	Pyriproxyfen		0.1	0.128	ug/L	128	(50-150)		
MS_201210170383	Pyriproxyfen	ND	1.0	1.34	ug/L	**133**	(70-130)		
MSD_201210170383	Pyriproxyfen	ND	1.0	1.30	ug/L	128	(70-130)	30	3.0
QC Ref# 677263 - Orthophosphate as P (OPO4) by 4500P-E/365.1						**Analysis Date: 10/17/2012**			
LCS1	Orthophosphate as P		0.25	0.265	mg/L	106	(90-110)		
LCS2	Orthophosphate as P		0.25	0.267	mg/L	107	(90-110)	20	0.75
MBLK	Orthophosphate as P			<0.01	mg/L				
MRL_CHK	Orthophosphate as P		0.01	0.0110	mg/L	110	(50-150)		
MS_201210170369	Orthophosphate as P	0.059	0.5	0.556	mg/L	99	(90-110)		
MSD_201210170369	Orthophosphate as P	0.059	0.5	0.557	mg/L	100	(90-110)	20	0.18
QC Ref# 677347 - ICP Metals by EPA 200.7						**Analysis Date: 10/18/2012**			
LCS1	Silica		21	23.2	mg/L	108	(85-115)		
LCS2	Silica		21	22.9	mg/L	107	(85-115)	20	1.3
MBLK	Silica			<0.25	mg/L				
MRL_CHK	Silica		0.42	0.460	mg/L	109	(50-150)		
MS_201210170197	Silica	19	21	43.0	mg/L	111	(70-130)		
MS2_201210170242	Silica	37	21	60.4	mg/L	107	(70-130)		
MSD_201210170197	Silica	19	21	41.4	mg/L	104	(70-130)	20	3.8
MSD2_201210170242	Silica	37	21	59.4	mg/L	103	(70-130)	20	1.7
QC Ref# 677390 - Hexavalent chromium(Dissolved) by EPA 218.6						**Analysis Date: 10/18/2012**			
LCS1	Hexavalent chromium(Dissolved)		2.0	2.00	ug/L	100	(90-110)		
LCS2	Hexavalent chromium(Dissolved)		2.0	1.97	ug/L	99	(90-110)		

Spike recovery is already corrected for native results.
Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.
teria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.
D not calculated for LCS2 when different a concentration than LCS1 is used.
D not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level).
(S) - Indicates surrogate compound.
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QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MBLK	Hexavalent chromium(Dissolved)			<0.020	ug/L				
MRL_CHK	Hexavalent chromium(Dissolved)		0.02	0.0150	ug/L	75	(50-150)		
MS_201210170377	Hexavalent chromium(Dissolved)	ND	2.0	2.08	ug/L	104	(90-110)		
MS_201210180173	Hexavalent chromium(Dissolved)	0.090	2.0	2.15	ug/L	103	(90-110)		
MSD_201210180173	Hexavalent chromium(Dissolved)	0.090	2.0	2.20	ug/L	106	(90-110)	20	2.3
MSD_201210170377	Hexavalent chromium(Dissolved)	ND	2.0	2.08	ug/L	104	(90-110)	20	0.0
QC Ref# 677518 - ICPMS Metals by EPA 200.8						**Analysis Date: 10/19/2012**			
LCS1	Chromium Total ICAP/MS		100	106	ug/L	106	(85-115)		
LCS2	Chromium Total ICAP/MS		100	106	ug/L	106	(85-115)	20	0.0
MBLK	Chromium Total ICAP/MS			<1	ug/L				
MRL_CHK	Chromium Total ICAP/MS		1.0	1.09	ug/L	109	(50-150)		
MS_201210170372	Chromium Total ICAP/MS	ND	100	106	ug/L	104	(70-130)		
MS2_201210170373	Chromium Total ICAP/MS	ND	100	106	ug/L	106	(70-130)		
MSD_201210170372	Chromium Total ICAP/MS	ND	100	101	ug/L	99	(70-130)	20	4.8
'SD2_201210170373	Chromium Total ICAP/MS	ND	100	99.7	ug/L	100	(70-130)	20	6.1
CS1	Nickel Total ICAP/MS		50	52.5	ug/L	105	(85-115)		
LCS2	Nickel Total ICAP/MS		50	52.2	ug/L	104	(85-115)	20	0.57
MBLK	Nickel Total ICAP/MS			<5	ug/L				
MRL_CHK	Nickel Total ICAP/MS		5.0	5.32	ug/L	106	(50-150)		
MS_201210170372	Nickel Total ICAP/MS	ND	50	50.9	ug/L	100	(70-130)		
MS2_201210170373	Nickel Total ICAP/MS	ND	50	53.4	ug/L	98	(70-130)		
MSD_201210170372	Nickel Total ICAP/MS	ND	50	47.8	ug/L	94	(70-130)	20	6.3
MSD2_201210170373	Nickel Total ICAP/MS	ND	50	50.9	ug/L	93	(70-130)	20	5.0
QC Ref# 677695 - Phenolic Compounds by MWH 420/SW9066						**Analysis Date: 10/20/2012**			
LCS1	Phenolic Compounds		0.08	0.0796	mg/L	100	(90-110)		
LCS2	Phenolic Compounds		0.08	0.0802	mg/L	100	(90-110)	20	0.75
MBLK	Phenolic Compounds			<0.01	mg/L				
MRL_CHK	Phenolic Compounds		0.01	0.0102	mg/L	102	(50-150)		
MS_201210160541	Phenolic Compounds		0.08	0.0665	mg/L	**81**	(90-110)		
MS_201210150136	Phenolic Compounds	ND	0.08	0.0817	mg/L	101	(90-110)		
MSD_201210150136	Phenolic Compounds	ND	0.08	0.0819	mg/L	102	(90-110)	20	0.24
MSD_201210160541	Phenolic Compounds		0.08	0.0330	mg/L	**40**	(90-110)	20	**67**
RLLOW	Phenolic Compounds		0.005	0.00617	mg/L	123	(50-150)		
QC Ref# 677702 - EDB/DBCP/HAN by EPA 551.1 by EPA 551.1						**Analysis Date: 10/22/2012**			
CCC3	1,2-Dibromopropane (S)			101	%	101	(80-120)		
CCCM2	1,2-Dibromopropane (S)			113	%	113	(80-120)		
DUP1_201210130088	1,2-Dibromopropane (S)			96.2	%	96	(80-120)		

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.^D not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level).
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Laboratory QC
Report: 412567

City of Wichita Falls

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
DUP2_201210180093	1,2-Dibromopropane (S)			88.2	%	88	(80-120)		
MBLK	1,2-Dibromopropane (S)			99.4	%	99	(80-120)		
MRL_CHK	1,2-Dibromopropane (S)			80.8	%	81	(80-120)		
MS_201210170475	1,2-Dibromopropane (S)			87.6	%	88	(80-120)		
MS2_201210180184	1,2-Dibromopropane (S)			103	%	103	(80-120)		
CCC3	Dibromochloropropane (DBCP)		0.25	0.252	ug/L	101	(80-120)		
CCCM2	Dibromochloropropane (DBCP)		0.05	0.0438	ug/L	88	(80-120)		
DUP1_201210130088	Dibromochloropropane (DBCP)	ND		ND	ug/L		(0-20)		
DUP2_201210180093	Dibromochloropropane (DBCP)	ND		ND	ug/L		(0-20)		
MBLK	Dibromochloropropane (DBCP)			<0.01	ug/L				
MRL_CHK	Dibromochloropropane (DBCP)		0.01	0.00640	ug/L	64	(50-150)		
MS_201210170475	Dibromochloropropane (DBCP)	ND	0.25	0.233	ug/L	93	(80-120)		
MS2_201210180184	Dibromochloropropane (DBCP)	0.015	0.05	0.0649	ug/L	100	(80-120)		
CCC3	Ethylene Dibromide (EDB)		0.25	0.254	ug/L	101	(80-120)		
CCCM2	Ethylene Dibromide (EDB)		0.05	0.0536	ug/L	107	(80-120)		
JP1_201210130088	Ethylene Dibromide (EDB)	ND		ND	ug/L		(0-20)		
DUP2_201210180093	Ethylene Dibromide (EDB)	ND		ND	ug/L		(0-20)		
MBLK	Ethylene Dibromide (EDB)			<0.01	ug/L				
MRL_CHK	Ethylene Dibromide (EDB)		0.01	0.0135	ug/L	135	(50-150)		
MS_201210170475	Ethylene Dibromide (EDB)	ND	0.25	0.218	ug/L	87	(80-120)		
MS2_201210180184	Ethylene Dibromide (EDB)	ND	0.05	0.0517	ug/L	103	(80-120)		
QC Ref# 677744 - Chlorophenoxy Herbicides by EPA 515.4						**Analysis Date: 10/21/2012**			
CCCH	2,4,5-TP (Silvex)		4.0	4.01	ug/L	100	(70-130)		
CCCM	2,4,5-TP (Silvex)		1.0	1.06	ug/L	106	(70-130)		
MBLK	2,4,5-TP (Silvex)			<0.1	ug/L				
MRL_CHK	2,4,5-TP (Silvex)		0.2	0.258	ug/L	129	(50-150)		
MS1_201210160615	2,4,5-TP (Silvex)	ND	3.0	3.04	ug/L	101	(70-130)		
MSD1_201210160615	2,4,5-TP (Silvex)	ND	3.0	2.97	ug/L	99	(70-130)	30	2.3
CCCH	2,4-D		2.0	2.09	ug/L	104	(70-130)		
CCCM	2,4-D		0.5	0.356	ug/L	71	(70-130)		
MBLK	2,4-D			<0.05	ug/L				
MRL_CHK	2,4-D		0.1	0.0795	ug/L	80	(50-150)		
MS1_201210160615	2,4-D	ND	1.5	1.38	ug/L	92	(70-130)		
MSD1_201210160615	2,4-D	ND	1.5	1.61	ug/L	107	(70-130)	30	15
CCCH	Bentazon		10	10.6	ug/L	106	(70-130)		
CCCM	Bentazon		2.5	2.36	ug/L	95	(70-130)		
MBLK	Bentazon			<0.25	ug/L				
MRL_CHK	Bentazon		0.5	0.360	ug/L	72	(50-150)		

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QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MS1_201210160615	Bentazon	ND	7.5	7.76	ug/L	103	(70-130)		
MSD1_201210160615	Bentazon	ND	7.5	7.80	ug/L	104	(70-130)	30	0.51
CCCH	Dalapon		20	20.0	ug/L	100	(70-130)		
CCCM	Dalapon		5.0	5.30	ug/L	106	(70-130)		
MBLK	Dalapon			<0.5	ug/L				
MRL_CHK	Dalapon		1.0	1.03	ug/L	103	(50-150)		
MS1_201210160615	Dalapon	ND	15	15.2	ug/L	101	(70-130)		
MSD1_201210160615	Dalapon	ND	15	15.1	ug/L	101	(70-130)	30	0.66
CCCH	Dinoseb		4.0	3.82	ug/L	96	(70-130)		
CCCM	Dinoseb		1.0	1.02	ug/L	102	(70-130)		
MBLK	Dinoseb			<0.1	ug/L				
MRL_CHK	Dinoseb		0.2	0.167	ug/L	84	(50-150)		
MS1_201210160615	Dinoseb	ND	3.0	3.03	ug/L	101	(70-130)		
MSD1_201210160615	Dinoseb	ND	3.0	2.98	ug/L	99	(70-130)	30	1.7
CCCH	Pentachlorophenol		0.8	0.797	ug/L	100	(70-130)		
CCCM	Pentachlorophenol		0.2	0.206	ug/L	103	(70-130)		
MBLK	Pentachlorophenol			<0.02	ug/L				
MRL_CHK	Pentachlorophenol		0.04	0.0420	ug/L	105	(50-150)		
MS1_201210160615	Pentachlorophenol	ND	0.6	0.598	ug/L	100	(70-130)		
MSD1_201210160615	Pentachlorophenol	ND	0.6	0.587	ug/L	98	(70-130)	30	1.9
CCCH	Picloram		2.0	1.98	ug/L	99	(70-130)		
CCCM	Picloram		0.5	0.471	ug/L	94	(70-130)		
MBLK	Picloram			<0.05	ug/L				
MRL_CHK	Picloram		0.1	0.133	ug/L	133	(50-150)		
MS1_201210160615	Picloram	ND	1.5	1.55	ug/L	103	(70-130)		
MSD1_201210160615	Picloram	ND	1.5	1.54	ug/L	103	(70-130)	30	0.65
QC Ref# 678007 - Ammonia Nitrogen by EPA 350.1						**Analysis Date: 10/22/2012**			
LCS1	Ammonia Nitrogen		1.0	1.04	mg/L	104	(90-110)		
LCS2	Ammonia Nitrogen		1.0	1.04	mg/L	104	(90-110)	20	0.0
MBLK	Ammonia Nitrogen			<0.05	mg/L				
MRL_CHK	Ammonia Nitrogen		0.05	0.0367	mg/L	73	(50-112)		
MS_201210170260	Ammonia Nitrogen	0.68	1.0	1.32	mg/L	**65**	(90-110)		
MS_201210160164	Ammonia Nitrogen	0.059	1.0	1.06	mg/L	100	(90-110)		
MSD_201210170260	Ammonia Nitrogen	0.68	1.0	1.33	mg/L	**66**	(90-110)	20	0.76
MSD_201210160164	Ammonia Nitrogen	0.059	1.0	1.04	mg/L	98	(90-110)	20	1.9
QC Ref# 678231 - Cyanide by manual distillation by EPA 335.4						**Analysis Date: 10/24/2012**			
LCS1	Cyanide by manual distillation		0.1	0.0992	mg/L	99	(90-110)		

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QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
LCS2	Cyanide by manual distillation		0.1	0.0992	mg/L	99	(90-110)	20	0.0
MBLK	Cyanide by manual distillation			<0.005	mg/L				
MRL_CHK	Cyanide by manual distillation		0.005	0.00490	mg/L	98	(50-150)		
MS_201210240298	Cyanide by manual distillation	ND	0.1	0.0950	mg/L	95	(90-110)		
MS_201210180262	Cyanide by manual distillation	ND	0.1	0.0907	mg/L	91	(90-110)		
MSD_201210180262	Cyanide by manual distillation	ND	0.1	0.0933	mg/L	93	(90-110)	20	2.8
MSD_201210240298	Cyanide by manual distillation	ND	0.1	0.0894	mg/L	89	(90-110)	20	6.1
QC Ref# 678364 - Volatile Organics by GCMS by EPA 8260						**Analysis Date: 10/23/2012**			
LCS1	1,2-Dichloroethane-d4 (S)			102	%	102	(70-130)		
LCS2	1,2-Dichloroethane-d4 (S)			102	%	102	(70-130)		
MBLK	1,2-Dichloroethane-d4 (S)			103	%	103	(70-130)		
MRL_CHK	1,2-Dichloroethane-d4 (S)			105	%	105	(70-130)		
MS_201210240428	1,2-Dichloroethane-d4 (S)			102	%	102	(70-130)		
MSD_201210240428	1,2-Dichloroethane-d4 (S)			103	%	103	(70-130)		
CS1	2-Chloroethylvinylether		5.0	5.83	ug/L	117	(70-130)		
CS2	2-Chloroethylvinylether		5.0	5.22	ug/L	104	(70-130)	20	11
MBLK	2-Chloroethylvinylether			<0.5	ug/L				
MRL_CHK	2-Chloroethylvinylether		0.5	0.670	ug/L	134	(50-150)		
MS_201210240428	2-Chloroethylvinylether	ND	10	11.5	ug/L	115	(70-130)		
MSD_201210240428	2-Chloroethylvinylether	ND	10	11.1	ug/L	111	(70-130)	20	3.5
LCS1	4-Bromofluorobenzene (S)			98.4	%	98	(70-130)		
LCS2	4-Bromofluorobenzene (S)			102	%	102	(70-130)		
MBLK	4-Bromofluorobenzene (S)			97.8	%	98	(70-130)		
MRL_CHK	4-Bromofluorobenzene (S)			109	%	109	(70-130)		
MS_201210240428	4-Bromofluorobenzene (S)			99.8	%	100	(70-130)		
MSD_201210240428	4-Bromofluorobenzene (S)			99.0	%	99	(70-130)		
LCS1	Toluene-d8 (S)			101	%	101	(70-130)		
LCS2	Toluene-d8 (S)			101	%	101	(70-130)		
MBLK	Toluene-d8 (S)			98.8	%	99	(70-130)		
MRL_CHK	Toluene-d8 (S)			100	%	100	(70-130)		
MS_201210240428	Toluene-d8 (S)			101	%	101	(70-130)		
MSD_201210240428	Toluene-d8 (S)			101	%	101	(70-130)		
QC Ref# 678799 - Semivolatiles by GCMS by EPA 525.2						**Analysis Date: 10/29/2012**			
MRL_CHK	1,3-Dimethyl-2-nitrobenzene (S)			97.6	%	98	(70-130)		
MRL_CHK	2,4-Dinitrotoluene		0.1	0.100	ug/L	100	(50-150)		
MRL_CHK	2,6-Dinitrotoluene		0.1	0.0950	ug/L	95	(50-150)		
MRL_CHK	4,4-DDD		0.1	0.0980	ug/L	98	(50-150)		

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QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MRL_CHK	4,4-DDE		0.1	0.0990	ug/L	99	(50-150)		
MRL_CHK	4,4-DDT		0.1	0.105	ug/L	105	(50-150)		
MRL_CHK	Acenaphthene		0.1	0.0910	ug/L	91	(50-150)		
MRL_CHK	Acenaphthene-d10 (I)			73.2	%	73	(50-150)		
MRL_CHK	Acenaphthylene		0.1	0.0560	ug/L	56	(50-150)		
MRL_CHK	Acetochlor		0.05	0.0530	ug/L	106	(50-150)		
MRL_CHK	Alachlor		0.05	0.0560	ug/L	112	(50-150)		
MRL_CHK	Aldrin		0.05	0.0270	ug/L	54	(50-150)		
MRL_CHK	Alpha-BHC		0.1	0.0990	ug/L	99	(50-150)		
MRL_CHK	alpha-Chlordane		0.05	0.0450	ug/L	90	(50-150)		
MRL_CHK	Anthracene		0.02	0.0200	ug/L	100	(50-150)		
MRL_CHK	Atrazine		0.05	0.0680	ug/L	136	(50-150)		
MRL_CHK	Benz(a)Anthracene		0.05	0.0590	ug/L	118	(50-150)		
MRL_CHK	Benzo(a)pyrene		0.02	0.0230	ug/L	115	(50-150)		
MRL_CHK	Benzo(b)Fluoranthene		0.02	0.0240	ug/L	120	(50-150)		
RL_CHK	Benzo(g,h,i)Perylene		0.05	0.0530	ug/L	106	(50-150)		
MRL_CHK	Benzo(k)Fluoranthene		0.02	0.0180	ug/L	90	(50-150)		
MRL_CHK	Beta-BHC		0.1	0.108	ug/L	108	(50-150)		
MRL_CHK	Bromacil		0.1	0.129	ug/L	129	(50-150)		
MRL_CHK	Butachlor		0.05	0.0560	ug/L	112	(50-150)		
MRL_CHK	Butylbenzylphthalate		0.15	0.202	ug/L	135	(50-150)		
MRL_CHK	Caffeine by method 525mod		0.05	0.0440	ug/L	88	(50-150)		
MRL_CHK	Chlorobenzilate		0.1	0.108	ug/L	108	(50-150)		
MRL_CHK	Chloroneb		0.1	0.105	ug/L	105	(50-150)		
MRL_CHK	Chlorothalonil(Draconil,Bravo)		0.05	0.0480	ug/L	96	(50-150)		
MRL_CHK	Chlorpyrifos (Dursban)		0.05	0.0530	ug/L	106	(50-150)		
MRL_CHK	Chrysene		0.02	0.0200	ug/L	100	(50-150)		
MRL_CHK	Chrysene-d12 (I)			76.1	%	76	(50-150)		
MRL_CHK	Delta-BHC		0.1	0.0890	ug/L	89	(50-150)		
MRL_CHK	Di-(2-Ethylhexyl)adipate		0.3	0.286	ug/L	95	(50-150)		
MRL_CHK	Di(2-Ethylhexyl)phthalate		0.6	0.622	ug/L	104	(50-150)		
MRL_CHK	Diazinon (Qualitative)		0.1	0.0870	ug/L	87	(50-150)		
MRL_CHK	Dibenz(a,h)Anthracene		0.05	0.0620	ug/L	124	(50-150)		
MRL_CHK	Dichlorvos (DDVP)		0.05	0.0550	ug/L	110	(50-150)		
MRL_CHK	Dieldrin		0.1	0.0870	ug/L	87	(50-150)		
MRL_CHK	Diethylphthalate		0.15	0.178	ug/L	119	(50-150)		
MRL_CHK	Dimethoate		0.1	0.0940	ug/L	94	(35-100)		
MRL_CHK	Dimethylphthalate		0.3	0.295	ug/L	98	(50-150)		

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QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MRL_CHK	Di-n-Butylphthalate		0.3	0.325	ug/L	108	(50-150)		
MRL_CHK	Di-N-octylphthalate		0.1	0.103	ug/L	103	(50-150)		
MRL_CHK	Endosulfan I (Alpha)		0.1	0.106	ug/L	106	(50-150)		
MRL_CHK	Endosulfan II (Beta)		0.1	0.124	ug/L	124	(50-150)		
MRL_CHK	Endosulfan Sulfate		0.1	0.103	ug/L	103	(50-150)		
MRL_CHK	Endrin		0.1	0.108	ug/L	108	(50-150)		
MRL_CHK	Endrin Aldehyde		0.1	0.0970	ug/L	97	(50-150)		
MRL_CHK	EPTC		0.1	0.0940	ug/L	94	(50-150)		
MRL_CHK	Fluoranthene		0.05	0.0530	ug/L	106	(50-150)		
MRL_CHK	Fluorene		0.05	0.0480	ug/L	96	(50-150)		
MRL_CHK	gamma-Chlordane		0.05	0.0500	ug/L	100	(50-150)		
MRL_CHK	Heptachlor		0.04	0.0330	ug/L	83	(50-150)		
MRL_CHK	Heptachlor Epoxide (isomer B)		0.05	0.0550	ug/L	110	(50-150)		
MRL_CHK	Hexachlorobenzene		0.05	0.0550	ug/L	110	(50-150)		
MRL_CHK	Hexachlorocyclopentadiene		0.05	0.0350	ug/L	70	(50-150)		
RL_CHK	Indeno(1,2,3,c,d)Pyrene		0.05	0.0550	ug/L	110	(50-150)		
MRL_CHK	Isophorone		0.1	0.103	ug/L	103	(50-150)		
MRL_CHK	Lindane		0.04	0.0400	ug/L	100	(50-150)		
MRL_CHK	Malathion		0.1	0.137	ug/L	137	(50-150)		
MRL_CHK	Methoxychlor		0.1	0.119	ug/L	119	(50-150)		
MRL_CHK	Metolachlor		0.05	0.0660	ug/L	132	(50-150)		
MRL_CHK	Metribuzin		0.05	0.0510	ug/L	102	(50-150)		
MRL_CHK	Molinate		0.1	0.0930	ug/L	93	(50-150)		
MRL_CHK	Naphthalene		0.1	0.0960	ug/L	96	(50-150)		
MRL_CHK	Parathion		0.1	0.122	ug/L	122	(50-150)		
MRL_CHK	Pendimethalin		0.1	0.116	ug/L	116	(50-150)		
MRL_CHK	Pentachlorophenol		0.5	0.849	ug/L	**170**	(50-150)		
MRL_CHK	Permethrin (mixed isomers)		0.15	0.270	ug/L	**180**	(50-150)		
MRL_CHK	Perylene-d12 (S)			77.9	%	78	(70-130)		
MRL_CHK	Phenanthrene		0.02	0.0220	ug/L	110	(50-150)		
MRL_CHK	Phenanthrene-d10 (I)			79.7	%	80	(50-150)		
MRL_CHK	Propachlor		0.05	0.0750	ug/L	150	(50-150)		
MRL_CHK	Pyrene		0.05	0.0500	ug/L	100	(50-150)		
MRL_CHK	Simazine		0.05	0.0710	ug/L	142	(50-150)		
MRL_CHK	Terbacil		0.1	0.122	ug/L	122	(50-150)		
MRL_CHK	Terbuthylazine		0.1	0.113	ug/L	113	(50-150)		
MRL_CHK	Thiobencarb		0.1	0.0920	ug/L	92	(50-150)		
MRL_CHK	trans-Nonachlor		0.05	0.0440	ug/L	88	(50-150)		

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[1]Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.
[2]RD not calculated for LCS2 when different a concentration than LCS1 is used.
[3]RD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level).
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Laboratory QC
Report: 412567

City of Wichita Falls

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MRL_CHK	Trifluralin		0.1	0.116	ug/L	116	(50-150)		
MRL_CHK	Triphenylphosphate (S)			115	%	115	(70-130)		
QC Ref# 678802 - Semivolatiles by GCMS by EPA 525.2						**Analysis Date: 10/25/2012**			
LCS1	1,3-Dimethyl-2-nitrobenzene (S)			96.3	%	96	(70-130)		
LCS2	1,3-Dimethyl-2-nitrobenzene (S)			97.2	%	97	(70-130)		
MBLK	1,3-Dimethyl-2-nitrobenzene (S)			96.2	%	96	(70-130)		
MS_201210170374	1,3-Dimethyl-2-nitrobenzene (S)			100	%	101	(70-130)		
LCS1	2,4-Dinitrotoluene		2.0	2.10	ug/L	105	(70-130)		
LCS2	2,4-Dinitrotoluene		2.0	2.01	ug/L	100	(70-130)	20	4.4
MBLK	2,4-Dinitrotoluene			<0.05	ug/L				
MS_201210170374	2,4-Dinitrotoluene		2.0	2.05	ug/L	102	(70-130)		
LCS1	2,6-Dinitrotoluene		2.0	2.03	ug/L	101	(70-130)		
LCS2	2,6-Dinitrotoluene		2.0	1.96	ug/L	98	(70-130)	20	3.5
MBLK	2,6-Dinitrotoluene			<0.05	ug/L				
`*S_201210170374	2,6-Dinitrotoluene		2.0	1.94	ug/L	97	(70-130)		
;S1	4,4-DDD		2.0	2.05	ug/L	102	(70-130)		
LCS2	4,4-DDD		2.0	1.96	ug/L	98	(70-130)	20	4.5
MBLK	4,4-DDD			<0.05	ug/L				
MS_201210170374	4,4-DDD		2.0	1.93	ug/L	97	(70-130)		
LCS1	4,4-DDE		2.0	1.93	ug/L	96	(70-130)		
LCS2	4,4-DDE		2.0	1.85	ug/L	92	(70-130)	20	4.2
MBLK	4,4-DDE			<0.05	ug/L				
MS_201210170374	4,4-DDE		2.0	1.85	ug/L	92	(70-130)		
LCS1	4,4-DDT		2.0	2.07	ug/L	104	(70-130)		
LCS2	4,4-DDT		2.0	1.97	ug/L	99	(70-130)	20	5.0
MBLK	4,4-DDT			<0.05	ug/L				
MS_201210170374	4,4-DDT		2.0	1.95	ug/L	98	(70-130)		
LCS1	Acenaphthene		2.0	1.88	ug/L	94	(70-130)		
LCS2	Acenaphthene		2.0	1.83	ug/L	92	(70-130)	20	2.7
MBLK	Acenaphthene			<0.05	ug/L				
MS_201210170374	Acenaphthene		2.0	1.84	ug/L	92	(70-130)		
LCS1	Acenaphthene-d10 (I)			91.5	%	92	(50-150)		
LCS2	Acenaphthene-d10 (I)			84.8	%	85	(50-150)		
MBLK	Acenaphthene-d10 (I)			80.5	%	81	(50-150)		
MS_201210170374	Acenaphthene-d10 (I)			80.1	%	80	(50-150)		
LCS1	Acenaphthylene		2.0	1.51	ug/L	75	(70-130)		
LCS2	Acenaphthylene		2.0	1.46	ug/L	73	(70-130)	20	3.4
MBLK	Acenaphthylene			<0.05	ug/L				

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D not calculated for LCS2 when different a concentration than LCS1 is used.
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Report: 412567

City of Wichita Falls

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MS_201210170374	Acenaphthylene		2.0	1.66	ug/L	83	(70-130)		
LCS1	Acetochlor		2.0	1.84	ug/L	92	(70-130)		
LCS2	Acetochlor		2.0	1.79	ug/L	89	(70-130)	20	2.8
MBLK	Acetochlor			<0.05	ug/L				
MS_201210170374	Acetochlor		2.0	1.72	ug/L	86	(70-130)		
LCS1	Alachlor		2.0	1.90	ug/L	95	(70-130)		
LCS2	Alachlor		2.0	1.83	ug/L	92	(70-130)	20	3.8
MBLK	Alachlor			<0.025	ug/L				
MS_201210170374	Alachlor		2.0	1.82	ug/L	91	(70-130)		
LCS1	Aldrin		2.0	1.43	ug/L	72	(70-130)		
LCS2	Aldrin		2.0	1.35	ug/L	67	(70-130)	20	5.8
MBLK	Aldrin			<0.025	ug/L				
MS_201210170374	Aldrin		2.0	1.42	ug/L	71	(70-130)		
LCS1	Alpha-BHC		2.0	2.02	ug/L	101	(70-130)		
LCS2	Alpha-BHC		2.0	1.96	ug/L	98	(70-130)	20	3.0
MBLK	Alpha-BHC			<0.05	ug/L				
MS_201210170374	Alpha-BHC		2.0	1.96	ug/L	98	(70-130)		
LCS1	alpha-Chlordane		2.0	1.92	ug/L	96	(70-130)		
LCS2	alpha-Chlordane		2.0	1.77	ug/L	88	(70-130)	20	8.1
MBLK	alpha-Chlordane			<0.025	ug/L				
MS_201210170374	alpha-Chlordane		2.0	1.76	ug/L	88	(70-130)		
LCS1	Anthracene		2.0	1.90	ug/L	95	(70-130)		
LCS2	Anthracene		2.0	1.79	ug/L	90	(70-130)	20	6.0
MBLK	Anthracene			<0.02	ug/L				
MS_201210170374	Anthracene		2.0	1.83	ug/L	92	(70-130)		
LCS1	Atrazine		2.0	2.15	ug/L	107	(70-130)		
LCS2	Atrazine		2.0	2.03	ug/L	102	(70-130)	20	5.7
MBLK	Atrazine			<0.025	ug/L				
MS_201210170374	Atrazine	ND	2.0	2.02	ug/L	101	(70-130)		
LCS1	Benz(a)Anthracene		2.0	2.08	ug/L	104	(70-130)		
LCS2	Benz(a)Anthracene		2.0	1.99	ug/L	100	(70-130)	20	4.9
MBLK	Benz(a)Anthracene			<0.025	ug/L				
MS_201210170374	Benz(a)Anthracene		2.0	1.95	ug/L	97	(70-130)		
LCS1	Benzo(a)pyrene		2.0	2.15	ug/L	107	(70-130)		
LCS2	Benzo(a)pyrene		2.0	2.00	ug/L	100	(70-130)	20	7.2
MBLK	Benzo(a)pyrene			<0.01	ug/L				
MS_201210170374	Benzo(a)pyrene		2.0	1.94	ug/L	97	(70-130)		
LCS1	Benzo(b)Fluoranthene		2.0	2.12	ug/L	106	(70-130)		

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QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
LCS2	Benzo(b)Fluoranthene		2.0	2.01	ug/L	100	(70-130)	20	5.3
MBLK	Benzo(b)Fluoranthene			<0.01	ug/L				
MS_201210170374	Benzo(b)Fluoranthene		2.0	1.97	ug/L	99	(70-130)		
LCS1	Benzo(g,h,i)Perylene		2.0	2.42	ug/L	121	(70-130)		
LCS2	Benzo(g,h,i)Perylene		2.0	2.27	ug/L	113	(70-130)	20	6.4
MBLK	Benzo(g,h,i)Perylene			<0.025	ug/L				
MS_201210170374	Benzo(g,h,i)Perylene		2.0	2.09	ug/L	104	(70-130)		
LCS1	Benzo(k)Fluoranthene		2.0	2.21	ug/L	110	(70-130)		
LCS2	Benzo(k)Fluoranthene		2.0	2.09	ug/L	105	(70-130)	20	5.6
MBLK	Benzo(k)Fluoranthene			<0.01	ug/L				
MS_201210170374	Benzo(k)Fluoranthene		2.0	1.99	ug/L	100	(70-130)		
LCS1	Beta-BHC		2.0	2.09	ug/L	105	(70-130)		
LCS2	Beta-BHC		2.0	2.03	ug/L	101	(70-130)	20	2.9
MBLK	Beta-BHC			<0.05	ug/L				
MS_201210170374	Beta-BHC		2.0	1.99	ug/L	100	(70-130)		
CS1	Bromacil		2.0	2.10	ug/L	105	(70-130)		
LCS2	Bromacil		2.0	1.99	ug/L	99	(70-130)	20	5.4
MBLK	Bromacil			<0.05	ug/L				
MS_201210170374	Bromacil		2.0	1.98	ug/L	99	(70-130)		
LCS1	Butachlor		2.0	2.05	ug/L	102	(70-130)		
LCS2	Butachlor		2.0	1.99	ug/L	99	(70-130)	20	3.0
MBLK	Butachlor			<0.025	ug/L				
MS_201210170374	Butachlor		2.0	1.95	ug/L	98	(70-130)		
LCS1	Butylbenzylphthalate		2.0	2.18	ug/L	109	(70-130)		
LCS2	Butylbenzylphthalate		2.0	2.04	ug/L	102	(70-130)	20	6.2
MBLK	Butylbenzylphthalate			<0.15	ug/L				
MS_201210170374	Butylbenzylphthalate		2.0	2.02	ug/L	101	(70-130)		
LCS1	Caffeine by method 525mod		2.0	1.54	ug/L	77	(45-137)		
LCS2	Caffeine by method 525mod		2.0	1.50	ug/L	75	(45-137)	20	2.6
MBLK	Caffeine by method 525mod			<0.01	ug/L				
MS_201210170374	Caffeine by method 525mod		2.0	1.62	ug/L	81	(46-144)		
LCS1	Chlorobenzilate		2.0	2.12	ug/L	106	(70-130)		
LCS2	Chlorobenzilate		2.0	2.03	ug/L	102	(70-130)	20	4.3
MBLK	Chlorobenzilate			<0.05	ug/L				
MS_201210170374	Chlorobenzilate		2.0	2.05	ug/L	103	(70-130)		
LCS1	Chloroneb		2.0	2.01	ug/L	100	(70-130)		
LCS2	Chloroneb		2.0	1.95	ug/L	98	(70-130)	20	3.0
MBLK	Chloroneb			<0.05	ug/L				

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RPD not calculated for LCS2 when different a concentration than LCS1 is used.
RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level).
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QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MS_201210170374	Chloroneb		2.0	1.94	ug/L	97	(70-130)		
LCS1	Chlorothalonil(Draconil,Bravo)		2.0	2.12	ug/L	106	(70-130)		
LCS2	Chlorothalonil(Draconil,Bravo)		2.0	2.03	ug/L	101	(70-130)	20	4.8
MBLK	Chlorothalonil(Draconil,Bravo)			<0.05	ug/L				
MS_201210170374	Chlorothalonil(Draconil,Bravo)		2.0	2.00	ug/L	100	(70-130)		
LCS1	Chlorpyrifos (Dursban)		2.0	1.96	ug/L	98	(70-130)		
LCS2	Chlorpyrifos (Dursban)		2.0	1.91	ug/L	96	(70-130)	20	2.6
MBLK	Chlorpyrifos (Dursban)			<0.025	ug/L				
MS_201210170374	Chlorpyrifos (Dursban)		2.0	1.88	ug/L	94	(70-130)		
LCS1	Chrysene		2.0	2.00	ug/L	100	(70-130)		
LCS2	Chrysene		2.0	1.89	ug/L	94	(70-130)	20	5.7
MBLK	Chrysene			<0.01	ug/L				
MS_201210170374	Chrysene		2.0	1.88	ug/L	94	(70-130)		
LCS1	Chrysene-d12 (I)			100	%	100	(50-150)		
LCS2	Chrysene-d12 (I)			96.6	%	97	(50-150)		
BLK	Chrysene-d12 (I)			89.5	%	90	(50-150)		
MS_201210170374	Chrysene-d12 (I)			88.9	%	89	(50-150)		
LCS1	Delta-BHC		2.0	1.94	ug/L	97	(70-130)		
LCS2	Delta-BHC		2.0	1.87	ug/L	93	(70-130)	20	3.7
MBLK	Delta-BHC			<0.05	ug/L				
MS_201210170374	Delta-BHC		2.0	1.88	ug/L	94	(70-130)		
LCS1	Di-(2-Ethylhexyl)adipate		2.0	2.07	ug/L	104	(70-130)		
LCS2	Di-(2-Ethylhexyl)adipate		2.0	1.96	ug/L	98	(70-130)	20	5.5
MBLK	Di-(2-Ethylhexyl)adipate			<0.15	ug/L				
MS_201210170374	Di-(2-Ethylhexyl)adipate		2.0	1.94	ug/L	97	(70-130)		
LCS1	Di(2-Ethylhexyl)phthalate		2.0	2.02	ug/L	101	(70-130)		
LCS2	Di(2-Ethylhexyl)phthalate		2.0	1.89	ug/L	95	(70-130)	20	6.7
MBLK	Di(2-Ethylhexyl)phthalate			<0.15	ug/L				
MS_201210170374	Di(2-Ethylhexyl)phthalate		2.0	1.89	ug/L	95	(70-130)		
LCS1	Diazinon (Qualitative)		2.0	1.87	ug/L	93	(70-130)		
LCS2	Diazinon (Qualitative)		2.0	1.84	ug/L	92	(70-130)	20	1.6
MBLK	Diazinon (Qualitative)			<0.10	ug/L				
MS_201210170374	Diazinon (Qualitative)		2.0	1.90	ug/L	95	(70-130)		
LCS1	Dibenz(a,h)Anthracene		2.0	2.59	ug/L	129	(70-130)		
LCS2	Dibenz(a,h)Anthracene		2.0	2.42	ug/L	121	(70-130)	20	6.8
MBLK	Dibenz(a,h)Anthracene			<0.025	ug/L				
MS_201210170374	Dibenz(a,h)Anthracene		2.0	2.24	ug/L	112	(70-130)		
LCS1	Dichlorvos (DDVP)		2.0	2.05	ug/L	102	(70-130)		

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QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
LCS2	Dichlorvos (DDVP)		2.0	2.02	ug/L	101	(70-130)	20	1.5
MBLK	Dichlorvos (DDVP)			<0.025	ug/L				
MS_201210170374	Dichlorvos (DDVP)		2.0	1.98	ug/L	99	(70-130)		
LCS1	Dieldrin		2.0	2.03	ug/L	101	(70-130)		
LCS2	Dieldrin		2.0	1.86	ug/L	93	(70-130)	20	8.7
MBLK	Dieldrin			<0.05	ug/L				
MS_201210170374	Dieldrin		2.0	1.87	ug/L	94	(70-130)		
LCS1	Diethylphthalate		2.0	2.11	ug/L	106	(70-130)		
LCS2	Diethylphthalate		2.0	2.03	ug/L	101	(70-130)	20	3.9
MBLK	Diethylphthalate			<0.15	ug/L				
MS_201210170374	Diethylphthalate		2.0	2.00	ug/L	100	(70-130)		
LCS1	Dimethoate		2.0	1.46	ug/L	73	(35-100)		
LCS2	Dimethoate		2.0	1.48	ug/L	74	(35-100)	20	1.4
MBLK	Dimethoate			<0.05	ug/L				
MS_201210170374	Dimethoate		2.0	1.61	ug/L	81	(34-111)		
CS1	Dimethylphthalate		2.0	2.06	ug/L	103	(70-130)		
LCS2	Dimethylphthalate		2.0	2.01	ug/L	100	(70-130)	20	2.5
MBLK	Dimethylphthalate			<0.15	ug/L				
MS_201210170374	Dimethylphthalate		2.0	1.98	ug/L	99	(70-130)		
LCS1	Di-n-Butylphthalate		4.0	4.02	ug/L	101	(70-130)		
LCS2	Di-n-Butylphthalate		4.0	3.86	ug/L	96	(70-130)	20	4.1
MBLK	Di-n-Butylphthalate			<0.15	ug/L				
MS_201210170374	Di-n-Butylphthalate		4.0	3.83	ug/L	96	(70-130)		
LCS1	Di-N-octylphthalate		2.0	2.00	ug/L	100	(70-130)		
LCS2	Di-N-octylphthalate		2.0	1.88	ug/L	94	(70-130)	20	6.2
MBLK	Di-N-octylphthalate			<0.05	ug/L				
MS_201210170374	Di-N-octylphthalate		2.0	1.88	ug/L	94	(70-130)		
LCS1	Endosulfan I (Alpha)		2.0	1.98	ug/L	99	(70-130)		
LCS2	Endosulfan I (Alpha)		2.0	1.80	ug/L	90	(70-130)	20	9.5
MBLK	Endosulfan I (Alpha)			<0.05	ug/L				
MS_201210170374	Endosulfan I (Alpha)		2.0	1.88	ug/L	94	(70-130)		
LCS1	Endosulfan II (Beta)		2.0	1.94	ug/L	97	(70-130)		
LCS2	Endosulfan II (Beta)		2.0	1.84	ug/L	92	(70-130)	20	5.8
MBLK	Endosulfan II (Beta)			<0.05	ug/L				
MS_201210170374	Endosulfan II (Beta)		2.0	1.94	ug/L	97	(70-130)		
LCS1	Endosulfan Sulfate		2.0	2.13	ug/L	107	(70-130)		
LCS2	Endosulfan Sulfate		2.0	2.02	ug/L	101	(70-130)	20	5.3
MBLK	Endosulfan Sulfate			<0.05	ug/L				

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RPD not calculated for LCS2 when different a concentration than LCS1 is used.
RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level).
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City of Wichita Falls

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MS_201210170374	Endosulfan Sulfate		2.0	2.01	ug/L	101	(70-130)		
LCS1	Endrin		2.0	1.97	ug/L	98	(70-130)		
LCS2	Endrin		2.0	1.87	ug/L	93	(70-130)	20	5.2
MBLK	Endrin			<0.05	ug/L				
MS_201210170374	Endrin		2.0	1.88	ug/L	94	(70-130)		
LCS1	Endrin Aldehyde		2.0	2.10	ug/L	105	(70-130)		
LCS2	Endrin Aldehyde		2.0	2.02	ug/L	101	(70-130)	20	4.4
MBLK	Endrin Aldehyde			<0.05	ug/L				
MS_201210170374	Endrin Aldehyde		2.0	1.92	ug/L	96	(70-130)		
LCS1	EPTC		2.0	1.95	ug/L	97	(70-130)		
LCS2	EPTC		2.0	1.92	ug/L	96	(70-130)	20	1.0
MBLK	EPTC			<0.05	ug/L				
MS_201210170374	EPTC		2.0	1.82	ug/L	91	(70-130)		
LCS1	Fluoranthene		2.0	1.97	ug/L	99	(70-130)		
LCS2	Fluoranthene		2.0	1.88	ug/L	94	(70-130)	20	4.7
MBLK	Fluoranthene			<0.05	ug/L				
MS_201210170374	Fluoranthene		2.0	1.87	ug/L	93	(70-130)		
LCS1	Fluorene		2.0	1.99	ug/L	99	(70-130)		
LCS2	Fluorene		2.0	1.93	ug/L	97	(70-130)	20	3.1
MBLK	Fluorene			<0.05	ug/L				
MS_201210170374	Fluorene		2.0	1.90	ug/L	95	(70-130)		
LCS1	gamma-Chlordane		2.0	1.97	ug/L	99	(70-130)		
LCS2	gamma-Chlordane		2.0	1.85	ug/L	92	(70-130)	20	6.3
MBLK	gamma-Chlordane			<0.025	ug/L				
MS_201210170374	gamma-Chlordane		2.0	1.83	ug/L	92	(70-130)		
LCS1	Heptachlor		2.0	1.98	ug/L	99	(70-130)		
LCS2	Heptachlor		2.0	1.92	ug/L	96	(70-130)	20	3.6
MBLK	Heptachlor			<0.015	ug/L				
MS_201210170374	Heptachlor		2.0	1.86	ug/L	93	(70-130)		
LCS1	Heptachlor Epoxide (isomer B)		2.0	1.98	ug/L	99	(70-130)		
LCS2	Heptachlor Epoxide (isomer B)		2.0	1.90	ug/L	95	(70-130)	20	4.6
MBLK	Heptachlor Epoxide (isomer B)			<0.025	ug/L				
MS_201210170374	Heptachlor Epoxide (isomer B)		2.0	1.79	ug/L	90	(70-130)		
LCS1	Hexachlorobenzene		2.0	1.95	ug/L	98	(70-130)		
LCS2	Hexachlorobenzene		2.0	1.93	ug/L	96	(70-130)	20	1.0
MBLK	Hexachlorobenzene			<0.025	ug/L				
MS_201210170374	Hexachlorobenzene		2.0	1.87	ug/L	93	(70-130)		
LCS1	Hexachlorocyclopentadiene		2.0	1.94	ug/L	97	(70-130)		

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Report: 412567

City of Wichita Falls

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
LCS2	Hexachlorocyclopentadiene		2.0	1.95	ug/L	97	(70-130)	20	0.51
MBLK	Hexachlorocyclopentadiene			<0.025	ug/L				
MS_201210170374	Hexachlorocyclopentadiene		2.0	2.15	ug/L	108	(70-130)		
LCS1	Indeno(1,2,3,c,d)Pyrene		2.0	2.49	ug/L	124	(70-130)		
LCS2	Indeno(1,2,3,c,d)Pyrene		2.0	2.31	ug/L	115	(70-130)	20	7.5
MBLK	Indeno(1,2,3,c,d)Pyrene			<0.025	ug/L				
MS_201210170374	Indeno(1,2,3,c,d)Pyrene		2.0	2.14	ug/L	107	(70-130)		
LCS1	Isophorone		2.0	2.03	ug/L	101	(70-130)		
LCS2	Isophorone		2.0	2.00	ug/L	100	(70-130)	20	1.5
MBLK	Isophorone			<0.25	ug/L				
MS_201210170374	Isophorone		2.0	1.96	ug/L	98	(70-130)		
LCS1	Lindane		2.0	1.96	ug/L	98	(70-130)		
LCS2	Lindane		2.0	1.91	ug/L	96	(70-130)	20	2.6
MBLK	Lindane			<0.02	ug/L				
MS_201210170374	Lindane		2.0	1.90	ug/L	95	(70-130)		
CS1	Malathion		2.0	2.07	ug/L	103	(70-130)		
LCS2	Malathion		2.0	1.98	ug/L	99	(70-130)	20	4.4
MBLK	Malathion			<0.05	ug/L				
MS_201210170374	Malathion		2.0	1.97	ug/L	99	(70-130)		
LCS1	Methoxychlor		2.0	2.12	ug/L	106	(70-130)		
LCS2	Methoxychlor		2.0	1.96	ug/L	98	(70-130)	20	7.8
MBLK	Methoxychlor			<0.05	ug/L				
MS_201210170374	Methoxychlor		2.0	1.99	ug/L	100	(70-130)		
LCS1	Metolachlor		2.0	1.94	ug/L	97	(70-130)		
LCS2	Metolachlor		2.0	1.87	ug/L	93	(70-130)	20	4.2
MBLK	Metolachlor			<0.025	ug/L				
MS_201210170374	Metolachlor		2.0	1.85	ug/L	93	(70-130)		
LCS1	Metribuzin		2.0	2.05	ug/L	103	(70-130)		
LCS2	Metribuzin		2.0	1.93	ug/L	97	(70-130)	20	6.0
MBLK	Metribuzin			<0.05	ug/L				
MS_201210170374	Metribuzin		2.0	1.94	ug/L	97	(70-130)		
LCS1	Molinate		2.0	2.06	ug/L	103	(70-130)		
LCS2	Molinate		2.0	1.95	ug/L	97	(70-130)	20	5.5
MBLK	Molinate			<0.05	ug/L				
MS_201210170374	Molinate		2.0	1.95	ug/L	97	(70-130)		
LCS1	Naphthalene		2.0	1.80	ug/L	90	(70-130)		
LCS2	Naphthalene		2.0	1.76	ug/L	88	(70-130)	20	2.3
MBLK	Naphthalene			<0.05	ug/L				

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City of Wichita Falls

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MS_201210170374	Naphthalene		2.0	1.83	ug/L	92	(70-130)		
LCS1	Parathion		2.0	2.00	ug/L	100	(70-130)		
LCS2	Parathion		2.0	1.86	ug/L	93	(70-130)	20	7.3
MBLK	Parathion			<0.05	ug/L				
MS_201210170374	Parathion		2.0	1.95	ug/L	98	(70-130)		
LCS1	Pendimethalin		2.0	2.02	ug/L	101	(70-130)		
LCS2	Pendimethalin		2.0	1.90	ug/L	95	(70-130)	20	6.1
MBLK	Pendimethalin			<0.05	ug/L				
MS_201210170374	Pendimethalin		2.0	1.92	ug/L	96	(70-130)		
LCS1	Pentachlorophenol		8.0	10.0	ug/L	125	(70-130)		
LCS2	Pentachlorophenol		8.0	9.42	ug/L	118	(70-130)	20	6.0
MBLK	Pentachlorophenol			<0.6	ug/L				
MS_201210170374	Pentachlorophenol		8.0	10.3	ug/L	129	(70-130)		
LCS1	Permethrin (mixed isomers)		4.0	4.04	ug/L	101	(70-130)		
LCS2	Permethrin (mixed isomers)		4.0	3.76	ug/L	94	(70-130)	20	7.2
IBLK	Permethrin (mixed isomers)			<0.1	ug/L				
MS_201210170374	Permethrin (mixed isomers)		4.0	3.78	ug/L	95	(70-130)		
LCS1	Perylene-d12 (S)			92.6	%	93	(70-130)		
LCS2	Perylene-d12 (S)			93.4	%	93	(70-130)		
MBLK	Perylene-d12 (S)			78.7	%	79	(70-130)		
MS_201210170374	Perylene-d12 (S)			91.3	%	91	(70-130)		
LCS1	Phenanthrene		2.0	1.89	ug/L	95	(70-130)		
LCS2	Phenanthrene		2.0	1.82	ug/L	91	(70-130)	20	3.8
MBLK	Phenanthrene			<0.02	ug/L				
MS_201210170374	Phenanthrene		2.0	1.81	ug/L	91	(70-130)		
LCS1	Phenanthrene-d10 (I)			96.9	%	97	(50-150)		
LCS2	Phenanthrene-d10 (I)			91.4	%	91	(50-150)		
MBLK	Phenanthrene-d10 (I)			88.9	%	89	(50-150)		
MS_201210170374	Phenanthrene-d10 (I)			85.7	%	86	(50-150)		
LCS1	Propachlor		2.0	2.11	ug/L	105	(70-130)		
LCS2	Propachlor		2.0	2.01	ug/L	100	(70-130)	20	4.8
MBLK	Propachlor			<0.025	ug/L				
MS_201210170374	Propachlor		2.0	2.00	ug/L	100	(70-130)		
LCS1	Pyrene		2.0	1.97	ug/L	99	(70-130)		
LCS2	Pyrene		2.0	1.90	ug/L	95	(70-130)	20	3.6
MBLK	Pyrene			<0.025	ug/L				
MS_201210170374	Pyrene		2.0	1.88	ug/L	94	(70-130)		
LCS1	Simazine		2.0	2.07	ug/L	103	(70-130)		

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PD not calculated for LCS2 when different a concentration than LCS1 is used.
RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level).
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Report: 412567

City of Wichita Falls

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
LCS2	Simazine		2.0	2.03	ug/L	101	(70-130)	20	2.0
MBLK	Simazine			<0.025	ug/L				
MS_201210170374	Simazine		2.0	2.04	ug/L	102	(70-130)		
LCS1	Terbacil		2.0	2.06	ug/L	103	(70-130)		
LCS2	Terbacil		2.0	1.97	ug/L	99	(70-130)	20	4.5
MBLK	Terbacil			<0.05	ug/L				
MS_201210170374	Terbacil		2.0	2.01	ug/L	100	(70-130)		
LCS1	Terbuthylazine		2.0	2.18	ug/L	109	(70-130)		
LCS2	Terbuthylazine		2.0	2.08	ug/L	104	(70-130)	20	5.2
MBLK	Terbuthylazine			<0.2	ug/L				
MS_201210170374	Terbuthylazine		2.0	2.03	ug/L	102	(70-130)		
LCS1	Thiobencarb		2.0	2.00	ug/L	100	(70-130)		
LCS2	Thiobencarb		2.0	1.90	ug/L	95	(70-130)	20	5.1
MBLK	Thiobencarb			<0.1	ug/L				
MS_201210170374	Thiobencarb		2.0	1.91	ug/L	95	(70-130)		
CS1	trans-Nonachlor		2.0	1.95	ug/L	97	(70-130)		
LCS2	trans-Nonachlor		2.0	1.86	ug/L	93	(70-130)	20	4.7
MBLK	trans-Nonachlor			<0.025	ug/L				
MS_201210170374	trans-Nonachlor		2.0	1.78	ug/L	89	(70-130)		
LCS1	Trifluralin		2.0	2.12	ug/L	106	(70-130)		
LCS2	Trifluralin		2.0	2.07	ug/L	104	(70-130)	20	2.4
MBLK	Trifluralin			<0.05	ug/L				
MS_201210170374	Trifluralin		2.0	2.03	ug/L	102	(70-130)		
LCS1	Triphenylphosphate (S)			108	%	108	(70-130)		
LCS2	Triphenylphosphate (S)			108	%	108	(70-130)		
MBLK	Triphenylphosphate (S)			105	%	105	(70-130)		
MS_201210170374	Triphenylphosphate (S)			105	%	105	(70-130)		
QC Ref# 679394 - EPA 525 N/P Pesticides by EPA 525						**Analysis Date: 10/29/2012**			
LCS1	1,3-Dimethyl-2-nitrobenzene (S)			97.2	%	97	(70-130)		
LCS2	1,3-Dimethyl-2-nitrobenzene (S)			97.0	%	97	(70-130)		
MBLK	1,3-Dimethyl-2-nitrobenzene (S)			96.2	%	96	(70-130)		
MRL_CHK	1,3-Dimethyl-2-nitrobenzene (S)			100	%	100	(70-130)		
LCS1	acenaphthene-d10 (I)			91.4	%	91	(50-150)		
LCS2	acenaphthene-d10 (I)			97.9	%	98	(50-150)		
MBLK	acenaphthene-d10 (I)			89.9	%	90	(50-150)		
MRL_CHK	acenaphthene-d10 (I)			102	%	103	(50-150)		
LCS1	chrysene-d12 (I)			95.9	%	96	(50-150)		
LCS2	chrysene-d12 (I)			99.1	%	99	(50-150)		

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PD not calculated for LCS2 when different a concentration than LCS1 is used.
RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level).
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QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MBLK	chrysene-d12 (I)			95.1	%	95	(50-150)		
MRL_CHK	chrysene-d12 (I)			101	%	101	(50-150)		
LCS1	Guthion		2.0	2.24	ug/L	112	(70-130)		
LCS2	Guthion		2.0	2.19	ug/L	110	(70-130)	20	2.7
MBLK	Guthion			<0.1	ug/L				
MRL_CHK	Guthion		0.1	0.0830	ug/L	83	(50-150)		
LCS1	Mirex		2.0	1.88	ug/L	94	(70-130)		
LCS2	Mirex		2.0	1.87	ug/L	94	(70-130)	20	0.53
MBLK	Mirex			<0.1	ug/L				
MRL_CHK	Mirex		0.1	0.0790	ug/L	79	(50-150)		
LCS1	perylene-d12 (S)			72.4	%	72	(70-130)		
LCS2	perylene-d12 (S)			76.4	%	76	(70-130)		
MBLK	perylene-d12 (S)			71.6	%	72	(70-130)		
MRL_CHK	perylene-d12 (S)			73.3	%	73	(70-130)		
LCS1	phenanthrene-d10 (I)			97.0	%	97	(50-150)		
LCS2	phenanthrene-d10 (I)			99.8	%	100	(50-150)		
MBLK	phenanthrene-d10 (I)			97.5	%	98	(50-150)		
MRL_CHK	phenanthrene-d10 (I)			106	%	106	(50-150)		
LCS1	Triphenylphosphate (S)			106	%	106	(70-130)		
LCS2	Triphenylphosphate (S)			106	%	106	(70-130)		
MBLK	Triphenylphosphate (S)			103	%	103	(70-130)		
MRL_CHK	Triphenylphosphate (S)			98.0	%	98	(70-130)		
QC Ref# 679851 - Volatile Organics by EPA 624 by EPA 624						**Analysis Date: 10/30/2012**			
LCS1	1,1,1-Trichloroethane		20	17.6	ug/L	88	(79-121)		
LCS2	1,1,1-Trichloroethane		20	18.2	ug/L	91	(79-121)	20	3.4
MBLK	1,1,1-Trichloroethane			<0.25	ug/L				
MRL_CHK	1,1,1-Trichloroethane		0.5	0.420	ug/L	84	(50-150)		
MS_201210310506	1,1,1-Trichloroethane	ND	10	9.36	ug/L	94	(75-144)		
MSD_201210310506	1,1,1-Trichloroethane	ND	10	11.6	ug/L	116	(75-144)	20	21
LCS1	1,1,2,2-Tetrachloroethane		20	19.3	ug/L	97	(77-126)		
LCS2	1,1,2,2-Tetrachloroethane		20	20.4	ug/L	102	(77-126)	20	5.5
MBLK	1,1,2,2-Tetrachloroethane			<0.25	ug/L				
MRL_CHK	1,1,2,2-Tetrachloroethane		0.5	0.740	ug/L	148	(50-150)		
MS_201210310506	1,1,2,2-Tetrachloroethane	ND	10	10.0	ug/L	101	(79-130)		
MSD_201210310506	1,1,2,2-Tetrachloroethane	ND	10	10.7	ug/L	107	(79-130)	20	5.8
LCS1	1,1,2-Trichloroethane		20	19.5	ug/L	97	(79-116)		
LCS2	1,1,2-Trichloroethane		20	19.9	ug/L	99	(79-116)	20	2.0

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QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MBLK	1,1,2-Trichloroethane			<0.25	ug/L				
MRL_CHK	1,1,2-Trichloroethane		0.5	0.660	ug/L	132	(50-150)		
MS_201210310506	1,1,2-Trichloroethane	ND	10	9.67	ug/L	97	(76-129)		
MSD_201210310506	1,1,2-Trichloroethane	ND	10	10.5	ug/L	105	(76-129)	20	8.2
LCS1	1,1-Dichloroethane		20	17.8	ug/L	89	(77-129)		
LCS2	1,1-Dichloroethane		20	17.5	ug/L	88	(77-129)	20	1.7
MBLK	1,1-Dichloroethane			<0.25	ug/L				
MRL_CHK	1,1-Dichloroethane		0.5	0.480	ug/L	96	(50-150)		
MS_201210310506	1,1-Dichloroethane	ND	10	9.64	ug/L	96	(70-146)		
MSD_201210310506	1,1-Dichloroethane	ND	10	10.4	ug/L	104	(70-146)	20	8.5
LCS1	1,1-Dichloroethylene		20	18.0	ug/L	90	(77-139)		
LCS2	1,1-Dichloroethylene		20	17.1	ug/L	85	(77-139)	20	5.1
MBLK	1,1-Dichloroethylene			<0.25	ug/L				
MRL_CHK	1,1-Dichloroethylene		0.5	0.490	ug/L	98	(50-150)		
MS_201210310506	1,1-Dichloroethylene	4.4	10	15.0	ug/L	106	(75-134)		
ISD_201210310506	1,1-Dichloroethylene	4.4	10	15.9	ug/L	115	(75-134)	20	5.8
LCS1	1,2-Dichloroethane		20	19.0	ug/L	95	(81-122)		
LCS2	1,2-Dichloroethane		20	19.4	ug/L	97	(81-122)	20	2.1
MBLK	1,2-Dichloroethane			<0.25	ug/L				
MRL_CHK	1,2-Dichloroethane		0.5	0.530	ug/L	106	(50-150)		
MS_201210310506	1,2-Dichloroethane	ND	10	9.71	ug/L	97	(75-135)		
MSD_201210310506	1,2-Dichloroethane	ND	10	10.8	ug/L	108	(75-135)	20	11
LCS1	1,2-Dichloroethane-d4 (S)			99.0	%	99	(70-130)		
LCS2	1,2-Dichloroethane-d4 (S)			98.6	%	99	(70-130)		
MBLK	1,2-Dichloroethane-d4 (S)			102	%	102	(70-130)		
MRL_CHK	1,2-Dichloroethane-d4 (S)			95.2	%	95	(70-130)		
MS_201210310506	1,2-Dichloroethane-d4 (S)			94.4	%	94	(70-130)		
MSD_201210310506	1,2-Dichloroethane-d4 (S)			99.6	%	100	(70-130)		
LCS1	1,2-Dichloropropane		20	19.5	ug/L	97	(77-118)		
LCS2	1,2-Dichloropropane		20	20.2	ug/L	101	(77-118)	20	3.5
MBLK	1,2-Dichloropropane			<0.25	ug/L				
MRL_CHK	1,2-Dichloropropane		0.5	0.520	ug/L	104	(50-150)		
MS_201210310506	1,2-Dichloropropane	ND	10	10.1	ug/L	101	(73-132)		
MSD_201210310506	1,2-Dichloropropane	ND	10	10.8	ug/L	108	(73-132)	20	6.7
LCS1	2-Butanone (MEK)		200	185	ug/L	93	(65-122)		
LCS2	2-Butanone (MEK)		200	181	ug/L	91	(65-122)	20	2.2
MBLK	2-Butanone (MEK)			<2.5	ug/L				
MRL_CHK	2-Butanone (MEK)		5.0	5.79	ug/L	116	(50-150)		

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Laboratory QC
Report: 412567

City of Wichita Falls

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MS_201210310506	2-Butanone (MEK)	ND	100	91.6	ug/L	91	(59-129)		
MSD_201210310506	2-Butanone (MEK)	ND	100	106	ug/L	106	(59-129)	20	15
LCS1	2-Hexanone		200	228	ug/L	114	(72-128)		
LCS2	2-Hexanone		200	226	ug/L	113	(72-128)	20	0.88
MBLK	2-Hexanone			<2.5	ug/L				
MRL_CHK	2-Hexanone		5.0	7.07	ug/L	141	(50-150)		
MS_201210310506	2-Hexanone	ND	100	111	ug/L	110	(71-134)		
MSD_201210310506	2-Hexanone	ND	100	124	ug/L	123	(71-134)	20	11
LCS1	4-Bromofluorobenzene (S)			98.4	%	98	(70-130)		
LCS2	4-Bromofluorobenzene (S)			102	%	102	(70-130)		
MBLK	4-Bromofluorobenzene (S)			106	%	106	(70-130)		
MRL_CHK	4-Bromofluorobenzene (S)			99.0	%	99	(70-130)		
MS_201210310506	4-Bromofluorobenzene (S)			100	%	100	(70-130)		
MSD_201210310506	4-Bromofluorobenzene (S)			98.0	%	98	(70-130)		
LCS1	4-Methyl-2-Pentanone (MIBK)		200	217	ug/L	108	(76-130)		
CS2	4-Methyl-2-Pentanone (MIBK)		200	218	ug/L	109	(76-130)	20	0.46
MBLK	4-Methyl-2-Pentanone (MIBK)			<2.5	ug/L				
MRL_CHK	4-Methyl-2-Pentanone (MIBK)		5.0	6.49	ug/L	130	(50-150)		
MS_201210310506	4-Methyl-2-Pentanone (MIBK)	ND	100	103	ug/L	103	(75-136)		
MSD_201210310506	4-Methyl-2-Pentanone (MIBK)	ND	100	120	ug/L	119	(75-136)	20	15
LCS1	Acetone		200	208	ug/L	104	(47-117)		
LCS2	Acetone		200	197	ug/L	98	(47-117)	20	5.4
MBLK	Acetone			<5	ug/L				
MRL_CHK	Acetone		5.0	5.13	ug/L	103	(50-150)		
MS_201210310506	Acetone	ND	100	101	ug/L	100	(37-119)		
MSD_201210310506	Acetone	ND	100	122	ug/L	**121**	(37-119)	20	19
LCS1	Benzene		20	17.9	ug/L	90	(60-156)		
LCS2	Benzene		20	18.6	ug/L	93	(60-156)	20	3.8
MBLK	Benzene			<0.25	ug/L				
MRL_CHK	Benzene		0.5	0.530	ug/L	106	(50-150)		
MS_201210310506	Benzene	ND	10	10.0	ug/L	100	(76-133)		
MSD_201210310506	Benzene	ND	10	10.9	ug/L	109	(76-133)	20	8.6
LCS1	Bromodichloromethane		20	17.7	ug/L	89	(77-113)		
LCS2	Bromodichloromethane		20	18.1	ug/L	90	(77-113)	20	2.2
MBLK	Bromodichloromethane			<0.25	ug/L				
MRL_CHK	Bromodichloromethane		0.5	0.550	ug/L	110	(50-150)		
MS_201210310506	Bromodichloromethane	ND	10	9.40	ug/L	94	(77-130)		
MSD_201210310506	Bromodichloromethane	ND	10	9.82	ug/L	98	(77-130)	20	4.4

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QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
LCS1	Bromoform		20	16.6	ug/L	83	(54-134)		
LCS2	Bromoform		20	17.3	ug/L	86	(54-134)	20	4.1
MBLK	Bromoform			<0.25	ug/L				
MRL_CHK	Bromoform		0.5	0.520	ug/L	104	(50-150)		
MS_201210310506	Bromoform	ND	10	9.03	ug/L	90	(51-140)		
MSD_201210310506	Bromoform	ND	10	8.74	ug/L	87	(51-140)	20	3.3
LCS1	Bromomethane (Methyl Bromide)		20	16.9	ug/L	84	(67-144)		
LCS2	Bromomethane (Methyl Bromide)		20	16.1	ug/L	80	(67-144)	20	4.8
MBLK	Bromomethane (Methyl Bromide)			<0.25	ug/L				
MRL_CHK	Bromomethane (Methyl Bromide)		0.5	0.520	ug/L	104	(50-150)		
MS_201210310506	Bromomethane (Methyl Bromide)	ND	10	9.57	ug/L	96	(55-147)		
MSD_201210310506	Bromomethane (Methyl Bromide)	ND	10	10.5	ug/L	105	(55-147)	20	9.3
LCS1	Carbon disulfide		20	11.9	ug/L	**60**	(63-131)		
LCS2	Carbon disulfide		20	13.1	ug/L	66	(63-131)	20	9.6
MBLK	Carbon disulfide			<0.25	ug/L				
MRL_CHK	Carbon disulfide		0.5	0.450	ug/L	90	(50-150)		
MS_201210310506	Carbon disulfide	ND	10	9.55	ug/L	96	(65-155)		
MSD_201210310506	Carbon disulfide	ND	10	9.23	ug/L	92	(65-155)	20	3.4
LCS1	Carbon Tetrachloride		20	18.6	ug/L	93	(73-127)		
LCS2	Carbon Tetrachloride		20	18.0	ug/L	90	(73-127)	20	3.3
MBLK	Carbon Tetrachloride			<0.25	ug/L				
MRL_CHK	Carbon Tetrachloride		0.5	0.390	ug/L	78	(50-150)		
MS_201210310506	Carbon Tetrachloride	ND	10	10.1	ug/L	100	(71-151)		
MSD_201210310506	Carbon Tetrachloride	ND	10	11.2	ug/L	111	(71-151)	20	10
LCS1	Chlorobenzene		20	20.5	ug/L	102	(57-166)		
LCS2	Chlorobenzene		20	20.9	ug/L	105	(57-166)	20	1.9
MBLK	Chlorobenzene			<0.25	ug/L				
MRL_CHK	Chlorobenzene		0.5	0.590	ug/L	118	(50-150)		
MS_201210310506	Chlorobenzene	ND	10	10.6	ug/L	106	(77-132)		
MSD_201210310506	Chlorobenzene	ND	10	11.4	ug/L	114	(77-132)	20	7.3
LCS1	Chlorodibromomethane		20	17.7	ug/L	88	(77-113)		
LCS2	Chlorodibromomethane		20	18.2	ug/L	91	(77-113)	20	2.8
MBLK	Chlorodibromomethane			<0.25	ug/L				
MRL_CHK	Chlorodibromomethane		0.5	0.510	ug/L	102	(50-150)		
MS_201210310506	Chlorodibromomethane	ND	10	9.01	ug/L	90	(68-136)		
MSD_201210310506	Chlorodibromomethane	ND	10	9.43	ug/L	94	(68-136)	20	4.6
LCS1	Chloroethane		20	17.4	ug/L	87	(70-133)		
LCS2	Chloroethane		20	17.2	ug/L	86	(70-133)	20	1.2

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QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MBLK	Chloroethane			<0.25	ug/L				
MRL_CHK	Chloroethane		0.5	0.510	ug/L	102	(50-150)		
MS_201210310506	Chloroethane	ND	10	10.1	ug/L	101	(45-180)		
MSD_201210310506	Chloroethane	ND	10	11.2	ug/L	113	(45-180)	20	11
LCS1	Chloroform (Trichloromethane)		20	18.2	ug/L	91	(78-117)		
LCS2	Chloroform (Trichloromethane)		20	18.8	ug/L	94	(78-117)	20	3.2
MBLK	Chloroform (Trichloromethane)			<0.25	ug/L				
MRL_CHK	Chloroform (Trichloromethane)		0.5	0.530	ug/L	106	(50-150)		
MS_201210310506	Chloroform (Trichloromethane)	0.70	10	10.1	ug/L	94	(76-133)		
MSD_201210310506	Chloroform (Trichloromethane)	0.70	10	11.3	ug/L	106	(76-133)	20	11
LCS1	Chloromethane(Methyl Chloride)		20	18.0	ug/L	90	(78-134)		
LCS2	Chloromethane(Methyl Chloride)		20	18.4	ug/L	92	(78-134)	20	2.7
MBLK	Chloromethane(Methyl Chloride)			<0.25	ug/L				
MRL_CHK	Chloromethane(Methyl Chloride)		0.5	0.510	ug/L	102	(50-150)		
MS_201210310506	Chloromethane(Methyl Chloride)	ND	10	10.5	ug/L	105	(58-143)		
MSD_201210310506	Chloromethane(Methyl Chloride)	ND	10	11.8	ug/L	118	(58-140)	20	12
LCS1	cis-1,2-Dichloroethylene		20	18.2	ug/L	91	(80-114)		
LCS2	cis-1,2-Dichloroethylene		20	18.1	ug/L	91	(80-114)	20	0.55
MBLK	cis-1,2-Dichloroethylene			<0.25	ug/L				
MRL_CHK	cis-1,2-Dichloroethylene		0.5	0.500	ug/L	100	(50-150)		
MS_201210310506	cis-1,2-Dichloroethylene	ND	10	9.59	ug/L	96	(78-133)		
MSD_201210310506	cis-1,2-Dichloroethylene	ND	10	10.6	ug/L	106	(78-133)	20	10
LCS1	cis-1,3-Dichloropropene		20	19.3	ug/L	97	(68-123)		
LCS2	cis-1,3-Dichloropropene		20	19.0	ug/L	95	(68-123)	20	1.6
MBLK	cis-1,3-Dichloropropene			<0.25	ug/L				
MRL_CHK	cis-1,3-Dichloropropene		0.5	0.490	ug/L	98	(50-150)		
MS_201210310506	cis-1,3-Dichloropropene	ND	10	9.83	ug/L	98	(65-120)		
MSD_201210310506	cis-1,3-Dichloropropene	ND	10	10.3	ug/L	103	(65-120)	20	4.7
LCS1	Dichlorodifluoromethane		20	19.4	ug/L	97	(46-165)		
LCS2	Dichlorodifluoromethane		20	18.8	ug/L	94	(46-165)	20	3.1
MBLK	Dichlorodifluoromethane			<0.25	ug/L				
MRL_CHK	Dichlorodifluoromethane		0.5	0.540	ug/L	108	(50-150)		
MS_201210310506	Dichlorodifluoromethane	ND	10	12.7	ug/L	127	(30-169)		
MSD_201210310506	Dichlorodifluoromethane	ND	10	13.2	ug/L	132	(30-169)	20	3.9
LCS1	Dichloromethane		20	18.0	ug/L	90	(77-121)		
LCS2	Dichloromethane		20	18.1	ug/L	91	(77-121)	20	0.55
MBLK	Dichloromethane			<0.25	ug/L				
MRL_CHK	Dichloromethane		0.5	0.540	ug/L	108	(50-150)		

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QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MS_201210310506	Dichloromethane	ND	10	9.41	ug/L	94	(75-132)		
MSD_201210310506	Dichloromethane	ND	10	10.6	ug/L	106	(75-132)	20	12
LCS1	Ethyl benzene		20	19.7	ug/L	99	(79-122)		
LCS2	Ethyl benzene		20	20.1	ug/L	100	(79-122)	20	2.0
MBLK	Ethyl benzene			<0.25	ug/L				
MRL_CHK	Ethyl benzene		0.5	0.540	ug/L	108	(50-150)		
MS_201210310506	Ethyl benzene	ND	10	10.9	ug/L	109	(68-146)		
MSD_201210310506	Ethyl benzene	ND	10	11.9	ug/L	119	(68-146)	20	8.8
LCS1	m,p-Xylenes		40	39.9	ug/L	100	(82-123)		
LCS2	m,p-Xylenes		40	40.6	ug/L	101	(82-123)	20	1.7
MBLK	m,p-Xylenes			<0.25	ug/L				
MRL_CHK	m,p-Xylenes		1.0	1.08	ug/L	108	(50-150)		
MS_201210310506	m,p-Xylenes	ND	20	21.2	ug/L	106	(79-142)		
MSD_201210310506	m,p-Xylenes	ND	20	23.0	ug/L	115	(79-142)	20	8.1
LCS1	m-Dichlorobenzene (1,3-DCB)		20	20.0	ug/L	100	(76-124)		
CS2	m-Dichlorobenzene (1,3-DCB)		20	20.8	ug/L	104	(76-124)	20	3.9
MBLK	m-Dichlorobenzene (1,3-DCB)			<0.25	ug/L				
MRL_CHK	m-Dichlorobenzene (1,3-DCB)		0.5	0.650	ug/L	130	(50-150)		
MS_201210310506	m-Dichlorobenzene (1,3-DCB)	ND	10	10.3	ug/L	103	(76-139)		
MSD_201210310506	m-Dichlorobenzene (1,3-DCB)	ND	10	11.2	ug/L	112	(76-139)	20	8.4
LCS1	Methyl Tert-butyl ether (MTBE)		20	17.8	ug/L	89	(70-130)		
LCS2	Methyl Tert-butyl ether (MTBE)		20	17.2	ug/L	86	(70-130)	20	3.4
MBLK	Methyl Tert-butyl ether (MTBE)			<0.25	ug/L				
MRL_CHK	Methyl Tert-butyl ether (MTBE)		0.5	0.510	ug/L	102	(50-150)		
MS_201210310506	Methyl Tert-butyl ether (MTBE)	ND	10	8.60	ug/L	85	(70-130)		
MSD_201210310506	Methyl Tert-butyl ether (MTBE)	ND	10	9.90	ug/L	98	(70-130)	20	14
LCS1	o-Dichlorobenzene (1,2-DCB)		20	19.2	ug/L	96	(79-118)		
LCS2	o-Dichlorobenzene (1,2-DCB)		20	19.8	ug/L	99	(79-118)	20	3.1
MBLK	o-Dichlorobenzene (1,2-DCB)			<0.25	ug/L				
MRL_CHK	o-Dichlorobenzene (1,2-DCB)		0.5	0.700	ug/L	140	(50-150)		
MS_201210310506	o-Dichlorobenzene (1,2-DCB)	ND	10	10.4	ug/L	104	(80-125)		
MSD_201210310506	o-Dichlorobenzene (1,2-DCB)	ND	10	11.0	ug/L	110	(80-125)	20	5.6
LCS1	o-Xylene		20	21.0	ug/L	105	(79-120)		
LCS2	o-Xylene		20	21.1	ug/L	105	(79-120)	20	0.48
MBLK	o-Xylene			<0.25	ug/L				
MRL_CHK	o-Xylene		0.5	0.550	ug/L	110	(50-150)		
MS_201210310506	o-Xylene	ND	10	10.2	ug/L	102	(91-123)		
MSD_201210310506	o-Xylene	ND	10	11.2	ug/L	112	(91-123)	20	9.3

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QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
LCS1	p-Dichlorobenzene (1,4-DCB)		20	19.8	ug/L	99	(74-130)		
LCS2	p-Dichlorobenzene (1,4-DCB)		20	20.8	ug/L	104	(74-130)	20	4.9
MBLK	p-Dichlorobenzene (1,4-DCB)			<0.25	ug/L				
MRL_CHK	p-Dichlorobenzene (1,4-DCB)		0.5	0.680	ug/L	136	(50-150)		
MS_201210310506	p-Dichlorobenzene (1,4-DCB)	ND	10	10.2	ug/L	102	(71-145)		
MSD_201210310506	p-Dichlorobenzene (1,4-DCB)	ND	10	11.1	ug/L	111	(71-145)	20	8.4
LCS1	Styrene		20	22.1	ug/L	111	(77-125)		
LCS2	Styrene		20	22.4	ug/L	112	(77-125)	20	1.4
MBLK	Styrene			<0.25	ug/L				
MRL_CHK	Styrene		0.5	0.580	ug/L	116	(50-150)		
MS_201210310506	Styrene	ND	10	9.00	ug/L	90	(66-142)		
MSD_201210310506	Styrene	ND	10	9.41	ug/L	94	(66-142)	20	4.5
LCS1	Tetrachloroethylene (PCE)		20	19.5	ug/L	97	(79-122)		
LCS2	Tetrachloroethylene (PCE)		20	19.8	ug/L	99	(79-122)	20	1.5
MBLK	Tetrachloroethylene (PCE)			<0.25	ug/L				
IRL_CHK	Tetrachloroethylene (PCE)		0.5	0.520	ug/L	104	(50-150)		
MS_201210310506	Tetrachloroethylene (PCE)	0.60	10	11.6	ug/L	110	(72-146)		
MSD_201210310506	Tetrachloroethylene (PCE)	0.60	10	12.2	ug/L	116	(72-146)	20	5.0
LCS1	Tetrahydrofuran		200	187	ug/L	93	(67-130)		
LCS2	Tetrahydrofuran		200	186	ug/L	93	(67-130)	20	0.54
MBLK	Tetrahydrofuran			<5.0	ug/L				
MRL_CHK	Tetrahydrofuran		5.0	5.45	ug/L	109	(50-150)		
MS_201210310506	Tetrahydrofuran	ND	100	94.6	ug/L	94	(68-134)		
MSD_201210310506	Tetrahydrofuran	ND	100	107	ug/L	106	(68-134)	20	12
LCS1	Toluene		20	19.2	ug/L	96	(80-118)		
LCS2	Toluene		20	19.8	ug/L	99	(80-118)	20	3.1
MBLK	Toluene			<0.25	ug/L				
MRL_CHK	Toluene		0.5	0.560	ug/L	112	(50-150)		
MS_201210310506	Toluene	ND	10	10.7	ug/L	107	(66-143)		
MSD_201210310506	Toluene	ND	10	11.3	ug/L	113	(66-143)	20	5.5
LCS1	Toluene-d8 (S)			102	%	102	(70-130)		
LCS2	Toluene-d8 (S)			104	%	104	(70-130)		
MBLK	Toluene-d8 (S)			98.8	%	99	(70-130)		
MRL_CHK	Toluene-d8 (S)			101	%	101	(70-130)		
MS_201210310506	Toluene-d8 (S)			102	%	102	(70-130)		
MSD_201210310506	Toluene-d8 (S)			102	%	102	(70-130)		
LCS1	trans-1,2-Dichloroethylene		20	18.3	ug/L	92	(82-122)		
LCS2	trans-1,2-Dichloroethylene		20	18.2	ug/L	91	(82-122)	20	0.55

Spike recovery is already corrected for native results.
Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.
'iteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.
³D not calculated for LCS2 when different a concentration than LCS1 is used.
.PD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level).
(S) - Indicates surrogate compound.
(I) - Indicates internal standard compound.

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formerly MWH Laboratories

750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
Tel: (626) 386-1100
Fax: (626) 386-1101
1 800 566 LABS (1 800 566 5227)

Laboratory QC
Report: 412567

City of Wichita Falls

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MBLK	trans-1,2-Dichloroethylene			<0.25	ug/L				
MRL_CHK	trans-1,2-Dichloroethylene		0.5	0.530	ug/L	106	(50-150)		
MS_201210310506	trans-1,2-Dichloroethylene	ND	10	10.3	ug/L	103	(74-138)		
MSD_201210310506	trans-1,2-Dichloroethylene	ND	10	11.4	ug/L	114	(74-138)	20	10
LCS1	trans-1,3-Dichloropropene		20	19.0	ug/L	95	(64-126)		
LCS2	trans-1,3-Dichloropropene		20	18.9	ug/L	95	(64-126)	20	0.53
MBLK	trans-1,3-Dichloropropene			<0.25	ug/L				
MRL_CHK	trans-1,3-Dichloropropene		0.5	0.480	ug/L	96	(50-150)		
MS_201210310506	trans-1,3-Dichloropropene	ND	10	9.10	ug/L	91	(61-127)		
MSD_201210310506	trans-1,3-Dichloropropene	ND	10	9.53	ug/L	95	(61-127)	20	4.6
LCS1	Trichloroethylene (TCE)		20	19.8	ug/L	99	(78-119)		
LCS2	Trichloroethylene (TCE)		20	20.2	ug/L	101	(78-119)	20	2.0
MBLK	Trichloroethylene (TCE)			<0.25	ug/L				
MRL_CHK	Trichloroethylene (TCE)		0.5	0.470	ug/L	94	(50-150)		
MS_201210310506	Trichloroethylene (TCE)	ND	10	10.9	ug/L	106	(71-139)		
MSD_201210310506	Trichloroethylene (TCE)	ND	10	11.8	ug/L	116	(71-139)	20	8.8
LCS1	Trichlorofluoromethane		20	21.4	ug/L	107	(70-145)		
LCS2	Trichlorofluoromethane		20	20.9	ug/L	105	(70-145)	20	2.4
MBLK	Trichlorofluoromethane			<0.25	ug/L				
MRL_CHK	Trichlorofluoromethane		0.5	0.620	ug/L	124	(50-150)		
MS_201210310506	Trichlorofluoromethane	ND	10	13.3	ug/L	132	(63-161)		
MSD_201210310506	Trichlorofluoromethane	ND	10	13.6	ug/L	135	(63-161)	20	2.2
LCS1	Vinyl Acetate		100	98.2	ug/L	98	(72-136)		
LCS2	Vinyl Acetate		100	96.5	ug/L	97	(72-136)	20	1.8
MBLK	Vinyl Acetate			<0.25	ug/L				
MRL_CHK	Vinyl Acetate		2.5	2.51	ug/L	100	(50-150)		
MS_201210310506	Vinyl Acetate	ND	50	43.1	ug/L	86	(55-146)		
MSD_201210310506	Vinyl Acetate	ND	50	47.2	ug/L	94	(55-146)	20	9.1
LCS1	Vinyl chloride (VC)		20	19.1	ug/L	95	(66-140)		
LCS2	Vinyl chloride (VC)		20	19.0	ug/L	95	(66-140)	20	0.53
MBLK	Vinyl chloride (VC)			<0.25	ug/L				
MRL_CHK	Vinyl chloride (VC)		0.5	0.480	ug/L	96	(50-150)		
MS_201210310506	Vinyl chloride (VC)	ND	10	11.1	ug/L	111	(56-159)		
MSD_201210310506	Vinyl chloride (VC)	ND	10	12.0	ug/L	121	(56-159)	20	8.6
QC Ref# 680331 - PH (H3=past HT not compliant) by SM4500-HB						**Analysis Date: 11/08/2012**			
DUP_201211070600	PH (H3=past HT not compliant)	6.0		5.90	Units		(0-20)	20	1.3
DUP_201211070625	PH (H3=past HT not compliant)	8.1		8.12	Units		(0-20)	20	0.25
LCS1	PH (H3=past HT not compliant)		6.0	5.94	Units	99	(98-102)		

Spike recovery is already corrected for native results.
Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.
riteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.
PD not calculated for LCS2 when different a concentration than LCS1 is used.
RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level).
(S) - Indicates surrogate compound.
(I) - Indicates internal standard compound.

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750 Royal Oaks Drive, Suite 100
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Tel: (626) 386-1100
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1 800 566 LABS (1 800 566 5227)

Laboratory QC
Report: 412567

City of Wichita Falls

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
LCS2	PH (H3=past HT not compliant)		6.0	5.94	Units	99	(98-102)	20	0.0

Spike recovery is already corrected for native results.
Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.
Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.
RPD not calculated for LCS2 when different a concentration than LCS1 is used.
RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level).
(S) - Indicates surrogate compound.
(I) - Indicates internal standard compound.

908 North Temperance Ave. ∇ Clovis, CA 93611 ∇ Phone 559-275-2175 ∇ Fax 559-275-4422

State Certification Number: CA1312 (WW & DW)
NELAP Certification number: 05233CA (HW)

November 6, 2012

Eurofins Eaton Analytical
750 Royal Oaks Drive, Suite 100
Monrovia, California 91016

Attn: Jackie Contreras

Subject: Report of Data: Case 69207

Results in this report apply to the sample analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Dear Ms. Contreras,

One water sample for project " 412567" was received on November 3, 2012, in good condition. The sample was received more than seven days after collection. Written results are being provided on this November 6, 2012, for the requested analysis.

For the EPA 508 analysis, the sample was extracted and analyzed according to the method. The sample was received more than seven days after collection; it was extracted and analyzed as soon as possible. The lab control spike recovered Aldrin and Heptachlor below their lower control limit. In addition, the sample is reported at a dilution. No J values are reported because sample has a lot of interferences.

No other unusual problem or complication was encountered with this sample set.

If you have any questions or require further information, please contact us at your convenience. Thank you for choosing APPL, Inc.

I certify that this data package complies with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. These test results meet all requirements of NELAC. Release of the hard copy has been authorized by the Laboratory Manager or her designee, as verified by the following signature.

Sharon Dehmlow, Laboratory Director
APPL, Inc.

SD/cm
Enclosure
cc: File

Number of pages in this report: ____

EPA 508 Specialty OCL & PCBs

Eurofins Eaton Analytical
750 Royal Oaks Dr., Ste 100
Monrovia, CA 91016

Attn: Jackie Contreras
Project: 412567
Sample ID: 201210170373
Sample Collection Date: 10/16/12

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

ARF: 69207
APPL ID: AY71370
QCG: #508-121105A-172581

Method	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
EPA 508	2,4-DDD	Not detected	0.25	0.025	ug/L	11/05/12	11/05/12
EPA 508	2,4-DDE	Not detected	0.25	0.025	ug/L	11/05/12	11/05/12
EPA 508	2,4-DDT	Not detected	0.10	0.015	ug/L	11/05/12	11/05/12
EPA 508	4,4'-DDE	Not detected	0.05	0.010	ug/L	11/05/12	11/05/12
EPA 508	4,4'-DDT	Not detected	0.10	0.010	ug/L	11/05/12	11/05/12
EPA 508	4,4'-TDE/DDD	Not detected	0.10	0.010	ug/L	11/05/12	11/05/12
EPA 508	A-BHC	Not detected	0.25	0.015	ug/L	11/05/12	11/05/12
EPA 508	ALACHLOR	Not detected	0.50	0.030	ug/L	11/05/12	11/05/12
EPA 508	ALDRIN	Not detected	0.25	0.045	ug/L	11/05/12	11/05/12
EPA 508	B-BHC	Not detected	0.25	0.025	ug/L	11/05/12	11/05/12
EPA 508	BENEFIN	Not detected	0.50	0.040	ug/L	11/05/12	11/05/12
EPA 508	CAPTAN	Not detected	0.50	0.030	ug/L	11/05/12	11/05/12
EPA 508	CARBOPHENOTHION	Not detected	0.25	0.095	ug/L	11/05/12	11/05/12
EPA 508	CHLORDANE	Not detected	0.25	0.030	ug/L	11/05/12	11/05/12
EPA 508	CHLOROTHALONIL	Not detected	0.25	0.045	ug/L	11/05/12	11/05/12
EPA 508	D-BHC	Not detected	0.25	0.025	ug/L	11/05/12	11/05/12
EPA 508	DICOFOL	Not detected	0.50	0.055	ug/L	11/05/12	11/05/12
EPA 508	DIELDRIN	Not detected	0.10	0.020	ug/L	11/05/12	11/05/12
EPA 508	ENDOSULFAN I	Not detected	0.10	0.025	ug/L	11/05/12	11/05/12
EPA 508	ENDOSULFAN II	Not detected	0.05	0.035	ug/L	11/05/12	11/05/12
EPA 508	ENDOSULFAN SULFATE	Not detected	0.25	0.025	ug/L	11/05/12	11/05/12
EPA 508	ENDRIN	Not detected	0.25	0.020	ug/L	11/05/12	11/05/12
EPA 508	ENDRIN ALDEHYDE	Not detected	0.25	0.045	ug/L	11/05/12	11/05/12
EPA 508	ENDRIN KETONE	Not detected	0.25	0.030	ug/L	11/05/12	11/05/12
EPA 508	G-BHC (LINDANE)	Not detected	0.25	0.020	ug/L	11/05/12	11/05/12
EPA 508	HEPTACHLOR	Not detected	0.05	0.040	ug/L	11/05/12	11/05/12
EPA 508	HEPTACHLOR EPOXIDE	Not detected	0.05	0.020	ug/L	11/05/12	11/05/12
EPA 508	HEXACHLOROBENZENE	Not detected	0.25	0.060	ug/L	11/05/12	11/05/12
EPA 508	METHOXYCHLOR	Not detected	0.25	0.090	ug/L	11/05/12	11/05/12
EPA 508	NITROFEN	Not detected	0.25	0.085	ug/L	11/05/12	11/05/12
EPA 508	OXYFLUORFEN	Not detected	0.25	0.040	ug/L	11/05/12	11/05/12
EPA 508	PCB-1016	Not detected	2.50	0.915	ug/L	11/05/12	11/05/12
EPA 508	PCB-1221	Not detected	2.50	1.240	ug/L	11/05/12	11/05/12
EPA 508	PCB-1232	Not detected	2.50	0.945	ug/L	11/05/12	11/05/12
EPA 508	PCB-1242	Not detected	2.50	0.810	ug/L	11/05/12	11/05/12
EPA 508	PCB-1248	Not detected	2.50	0.710	ug/L	11/05/12	11/05/12
EPA 508	PCB-1254	Not detected	2.50	0.430	ug/L	11/05/12	11/05/12

Quant Method: OCL0809.M
Run #: 1102078
Instrument: Ethel
Sequence: 121102
Dilution Factor: 5
Initials: MA

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APPL-F1-SC-NoMC-REG MDLs

EPA 508 Specialty OCL & PCBs

Eurofins Eaton Analytical
750 Royal Oaks Dr., Ste 100
Monrovia, CA 91016

Attn: Jackie Contreras
Project: 412567
Sample ID: 201210170373
Sample Collection Date: 10/16/12

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

ARF: 69207
APPL ID: AY71370
QCG: #508-121105A-172581

Method	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
EPA 508	PCB-1260	Not detected	2.50	0.595	ug/L	11/05/12	11/05/12
EPA 508	PCNB	Not detected	0.25	0.025	ug/L	11/05/12	11/05/12
EPA 508	PROPACHLOR	Not detected	0.50	0.045	ug/L	11/05/12	11/05/12
EPA 508	TOXAPHENE	Not detected	2.50	0.515	ug/L	11/05/12	11/05/12
EPA 508	SURROGATE: DECACHLOROBIPHEN	80.7	70-130		%	11/05/12	11/05/12

Quant Method: OCL0809.M
Run #: 1102078
Instrument: Ethel
Sequence: 121102
Dilution Factor: 5
Initials: MA

Printed: 11/06/12 11:11:17 AM
APPL-F1-SC-NoMC-REG MDLs

Method Blank

EPA 508 Specialty OCL & PCBs

Blank Name/QCG: **121105W-71370 - 172581**
Batch ID: #508-121105A

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Sample Type	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
BLANK	2,4-DDD	Not detected	0.05	0.005	ug/L	11/05/12	11/05/12
BLANK	2,4-DDE	Not detected	0.05	0.005	ug/L	11/05/12	11/05/12
BLANK	2,4-DDT	Not detected	0.02	0.003	ug/L	11/05/12	11/05/12
BLANK	4,4'-DDE	Not detected	0.01	0.002	ug/L	11/05/12	11/05/12
BLANK	4,4'-DDT	Not detected	0.02	0.002	ug/L	11/05/12	11/05/12
BLANK	4,4'-TDE/DDD	Not detected	0.02	0.002	ug/L	11/05/12	11/05/12
BLANK	A-BHC	Not detected	0.05	0.003	ug/L	11/05/12	11/05/12
BLANK	ALACHLOR	Not detected	0.10	0.006	ug/L	11/05/12	11/05/12
BLANK	ALDRIN	Not detected	0.05	0.009	ug/L	11/05/12	11/05/12
BLANK	B-BHC	Not detected	0.05	0.005	ug/L	11/05/12	11/05/12
BLANK	BENEFIN	Not detected	0.10	0.008	ug/L	11/05/12	11/05/12
BLANK	CAPTAN	Not detected	0.10	0.006	ug/L	11/05/12	11/05/12
BLANK	CARBOPHENOTHION	Not detected	0.05	0.019	ug/L	11/05/12	11/05/12
BLANK	CHLORDANE	Not detected	0.05	0.006	ug/L	11/05/12	11/05/12
BLANK	CHLOROTHALONIL	Not detected	0.05	0.009	ug/L	11/05/12	11/05/12
BLANK	D-BHC	Not detected	0.05	0.005	ug/L	11/05/12	11/05/12
BLANK	DICOFOL	Not detected	0.10	0.011	ug/L	11/05/12	11/05/12
BLANK	DIELDRIN	Not detected	0.02	0.004	ug/L	11/05/12	11/05/12
BLANK	ENDOSULFAN I	Not detected	0.02	0.005	ug/L	11/05/12	11/05/12
BLANK	ENDOSULFAN II	Not detected	0.01	0.007	ug/L	11/05/12	11/05/12
BLANK	ENDOSULFAN SULFATE	Not detected	0.05	0.005	ug/L	11/05/12	11/05/12
BLANK	ENDRIN	Not detected	0.05	0.004	ug/L	11/05/12	11/05/12
BLANK	ENDRIN ALDEHYDE	Not detected	0.05	0.009	ug/L	11/05/12	11/05/12
BLANK	ENDRIN KETONE	Not detected	0.05	0.006	ug/L	11/05/12	11/05/12
BLANK	G-BHC (LINDANE)	Not detected	0.05	0.004	ug/L	11/05/12	11/05/12
BLANK	HEPTACHLOR	Not detected	0.01	0.008	ug/L	11/05/12	11/05/12
BLANK	HEPTACHLOR EPOXIDE	Not detected	0.01	0.004	ug/L	11/05/12	11/05/12
BLANK	HEXACHLOROBENZENE	Not detected	0.05	0.012	ug/L	11/05/12	11/05/12
BLANK	METHOXYCHLOR	Not detected	0.05	0.018	ug/L	11/05/12	11/05/12
BLANK	NITROFEN	Not detected	0.05	0.017	ug/L	11/05/12	11/05/12
BLANK	OXYFLUORFEN	Not detected	0.05	0.008	ug/L	11/05/12	11/05/12
BLANK	PCB-1016	Not detected	0.50	0.183	ug/L	11/05/12	11/05/12
BLANK	PCB-1221	Not detected	0.50	0.248	ug/L	11/05/12	11/05/12
BLANK	PCB-1232	Not detected	0.50	0.189	ug/L	11/05/12	11/05/12

Quant Method:OCL0809.M
Run #:1102070
Instrument:Ethel
Sequence:121102
Initials:MA

GC SC-Blank-REG MDLs
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Method Blank

EPA 508 Specialty OCL & PCBs

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **121105W-71370 - 172581**
Batch ID: #508-121105A

Sample Type	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
BLANK	PCB-1242	Not detected	0.50	0.162	ug/L	11/05/12	11/05/12
BLANK	PCB-1248	Not detected	0.50	0.142	ug/L	11/05/12	11/05/12
BLANK	PCB-1254	Not detected	0.50	0.086	ug/L	11/05/12	11/05/12
BLANK	PCB-1260	Not detected	0.50	0.119	ug/L	11/05/12	11/05/12
BLANK	PCNB	Not detected	0.05	0.005	ug/L	11/05/12	11/05/12
BLANK	PROPACHLOR	Not detected	0.10	0.009	ug/L	11/05/12	11/05/12
BLANK	TOXAPHENE	Not detected	0.50	0.103	ug/L	11/05/12	11/05/12
BLANK	SURROGATE: DECACHLOROBIPHEN	80.6	70-130		%	11/05/12	11/05/12

Quant Method: OCL0809.M
Run #: 1102070
Instrument: Ethel
Sequence: 121102
Initials: MA

GC SC-Blank-REG MDLs
Printed: 11/06/12 11:11:16 AM

Laboratory Control Spike Recovery
EPA 508 Specialty OCL & PCBs

APPL ID: **121105W-71370 LCS - 172581**
Batch ID: #508-121105A

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Level ug/L	SPK Result ug/L	SPK % Recovery	Recovery Limits
2,4-DDD	0.500	0.516	103	36-128
2,4-DDE	0.500	0.475	95.0	15-136
2,4-DDT	0.500	0.565	113	41-127
4,4'-DDE	0.300	0.255	85.0	69-129
4,4'-DDT	0.300	0.292	97.3	78-146
4,4'-TDE/DDD	0.300	0.264	88.0	75-139
A-BHC	0.300	0.284	94.7	64-120
ALACHLOR	0.500	0.539	108	51-120
ALDRIN	0.300	0.141	47.0 #	60-112
B-BHC	0.300	0.265	88.3	67-124
BENEFIN	0.500	0.436	87.2	17-121
CAPTAN	0.500	0.517	103	17-149
CARBOPHENOTHION	0.500	0.543	109	41-131
CHLORDANE	0.600	0.476	79.3	69-129
`HLOROTHALONIL	0.500	0.531	106	64-118
-BHC	0.300	0.294	98.0	25-105
DICOFOL	0.500	0.422	84.4	13-140
DIELDRIN	0.300	0.265	88.3	61-113
ENDOSULFAN I	0.300	0.261	87.0	61-113
ENDOSULFAN II	0.300	0.268	89.3	64-120
ENDOSULFAN SULFATE	0.300	0.278	92.7	74-130
ENDRIN	0.300	0.210	70.0	62-114
ENDRIN ALDEHYDE	0.300	0.270	90.0	62-114
ENDRIN KETONE	0.300	0.258	86.0	55-135
G-BHC (LINDANE)	0.300	0.276	92.0	62-116
HEPTACHLOR	0.300	0.172	57.3 #	69-127
HEPTACHLOR EPOXIDE	0.300	0.267	89.0	61-113
HEXACHLOROBENZENE	0.500	0.361	72.2	69-129
METHOXYCHLOR	0.300	0.273	91.0	74-137
NITROFEN	0.500	0.565	113	45-131
OXYFLUORFEN	0.500	0.552	110	53-128

= Recovery is outside QC limits.

Comments: _____

Primary	SPK
Quant Method :	OCL0809.M
Extraction Date :	11/05/12
Analysis Date :	11/05/12
Instrument :	Ethel
Run :	1102071
Initials :	MA

Printed: 11/06/12 11:11:19 AM
APPL Standard LCS

Laboratory Control Spike Recovery
EPA 508 Specialty OCL & PCBs

APPL ID: **121105W-71370 LCS - 172581**
Batch ID: #508-121105A

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Level ug/L	SPK Result ug/L	SPK % Recovery	Recovery Limits
PCB-1016	1.00	0.724	72.4	39-107
PCB-1260	1.00	0.812	81.2	49-112
PCNB	0.500	0.516	103	29-123
PROPACHLOR	0.500	0.603	121	72-134
TOXAPHENE	1.00	0.669	66.9	47-124
SURROGATE: DECACHLOROBIPHENYL	0.750	0.615	82.0	70-130

= Recovery is outside QC limits.

Comments: _____

Primary	SPK
Quant Method :	OCL0809.M
Extraction Date :	11/05/12
Analysis Date :	11/05/12
Instrument :	Ethel
Run :	1102071
Initials :	MA

Printed: 11/06/12 11:11:19 AM
APPL Standard LCS

69207

Submittal Form & Purchase Order 99-18886

eurofins | Eaton Analytical
formerly MWH Laboratories

Ship To:
908 N. Temperance
Appl, Inc.

Clovis, CA 93611

Phone: 559-275-2175 Fax: 559-275-4422

*REPORTING REQUIRMENTS: ***Do Not Combine Reports with any other samples submitte***
Report & Invoice must have the Folder # 412567 Sub PO# 99-18886 and Job # 1000014

Report all quality control data according to Method. Include dates analyzed. Date extracted (if e
Results must have Complete data & QC with Approval Signature.

Reports: Jackie Contreras Sub-Contracting Administrator
EMAIL TO: us20_subcontract@eurofinsus.com
Eurofins Eaton Analytical 750 Royal Oaks Drive, Suite 100, Monrovia, CA 910
Phone (626) 386-1165 Fax (626) 386-1122
Invoices to: Eurofins Eaton Analytical
Accounts Payable PO Box 12425, Lancaster, PA 17605

need a 10 day tat

Folder #:	**Report Due:**	**Sub PO #:**
412567	**11/02/2012**	**99-18886**

JLS	Use Lab Order # for ID	*Client Sample ID for reference only*	Analysis Requested	Sample Date & Time	Matrix
	201210170373	WASTEWATER EFFLUENT		10/16/12 0930	DW
EPA 508	@508EDD plus Oxyfluorphen		@508EDD plus Oxyfluorphen		

Relinquished by: [signature] Sample Control EEA Date 11-2-12 Time 1558 NOTIFICATION REQUIRED IF RE

Received by: [signature] Date 11-3-12 Time 1016 An Acknowledgement of Rece

750 Royal Oaks Drive, Suite 100, Monrovia, CA 91016 Tel (626) 386-1100 Fax (626) 386-1101 http://www.Eaton/

908 North Temperance Ave. ∇ Clovis, CA 93611 ∇ Phone 559-275-2175 ∇ Fax 559-275-4422

State Certification Number: CA1312 (WW & DW)
NELAP Certification number: 05233CA (HW)

November 6, 2012

Eurofins Eaton Analytical
750 Royal Oaks Drive, Suite 100
Monrovia, California 91016

Attn: Jackie Contreras

Subject: Report of Data: Case 69093

Results in this report apply to the sample analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Dear Ms. Contreras,

One water sample for project " 412567" was received on October 19, 2012, in good condition. Written results are being provided on this November 6, 2012, for the requested analysis. All holding times were met.

For the EPA 508 analysis, the sample was extracted and analyzed according to the method. The LCS was not spiked with the full analyte list. The client was notified and submitted additional volume passed hold time. The results for the re-extraction are included in a separate report. In addition, the sample is reported at a dilution. No J values are reported because sample has a lot of interferences.

No other unusual problem or complication was encountered with this sample set.

If you have any questions or require further information, please contact us at your convenience. Thank you for choosing APPL, Inc.

I certify that this data package complies with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. These test results meet all requirements of NELAC. Release of the hard copy has been authorized by the Laboratory Manager or her designee, as verified by the following signature.

Sharon Dehmlow, Laboratory Director
APPL, Inc.

SD/sdm
Enclosure
cc: File

Number of pages in this report: ____

EPA 508 Specialty OCL & PCBs

Eurofins Eaton Analytical
750 Royal Oaks Dr., Ste 100
Monrovia, CA 91016

Attn: Jackie Contreras

Project: 412567

Sample ID: 201210170373

Sample Collection Date: 10/16/12

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

ARF: 69093

APPL ID: AY70638

QCG: #508-121023A-172577

Method	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
EPA 508	2,4-DDD	Not detected	0.25	0.025	ug/L	10/23/12	11/05/12
EPA 508	2,4-DDE	Not detected	0.25	0.025	ug/L	10/23/12	11/05/12
EPA 508	2,4-DDT	Not detected	0.10	0.015	ug/L	10/23/12	11/05/12
EPA 508	4,4'-DDE	Not detected	0.05	0.010	ug/L	10/23/12	11/05/12
EPA 508	4,4'-DDT	Not detected	0.10	0.010	ug/L	10/23/12	11/05/12
EPA 508	4,4'-TDE/DDD	Not detected	0.10	0.010	ug/L	10/23/12	11/05/12
EPA 508	A-BHC	Not detected	0.25	0.015	ug/L	10/23/12	11/05/12
EPA 508	ALACHLOR	Not detected	0.50	0.030	ug/L	10/23/12	11/05/12
EPA 508	ALDRIN	Not detected	0.25	0.045	ug/L	10/23/12	11/05/12
EPA 508	B-BHC	Not detected	0.25	0.025	ug/L	10/23/12	11/05/12
EPA 508	BENEFIN	Not detected	0.50	0.040	ug/L	10/23/12	11/05/12
EPA 508	CAPTAN	Not detected	0.50	0.030	ug/L	10/23/12	11/05/12
EPA 508	CARBOPHENOTHION	Not detected	0.25	0.095	ug/L	10/23/12	11/05/12
EPA 508	CHLORDANE	Not detected	0.25	0.030	ug/L	10/23/12	11/05/12
EPA 508	CHLOROTHALONIL	Not detected	0.25	0.045	ug/L	10/23/12	11/05/12
EPA 508	D-BHC	Not detected	0.25	0.025	ug/L	10/23/12	11/05/12
EPA 508	DICOFOL	Not detected	0.50	0.055	ug/L	10/23/12	11/05/12
EPA 508	DIELDRIN	Not detected	0.10	0.020	ug/L	10/23/12	11/05/12
EPA 508	ENDOSULFAN I	Not detected	0.10	0.025	ug/L	10/23/12	11/05/12
EPA 508	ENDOSULFAN II	Not detected	0.05	0.035	ug/L	10/23/12	11/05/12
EPA 508	ENDOSULFAN SULFATE	Not detected	0.25	0.025	ug/L	10/23/12	11/05/12
EPA 508	ENDRIN	Not detected	0.25	0.020	ug/L	10/23/12	11/05/12
EPA 508	ENDRIN ALDEHYDE	Not detected	0.25	0.045	ug/L	10/23/12	11/05/12
EPA 508	ENDRIN KETONE	Not detected	0.25	0.030	ug/L	10/23/12	11/05/12
EPA 508	G-BHC (LINDANE)	Not detected	0.25	0.020	ug/L	10/23/12	11/05/12
EPA 508	HEPTACHLOR	Not detected	0.05	0.040	ug/L	10/23/12	11/05/12
EPA 508	HEPTACHLOR EPOXIDE	Not detected	0.05	0.020	ug/L	10/23/12	11/05/12
EPA 508	HEXACHLOROBENZENE	Not detected	0.25	0.060	ug/L	10/23/12	11/05/12
EPA 508	METHOXYCHLOR	Not detected	0.25	0.090	ug/L	10/23/12	11/05/12
EPA 508	NITROFEN	Not detected	0.25	0.085	ug/L	10/23/12	11/05/12
EPA 508	OXYFLUORFEN	Not detected	0.25	0.040	ug/L	10/23/12	11/05/12
EPA 508	PCB-1016	Not detected	2.50	0.915	ug/L	10/23/12	11/05/12
EPA 508	PCB-1221	Not detected	2.50	1.240	ug/L	10/23/12	11/05/12
EPA 508	PCB-1232	Not detected	2.50	0.945	ug/L	10/23/12	11/05/12
EPA 508	PCB-1242	Not detected	2.50	0.810	ug/L	10/23/12	11/05/12
EPA 508	PCB-1248	Not detected	2.50	0.710	ug/L	10/23/12	11/05/12
EPA 508	PCB-1254	Not detected	2.50	0.430	ug/L	10/23/12	11/05/12

Quant Method: OCL0809.M
Run #: 1102067
Instrument: Ethel
Sequence: 121102
Dilution Factor: 5
Initials: MA

Printed: 11/06/12 11:07:15 AM
APPL-F1-SC-NoMC-REG MDLs

EPA 508 Specialty OCL & PCBs

Eurofins Eaton Analytical
750 Royal Oaks Dr., Ste 100
Monrovia, CA 91016

Attn: Jackie Contreras

Project: 412567

Sample ID: 201210170373

Sample Collection Date: 10/16/12

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

ARF: 69093

APPL ID: AY70638

QCG: #508-121023A-172577

Method	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
EPA 508	PCB-1260	Not detected	2.50	0.595	ug/L	10/23/12	11/05/12
EPA 508	PCNB	Not detected	0.25	0.025	ug/L	10/23/12	11/05/12
EPA 508	PROPACHLOR	Not detected	0.50	0.045	ug/L	10/23/12	11/05/12
EPA 508	TOXAPHENE	Not detected	2.50	0.515	ug/L	10/23/12	11/05/12
EPA 508	SURROGATE: DECACHLOROBIPHEN	87.3	70-130		%	10/23/12	11/05/12

Quant Method: OCL0809.M
Run #: 1102067
Instrument: Ethel
Sequence: 121102
Dilution Factor: 5
Initials: MA

Printed: 11/06/12 11:07:15 AM
APPL-F1-SC-NoMC-REG MDLs

Method Blank

EPA 508 Specialty OCL & PCBs

Blank Name/QCG: **121023W-70637 - 172577**
Batch ID: #508-121023A

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Sample Type	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
BLANK	2,4-DDD	Not detected	0.05	0.005	ug/L	10/23/12	11/02/12
BLANK	2,4-DDE	Not detected	0.05	0.005	ug/L	10/23/12	11/02/12
BLANK	2,4-DDT	Not detected	0.02	0.003	ug/L	10/23/12	11/02/12
BLANK	4,4'-DDE	Not detected	0.01	0.002	ug/L	10/23/12	11/02/12
BLANK	4,4'-DDT	Not detected	0.02	0.002	ug/L	10/23/12	11/02/12
BLANK	4,4'-TDE/DDD	Not detected	0.02	0.002	ug/L	10/23/12	11/02/12
BLANK	A-BHC	Not detected	0.05	0.003	ug/L	10/23/12	11/02/12
BLANK	ALACHLOR	Not detected	0.10	0.006	ug/L	10/23/12	11/02/12
BLANK	ALDRIN	Not detected	0.05	0.009	ug/L	10/23/12	11/02/12
BLANK	B-BHC	Not detected	0.05	0.005	ug/L	10/23/12	11/02/12
BLANK	BENEFIN	Not detected	0.10	0.008	ug/L	10/23/12	11/02/12
BLANK	CAPTAN	Not detected	0.10	0.006	ug/L	10/23/12	11/02/12
BLANK	CARBOPHENOTHION	Not detected	0.05	0.019	ug/L	10/23/12	11/02/12
BLANK	CHLORDANE	Not detected	0.05	0.006	ug/L	10/23/12	11/02/12
BLANK	CHLOROTHALONIL	Not detected	0.05	0.009	ug/L	10/23/12	11/02/12
BLANK	D-BHC	Not detected	0.05	0.005	ug/L	10/23/12	11/02/12
BLANK	DICOFOL	Not detected	0.10	0.011	ug/L	10/23/12	11/02/12
BLANK	DIELDRIN	Not detected	0.02	0.004	ug/L	10/23/12	11/02/12
BLANK	ENDOSULFAN I	Not detected	0.02	0.005	ug/L	10/23/12	11/02/12
BLANK	ENDOSULFAN II	Not detected	0.01	0.007	ug/L	10/23/12	11/02/12
BLANK	ENDOSULFAN SULFATE	Not detected	0.05	0.005	ug/L	10/23/12	11/02/12
BLANK	ENDRIN	Not detected	0.05	0.004	ug/L	10/23/12	11/02/12
BLANK	ENDRIN ALDEHYDE	Not detected	0.05	0.009	ug/L	10/23/12	11/02/12
BLANK	ENDRIN KETONE	Not detected	0.05	0.006	ug/L	10/23/12	11/02/12
BLANK	G-BHC (LINDANE)	Not detected	0.05	0.004	ug/L	10/23/12	11/02/12
BLANK	HEPTACHLOR	Not detected	0.01	0.008	ug/L	10/23/12	11/02/12
BLANK	HEPTACHLOR EPOXIDE	Not detected	0.01	0.004	ug/L	10/23/12	11/02/12
BLANK	HEXACHLOROBENZENE	Not detected	0.05	0.012	ug/L	10/23/12	11/02/12
BLANK	METHOXYCHLOR	Not detected	0.05	0.018	ug/L	10/23/12	11/02/12
BLANK	NITROFEN	Not detected	0.05	0.017	ug/L	10/23/12	11/02/12
BLANK	OXYFLUORFEN	Not detected	0.05	0.008	ug/L	10/23/12	11/02/12
BLANK	PCB-1016	Not detected	0.50	0.183	ug/L	10/23/12	11/02/12
BLANK	PCB-1221	Not detected	0.50	0.248	ug/L	10/23/12	11/02/12
BLANK	PCB-1232	Not detected	0.50	0.189	ug/L	10/23/12	11/02/12

Quant Method: OCL0809.M
Run #: 1102038
Instrument: Ethel
Sequence: 121102
Initials: MA

GC SC-Blank-REG MDLs
Printed: 11/06/12 11:07:14 AM

Method Blank

EPA 508 Specialty OCL & PCBs

Blank Name/QCG: **121023W-70637 - 172577**
Batch ID: #508-121023A

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Sample Type	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
BLANK	PCB-1242	Not detected	0.50	0.162	ug/L	10/23/12	11/02/12
BLANK	PCB-1248	Not detected	0.50	0.142	ug/L	10/23/12	11/02/12
BLANK	PCB-1254	Not detected	0.50	0.086	ug/L	10/23/12	11/02/12
BLANK	PCB-1260	Not detected	0.50	0.119	ug/L	10/23/12	11/02/12
BLANK	PCNB	Not detected	0.05	0.005	ug/L	10/23/12	11/02/12
BLANK	PROPACHLOR	Not detected	0.10	0.009	ug/L	10/23/12	11/02/12
BLANK	TOXAPHENE	Not detected	0.50	0.103	ug/L	10/23/12	11/02/12
BLANK	SURROGATE: DECACHLOROBIPHEN	82.9	70-130		%	10/23/12	11/02/12

Quant Method: OCL0809.M
Run #: 1102038
Instrument: Ethel
Sequence: 121102
Initials: MA

GC SC-Blank-REG MDLs
Printed: 11/06/12 11:07:14 AM

Laboratory Control Spike Recovery

EPA 508 Specialty OCL & PCBs

APPL ID: **121023W-70637 LCS - 172577**
Batch ID: #508-121023A

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Level ug/L	SPK Result ug/L	SPK % Recovery	Recovery Limits
2,4-DDD	0.500	0.565	113	36-128
2,4-DDE	0.500	0.507	101	15-136
2,4-DDT	0.500	0.487	97.4	41-127
ALACHLOR	0.500	0.589	118	51-120
BENEFIN	0.500	0.434	86.8	17-121
CAPTAN	0.500	0.454	90.8	17-149
CARBOPHENOTHION	0.500	0.653	131	41-131
CHLOROTHALONIL	0.500	0.542	108	64-118
DICOFOL	0.500	0.523	105	13-140
HEXACHLOROBENZENE	0.500	0.348	69.6	69-129
NITROFEN	0.500	0.487	97.4	45-131
OXYFLUORFEN	0.500	0.618	124	53-128
PCNB	0.500	0.547	109	29-123
PROPACHLOR	0.500	0.552	110	72-134
SURROGATE: DECACHLOROBIPHENYL	0.300	0.259	86.3	70-130

Comments: _____

Primary	SPK
Quant Method :	OCL0809.M
Extraction Date :	10/23/12
Analysis Date :	11/02/12
Instrument :	Ethel
Run :	1102039
Initials :	MA

Printed: 11/08/12 11:07:17 AM
APPL Standard LCS

VTSMS

Submittal Form & Purchase Order 99-18886

Date: 10/18/2012

2.0°C

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formerly MWH Laboratories

Ship To:
908 N. Temperance
Appl, Inc.

Clovis, CA 93611

Phone: 559-275-2175 Fax: 559-275-4422

*REPORTING REQUIRMENTS: ***Do Not Combine Reports with any other samples submitted under different Folder Numbers!***
Report & Invoice must have the Folder# 412567. Sub PO# 99-18886 and Job # 1000014

Report all quality control data according to Method. Include dates analyzed. Date extracted (if extracted) and Method reference on the report.
Results must have Complete data & QC with Approval Signature.

Reports: Jackie Contreras Sub-Contracting Administrator
EMAIL TO: us20_subcontract@eurofinsus.com
Eurofins Eaton Analytical 750 Royal Oaks Drive, Suite 100, Monrovia, CA 91016
Phone (626) 386-1165 Fax (626) 386-1122
Invoices to: Eurofins Eaton Analytical
Accounts Payable PO Box 12425, Lancaster, PA 17605

Provide in each Report the Specified State Certification # & Exp Date for requested tests + matrix
Samples from: TEXAS

need a 10 day tat

Folder #:	Report Due:	Sub PO #:
412567	11/02/2012	99-18886

JLS	Use Lab Order # for ID	*Client Sample ID for reference only*	Analysis Requested	Sample Date & Time	Matrix	PWS Systemcode	PWSID
	201210170373	EFFLUENT		10/16/12 0930	DW		
EPA 508	@508EDD plus Oxyfluorphen		@508EDD plus Oxyfluorphen				

Relinquished by: M. DE HOYOS Sample Control EEA Date 10-18-12 Time 1105

Received by: [signature] Date 10-19-12 Time 1120

NOTIFICATION REQUIRED IF RECEIVED OUTSIDE OF 0-6 CELSIUS

An Acknowledgement of Receipt is requested to attn: Jackie Contreras

750 Royal Oaks Drive, Suite 100, Monrovia, CA 91016 Tel (626) 386-1100 Fax (626) 386-1101 http://www.EatonAnalytical.com

EAST BAY MUNICIPAL UTILITY DISTRICT
Laboratory Services Division
Phone (510)287-1432 Fax (510)465-5462
PO Box 24055, MS 59, Oakland, CA 94623

Analytical Report Prepared for JACLYN CONTRERAS

Report generated on: Nov 13, 2012 09:48 am
Login No.: L178611

Reported by:

KENNETH GERSTMAN
Laboratory Program Manager

Approved by:

NIRMELA ARSEM
Laboratory Services Division Manager

LSR E024-0201-1
Project Title: Eurofins Projects

Login Performance Summary
1 - Sample received by the lab on: Oct 19 2012, 11:30 am
0 - Lost Analyses
0 - Hold Time Exceedences
Turn-around-time not met

Samples included in this report:

Sample	Type	Collected	Site	Locator	ClientID
L178611-1	GRAB	16-Oct-2012 09:30	MISC	MISC	201210170373

Legend to the laboratory qualifiers used in this report:
N - Spike recovery outside of control limits
U - Analyte not detected
Qualifiers for subcontract work - See textvalue for description

EAST BAY MUNICIPAL UTILITY DISTRICT
Laboratory Services Division
PO Box 24055, MS 59, Oakland, CA 94623
Phone (510)287-1432 Fax (510)465-5462
Analytical Results Report

LSR E024-0201-1 Eurofins Projects
Site: MISC Miscellaneous - Unidentified Site
Locator: MISC Miscellaneous sample, see sample comments for location
ClientID: 201210170373
Lab ID: L178611-1 (P185327-1)
Sample Type: GRAB (Instantaneous Grab)
Date Collected: Oct 16 2012, 09:30am Sample collector: Not Stated
Date Received: Oct 19 2012, 11:30am Sample receiver: KLORENSO
Sample Comments: Folder # 412567, Sub PO# 99-18889, Job # 1000014, Eurofins Lab ID 201210170373 @TBTEDD, Client Sample ID: Wastewater Effluent

Method Reference Parameter	Qualifier	Result	Units	Dilution	MDL	Matrix RL/ML	Tag
Method: SM(21)6710B - BUTYLTINS: GC/MS						WasteH2O	
TARGET ANALYTES							
TRIBUTYLTIN	U	0.0026	ug/L	1	0.0026	0.005	
INTERNAL STANDARD							
D10-PHENANTHRENE		84.6	% recovery		1		
SURROGATE							
TRIPENTYLTIN		58.9	% recovery		1		

Run ID: R235552 / Work Group No.: WG180130
Prep Date1: 26-OCT-12 Prep Date2: 05-NOV-12 Analyzed 05-Nov-12 19:05

RL is either the client requested or regulatory mandated Reporting Limit. ML is the regulatory mandated Minimum Level

EAST BAY MUNICIPAL UTILITY DISTRICT
Laboratory Services Division
PO Box 24055, MS 59, Oakland, CA 94623
Phone (510)287-1432 Fax (510)465-5462

ANALYTICAL QC SUMMARY REPORT FOR LOGIN L178611

LSR E024-0201-1 Eurofins Projects

Sample	Parameter	Sample Type	Qual	Result	Units	Control Limit	Measure Date
Method: SM(21)6710B - BUTYLTINS: GC/MS							
Batch QC Summary:							
WG179781-1 BLANK METH		Method Blank - not subtracted					
WG179781-2 LCS		Low Level Laboratory Control Sample4UL * 2.5 UG/ML; OA141 P005					
WG179781-3 SPIKE BLNK		Spiked Blank (Method Spike) 40UL * 2.5 UG/ML; OA141 P005					
WG179781-4 MS		Matrix Spike L178364-1					
WG179781-5 MSD		Matrix Spike Duplicate L178364-1					
WG180130-1 CHK STND		Check Standard					
WG180130-2 CHK STND		Check Standard					
WG180130-3 CHK STND		Check Standard					
WG180130-4 CHK STND		Check Standard					
Run ID: R235552 / Work Group No.: WG180130							
Prep Date1: 26-OCT-12 Prep Date2: 05-NOV-12 Analyzed 05-NOV-12							
INTERNAL STANDARD							
WG179781-1	D10-PHENANTHRENE	BLANK METH		76.8	% recovery	70-130	05-nov-12 17:40
WG180130-1	D10-PHENANTHRENE	CHK STND		85.2	% recovery	70-130	05-nov-12 14:07
WG180130-2	D10-PHENANTHRENE	CHK STND		83.1	% recovery	70-130	05-nov-12 14:50
WG180130-3	D10-PHENANTHRENE	CHK STND		74	% recovery	70-130	05-nov-12 22:45
WG180130-4	D10-PHENANTHRENE	CHK STND		73.1	% recovery	70-130	05-nov-12 23:29
WG179781-2	D10-PHENANTHRENE	LCS		72.2	% recovery	70-130	05-nov-12 15:33
WG179781-4	D10-PHENANTHRENE	MS		74.4	% recovery	70-130	05-nov-12 21:17
WG179781-5	D10-PHENANTHRENE	MSD		70.7	% recovery	70-130	05-nov-12 22:01
L178364-1	D10-PHENANTHRENE	SAMP		80.5	% recovery	70-130	05-nov-12 18:23
WG179781-3	D10-PHENANTHRENE	SPIKE BLNK		72	% recovery	70-130	05-nov-12 16:15
SURROGATE							
WG179781-1	TRIPENTYLTIN	BLANK METH		97.9	% recovery	32-122	05-nov-12 17:40
WG180130-1	TRIPENTYLTIN	CHK STND		96.2	% recovery	32-122	05-nov-12 14:07
WG180130-2	TRIPENTYLTIN	CHK STND		101	% recovery	32-122	05-nov-12 14:50
WG180130-3	TRIPENTYLTIN	CHK STND		98.5	% recovery	32-122	05-nov-12 22:45
WG180130-4	TRIPENTYLTIN	CHK STND		101	% recovery	32-122	05-nov-12 23:29
WG179781-2	TRIPENTYLTIN	LCS		81.1	% recovery	32-122	05-nov-12 15:33
WG179781-4	TRIPENTYLTIN	MS		50	% recovery	32-122	05-nov-12 21:17
WG179781-5	TRIPENTYLTIN	MSD		44.2	% recovery	32-122	05-nov-12 22:01
L178364-1	TRIPENTYLTIN	SAMP		61.2	% recovery	32-122	05-nov-12 18:23
WG179781-3	TRIPENTYLTIN	SPIKE BLNK		78.1	% recovery	32-122	05-nov-12 16:15
SPIKE RECOVERY DATA PARAMETERS							
WG180130-1	TRIBUTYLTIN	CHK STND		100	% recovery	80-120	05-nov-12 14:07
WG180130-2	TRIBUTYLTIN	CHK STND		100	% recovery	80-120	05-nov-12 14:50
WG180130-3	TRIBUTYLTIN	CHK STND		100	% recovery	80-120	05-nov-12 22:45
WG180130-4	TRIBUTYLTIN	CHK STND		100	% recovery	80-120	05-nov-12 23:29
WG179781-2	TRIBUTYLTIN	LCS	N	24	% recovery	50-150	05-nov-12 15:33
WG179781-4	TRIBUTYLTIN	MS		46	% recovery	19-86	05-nov-12 21:17
WG179781-5	TRIBUTYLTIN	MSD		44	% recovery	19-86	05-nov-12 22:01
WG179781-3	TRIBUTYLTIN	SPIKE BLNK	N	58	% recovery	70-130	05-nov-12 16:15
TARGET ANALYTES							
WG179781-1	TRIBUTYLTIN	BLANK METH	U	.0026	ug/L	-	05-nov-12 17:40
WG180130-1	TRIBUTYLTIN	CHK STND		.1	ug/L	-	05-nov-12 14:07
WG180130-2	TRIBUTYLTIN	CHK STND		.1	ug/L	-	05-nov-12 14:50
WG180130-3	TRIBUTYLTIN	CHK STND		.1	ug/L	-	05-nov-12 22:45
WG180130-4	TRIBUTYLTIN	CHK STND		.1	ug/L	-	05-nov-12 23:29
WG179781-2	TRIBUTYLTIN	LCS		.0024	ug/L	-	05-nov-12 15:33
WG179781-4	TRIBUTYLTIN	MS		.048	ug/L	-	05-nov-12 21:17
WG179781-5	TRIBUTYLTIN	MSD		.044	ug/L	-	05-nov-12 22:01
L178364-1	TRIBUTYLTIN	SAMP	U	.0026	ug/L	-	05-nov-12 18:23
WG179781-3	TRIBUTYLTIN	SPIKE BLNK		.058	ug/L	-	05-nov-12 16:15
REL. % DIFFERENCE USING RECOVERIES							
WG179781-5	TRIBUTYLTIN	MSD		3.7	RPD	-54	05-nov-12 22:01

For detailed information regarding subcontract data, a copy of the original subcontractor report is available upon request

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

ANALYTICAL RESULTS

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

Prepared for:

Eurofins Eaton Analytical, Inc
Suite 100
750 Royal Oaks Drive
Monrovia CA 91016

October 30, 2012

Project: 412567

Submittal Date: 10/19/2012
Group Number: 1343557
PO Number: SUB PO# 99-18892
State of Sample Origin: TX

Client Sample Description	Lancaster Labs (LLI) #
201210170373 Water	6830465

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO Eurofins Eaton Analytical, Inc Attn: Jaclyn Contreras

Respectfully Submitted,

Natalie R. Luciano
Specialist

(717) 556-7258

Sample Description: 201210170373 Water
Folder# 412567 Sub PO# 99-18892 Job# 1000014

LLI Sample # PW 6830465
LLI Group # 1343557
Account # 14482

Project Name: 412567

Collected: 10/16/2012 09:30

Submitted: 10/19/2012 09:20
Reported: 10/30/2012 14:29

Eurofins Eaton Analytical, Inc
Suite 100
750 Royal Oaks Drive
Monrovia CA 91016

18892

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation*	As Received Method Detection Limit	Dilution Factor
Pesticides	**SW-846 8141B**		ug/l	ug/l	ug/l	
10593	Demeton-O	298-03-3	< 1.9	1.9	0.47	1
10593	Demeton-S	126-75-0	< 2.8	2.8	1.1	1
10593	Diazinon	333-41-5	< 5.7	5.7	1.9	1
10593	Dursban (Chlorpyrifos)	2921-88-2	< 2.8	2.8	0.95	1

General Sample Comments

State of Texas Lab Certification No. T104704194-08A-TX

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10593	OP Pesticides in Water	SW-846 8141B	1	122960023A	10/27/2012 06:21	Jamie L Brillhart	1
11123	OP Pest Waters Update IV Ext	SW-846 3510C	1	122960023A	10/23/2012 08:00	Joseph S Feister	1

*=This limit was used in the evaluation of the final result

Quality Control Summary

Client Name: Eurofins Eaton Analytical, Inc
Reported: 10/30/12 at 02:29 PM

Group Number: 1343557

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank LOQ**	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 122960023A	Sample number(s): 6830465								
Demeton-O	< 2.0	2.0	0.50	ug/l	61	54	29-78	12	20
Demeton-S	< 3.0	3.0	1.2	ug/l	110	66	23-144	51*	20
Diazinon	< 6.0	6.0	2.0	ug/l	101	35	19-132	98*	20
Dursban (Chlorpyrifos)	< 3.0	3.0	1.0	ug/l	102	95	62-136	6	20

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: OP Pesticides in Water
Batch number: 122960023A

	2-Nitro-m-xylene
6830465	91
Blank	94
LCS	96
LCSD	93
Limits:	45-141

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

1882 / 343552 / 6830465

eurofins | Eaton Analytical
formerly MWH Laboratories

Ship To:
2425 New Holland Pike
Eurofins Lancaster Laboratories

Lancaster, PA 17601

Phone: 717-656-2300 Fax:

Submittal Form & Purchase Order 99-18892

Date: 10/18/2012

REPORTING REQUIRMENTS:** ***Do Not Combine Reports with any other samples submitted under different Folder Numbers!
Report & Invoice must have the Folder # **412567** Sub PO# **99-18892** and Job # **1000014**

Report all quality control data according to Method. Include dates analyzed. Date extracted (if extracted) and Method reference on the report.
Results must have Complete data & QC with Approval Signature.

Reports: Jackie Contreras Sub-Contracting Administrator
EMAIL TO: us20_subcontract@eurofinsus.com
Eurofins Eaton Analytical 750 Royal Oaks Drive, Suite 100, Monrovia, CA 91016
Phone (626) 386-1165 Fax (626) 386-1122
Invoices to: Eurofins Eaton Analytical
Accounts Payable PO Box 12425, Lancaster, PA 17605

Provide in each Report the Specified State Certification # & Exp Date for requested tests + matrix.

Samples from: **TEXAS**

Folder #:	Report Due:	Sub PO #:
412567	11/02/2012	99-18892

JLS	Use Lab Order # for ID	*Client Sample ID for reference only*	Analysis Requested	Sample Date & Time	Matrix	PWS Systemcode	PWSID
	201210170373	WASTEWATER EFFLUENT		10/16/12 0930	DW		
EPA 8141	Demeton-O		Demeton-O by 8141				
EPA 8141	Demeton-S		Demeton-S by 8141				
EPA 8141	Chlorpyrifos		Chlorpyrifos by 8141				
EPA 8141	Diazinon		Diazinon by 8141				

Relinquished by: M. DeWitt Sample Control EEA Date 10-18-12 Time 1214

Received by: [signature] Date 10-19-12 Time 920

NOTIFICATION REQUIRED IF RECEIVED OUTSIDE OF 0-6 CELSIUS

An Acknowledgement of Receipt is requested to attn Jackie Contreras

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

J estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR part 136 Table II as "analyze immediately" are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL LANCASTER LABORATORIES BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF LANCASTER LABORATORIES AND (B) WHETHER LANCASTER LABORATORIES HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Lancaster Laboratories which includes any conditions that vary from the Standard Terms and Conditions, and Lancaster hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

WIC002

EPA Method 1615: Measurement of Enterovirus and Norovirus Occurrence in Water by Culture and RT-qPCR
SAMPLE DATA SHEET

(Please fill out completely and return to BioVir with the sample.)
Phone: 1-800-GIARDIA Fax: 707-747-1751 www.biovir.com

1.1°C

1503-1

Note: Please use waterproof ink

NAME AND ADDRESS OF WATER COMPANY OR UTILITY: City of Wichita Falls Cypress Plant 9801 Beyer Road Wichita Falls, TX 76310	SAMPLE DATE: 10/16/12	
	SAMPLE TIME:	
NAME OF SAMPLER: Calvin McPherson	pH: 6.75 pH (adjusted): pH meter model and serial no.:	Water Temp (C): 27.5 Temp. meter model and serial no.:
SAMPLE SOURCE: Treated WasteWater Effluent	TREATMENT CHARACTERISTICS (Check One): Raw Surface Water ☐ Treated Surface or Groundwater ☐ Untreated Ground water ☐	Raw Wastewater ☐ Treated Wastewater (X) Other: ☐
SAMPLE LOCATION: River Rd. Waste water aeration out fall	DECHLORINATION / DISINFECTANT NEUTRALIZATION (If Treated Water): Yes (NO) Free Chlorine (mg / L): Metering pump model and serial no.:	Chlorine meter model and serial no.:
SAMPLE VOLUME: (Meter # ~~49[illegible]~~ P2403,34) TURBIDITY (NTU): 1.40 Meter Start: 1497 Meter Stop: 1529 Turbidity (NTU): 1.40	Total Volume: 32 Gallons / 124 Liters	

Client ID #: WIC002	PO #: P1300791

ASSAY REQUESTED: Please check one of the following	
✓	Method 1615 Complete: Culturable Virus and RT-qPCR (EPA 600/R-10/181)
	Method 1615 Culturable Virus Only

COMMENTS:

RELINQUISHED BY: Blair Ramos	DATE / TIME: 10/17/12
RECEIVED BY:	DATE / TIME: 10/18/12 7:47

SHIPPING ADDRESS: BIOVIR LABORATORIES, INC., 685 STONE ROAD, UNIT 6, BENICIA, CALIFORNIA 94510

BioVir Laboratories, Inc

NELAC #05234CA
EPA ID# 01401, CA-ELAP #179

685 Stone Road, Unit 6 • Benicia, CA 94510 • (707) 747-5906 • 1-800-GIARDIA • FAX (707) 747-1751 • WEB: www.biovir.com

REPORT NO.: 121503
PAGE NO.: 1 of 2
CLIENT: WICHITA FALLS
ADDRESS PO Box 1431
WICHITA FALLS, TX 76307
CLIENT NO WIC002 **CLIENT PO:** P1300791

ASSAY RESULTS:

Test: EPA 1615 Culture **Method: EPA 1615**

BioVir #	Sample ID	Site	Analyte	Result	Units
121503-001	Treated Wastewater Effluent	River Rd Aeration Outfall	Total Culturable Virus	<0.032	MPN/L

Collector: CollectDate 10/16/2012 CollectTime: 2:30:00 PM
ReceiveDate 10/18/2012 9:47:00 AM Matrix: Waste Water, treated Temp 1.1
Volume: Analysis Start Date: 10/18/12 Analysis Start Time: 1405
Analyst: ValLog Analysis End: 11/26/2012

Comment

Test: EPA 1615 PCR **Method: EPA 1615**

BioVir #	Sample ID	Site	Analyte	Result	Units
121503-001	Treated Wastewater Effluent	River Rd Aeration Outfall	Enterovirus (PCR)	Non-detect/13.2L	

Collector: CollectDate 10/16/2012 CollectTime: 2:30:00 PM
ReceiveDate 10/18/2012 9:47:00 AM Matrix: Waste Water, treated Temp 1.1
Volume: Analysis Start Date: 12/12/12 Analysis Start Time: 1500
Analyst: RNewton Analysis End: 1/4/2013

Comment

BioVir #	Sample ID	Site	Analyte	Result	Units
121503-001	Treated Wastewater Effluent	River Rd Aeration Outfall	Norovirus GIA (PCR)	Non-detect/13.2L	

Collector: CollectDate 10/16/2012 CollectTime: 2:30:00 PM
ReceiveDate 10/18/2012 9:47:00 AM Matrix: Waste Water, treated Temp 1.1
Volume: Analysis Start Date: 12/12/12 Analysis Start Time: 1500
Analyst: RNewton Analysis End: 1/4/2013

Comment

REPORT NO.:	121503
PAGE NO.:	2 of 2
CLIENT:	WICHITA FALLS
ADDRESS	PO Box 1431 WICHITA FALLS, TX 76307
CLIENT NO	WIC002 **CLIENT PO:** P1300791

ASSAY RESULTS:

Test: EPA 1615 PCR **Method: EPA 1615**

BioVir #	Sample ID	Site	Analyte	Result	Units
121503-001	Treated Wastewater Effluent	River Rd Aeration Outfall	Norovirus GIB (PCR)	Non-detect/13.2L	

Collector: CollectDate 10/16/2012 CollectTime: 2:30:00 PM
ReceiveDate 10/18/2012 9:47:00 AM Matrix: Waste Water, treated Temp 1.1
Volume: Analysis Start Date: 12/12/12 Analysis Start Time: 1500
Analyst: RNewton Analysis End: 1/4/2013

Comment

BioVir #	Sample ID	Site	Analyte	Result	Units
121503-001	Treated Wastewater Effluent	River Rd Aeration Outfall	Norovirus GII (PCR)	Non-detect/13.2L	

Collector: CollectDate 10/16/2012 CollectTime: 2:30:00 PM
ReceiveDate 10/18/2012 9:47:00 AM Matrix: Waste Water, treated Temp 1.1
Volume: Analysis Start Date: 12/12/12 Analysis Start Time: 1500
Analyst: RNewton Analysis End: 1/4/2013

Comment

SAMPLE EVALUATION PERFORMANCE CRITERIA: The precise rates of recovery of organisms from environmental samples cannot be determined. B ioVir Laboratories has analyzed your sample(s) in accordance with the method described with each analyte above, however, due to inherent limitations of these methods organisms may avoid detection. For additional information regarding the limitations of the method(s) referred to above please call us at 1-800-GIARDIA.
COMPANY IS NOT AN INSURER: BioVir Laboratories is not an insurer or guarantor of the quality and/or purity of water, wastewater, biosolid or other material from which the sample was taken. BioVir offers no express or implied warranties whatsoever concerning the quality or purity of any water, wastewater, biosolid or other material which is ultimately consumed, distributed, applied or disposed.
MAINTENANCE OF RECORDS: BioVir Laboratories, Inc. shall maintain records pertaining to the historical reconstruction of client's data for a minimum of five years from the date of issuance of the final report. Records m ay be destroyed after that date unless a written client's request for records transfer is received by BioVir which requests otherwise. Records transfer or storage charges may apply after the 5 year period. THIS REPORT SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF BIOVIR LABORATORIES, INC.

1/29/2013
Date:

Richard E Daniel
Signature

Quality Checked DCelio

LABORATORY REPORT

This report contains 5 pages.
(including the cover page)

If you have any questions concerning this report, please do not hesitate to call us at (800) 332-4345 or (574) 233-4777.

This report may not be reproduced, except in full, without written approval from UL.

UL LLC
110 S. Hill St., South Bend, IN 46617-2702 USA
T: 800.332.4345 / F: 574.233.8207 / W: UL.com

Laboratory Report

Client: City of Wichita Falls

Attn: Mark Southard
P. O. Box 1431
Wichita Falls, TX 76307

Report: 286675
Priority: Standard Written
Status: Final
PWS ID: TX2430001

Copies to: None

Sample Information

UL ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
2720129	1005 River Road	1623	10/02/12 10:50	Client	10/03/12 09:30

Report Summary

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call Jim Vernon at (574) 233-4777.

Note: This report may not be reproduced, except in full, without written approval from UL.

Jim Vernon P.M.

Digitally signed by james.n.vernon@ul.com
Date: 2012.10.19 12:38:02 -04'00'

Authorized Signature | Title | Date

Client Name: City of Wichita Falls
Report #: 286675

UL LLC
110 S. Hill St., South Bend, IN 46617-2702 USA
T: 800.332.4345 / F: 574.233.8207 / W: UL.com

Client Name: City of Wichita Falls Report #: 286675

Sampling Point: 1005 River Road PWS ID: TX2430001

Microbiology									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
—	Giardia	1623	—	0.091	**1.091**	cysts/L	—	10/05/12 08:35	2720129
—	Cryptosporidium	1623	—	0.091	**0.182**	oocysts/L	—	10/05/12 08:35	2720129

For method 1623: The calculated MRL value is dependant on the volume filtered and the volume analyzed for each sample.

† UL has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

Lab Definitions

Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis.

Internal Standards (IS) - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

Laboratory Duplicate (LD) - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

Laboratory Fortified Blank (LFB) / Laboratory Control Sample (LCS) - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control.

Laboratory Method Blank (LMB) / Laboratory Reagent Blank (LRB) - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

Laboratory Trip Blank (LTB) / Field Reagent Blank (FRB) - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD) - is a sample aliquot taken from the same field sample source as the Matrix Spike Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix.

Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM) - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results.

Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV) - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the calibration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

Surrogate Standard (SS) / Surrogate Analyte (SUR) - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.

LABORATORY REPORT

This report contains 13 pages.
(including the cover page)

If you have any questions concerning this report, please do not hesitate to call us at (800) 332-4345 or (574) 233-4777.

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UL LLC
110 S. Hill St., South Bend, IN 46617-2702 USA
T: 800.332.4345 / F: 574.233.8207 / W: UL.com

Laboratory Report

Client: City of Wichita Falls

Attn: Mark Southard
P. O. Box 1431
Wichita Falls, TX 76307

Report: 286466
Priority: Standard Written
Status: Final
PWS ID: TX227935

Copies to: None

Sample Information

UL ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
2717250	WW Effluent	537	09/26/12 13:35	Client	09/27/12 09:30
2717251	WW Effluent	331.0	09/26/12 13:35	Client	09/27/12 09:30
2717252	WW Effluent	7110 B	09/26/12 13:35	Client	09/27/12 09:30
2717253	WW Effluent	245.1	09/26/12 13:35	Client	09/27/12 09:30
2717253	WW Effluent	200.7	09/26/12 13:35	Client	09/27/12 09:30
2717254	WW Effluent	549.2	09/26/12 13:35	Client	09/27/12 09:30
2717255	WW Effluent	515.3	09/26/12 13:35	Client	09/27/12 09:30
2717256	WW Effluent	521	09/26/12 13:35	Client	09/27/12 09:30
2717257	WW Effluent	1613	09/26/12 13:35	Client	09/27/12 09:30
2717258	WW Effluent	525.2	09/26/12 13:35	Client	09/27/12 09:30
2717259	WW Effluent	504.1	09/26/12 13:35	Client	09/27/12 09:30
2717260	WW Effluent	547	09/26/12 13:35	Client	09/27/12 09:30
2717261	WW Effluent	505	09/26/12 13:35	Client	09/27/12 09:30
2717262	WW Effluent	531.1	09/26/12 13:35	Client	09/27/12 09:30
2717263	WW Effluent	524.2	09/26/12 13:35	Client	09/27/12 09:30
2717264	WW Effluent	552.2	09/26/12 13:35	Client	09/27/12 09:30
2717267	WW Effluent	L211	09/26/12 13:35	Client	09/27/12 09:30
2717268	WW Effluent	S170	09/26/12 13:35	Client	09/27/12 09:30
2717269	WW Effluent	L220	09/26/12 13:35	Client	09/27/12 09:30
2717270	WW Effluent	L221	09/26/12 13:35	Client	09/27/12 09:30
2717271	WW Effluent	L200	09/26/12 13:35	Client	09/27/12 09:30

Report Summary

Project: Waste Water ReUse Project

Note: Dioxin analysis was performed by Pace Analytical Services, Inc., Minneapolis, MN.

Note: The sample submitted for Method 524.2 analysis was received above the method required pH of less than or equal to 2.

Note: In the Method L220 analysis, the sulfamethazine recovery in the LFB at 0.02 ug/L (62%) was low outside the acceptance limits of 63-122%. Any result is potentially low biased.

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Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call Jim Vernon at (574) 233-4777.

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Jim Vernon P.M.

Digitally signed by james.n.vernon@ul.com
Date: 2012.11.07 13:31:20 -05'00'

Authorized Signature | Title | Date

Client Name: City of Wichita Falls Report #: 286466

Sampling Point: WW Effluent PWS ID: TX227935

General Chemistry

Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
14797-73-0	Perchlorate	331.0	—	0.05	**0.16**	ug/L	—	10/04/12 12:21	2717251

Metals

Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
7439-89-6	Iron	200.7	0.3 ^	0.020	**0.14**	mg/L	10/05/12 11:00	10/08/12 12:32	2717253
7439-97-6	Mercury	245.1	2 *	0.1	< 0.1	ug/L	10/03/12 10:45	10/04/12 10:52	2717253

Radionuclides

Analyte ID #	Analyte	Method	Reg Limit	DL**	Result	Units	Preparation Date	Analyzed	UL ID #
—	Gross Alpha	7110 B	15 *	2.2	-1.9 ± 1.0	pCi/L	10/04/12 07:45	10/08/12 11:29	2717252
—	Gross Beta	7110 B	—	1.7	**50.3 ± 2.6**	pCi/L	10/04/12 07:45	10/08/12 11:29	2717252

** Detection Limit (DL) shall be that concentration which can be counted with a precision of plus or minus 100% at the 95 % confidence level.

Disinfection Byproducts

Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
5589-96-8	Bromochloroacetic acid	552.2	—	1.0	**20**	ug/L	10/04/12 07:50	10/05/12 02:03	2717264
631-64-1	Dibromoacetic acid	552.2	—	1.0	**22**	ug/L	10/04/12 07:50	10/05/12 02:03	2717264
79-43-6	Dichloroacetic acid	552.2	—	1.0	**15**	ug/L	10/04/12 07:50	10/05/12 02:03	2717264
79-08-3	Monobromoacetic acid	552.2	—	1.0	**4.2**	ug/L	10/04/12 07:50	10/05/12 02:03	2717264
79-11-8	Monochloroacetic acid	552.2	—	2.0	**3.2**	ug/L	10/04/12 07:50	10/05/12 02:03	2717264
76-03-9	Trichloroacetic acid	552.2	—	1.0	**12**	ug/L	10/04/12 07:50	10/05/12 02:03	2717264
—	Total HAA5	552.2	60 *	2.0	**56.4**	ug/L	10/04/12 07:50	10/05/12 02:03	2717264

Semi-volatile Organic Chemicals

Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed	UL ID #
96-12-8	1,2-Dibromo-3-chloropropane (DBCP)	504.1	0.2 *	0.01	< 0.01	ug/L	10/05/12 09:00	10/06/12 00:02	2717259
106-93-4	1,2-Dibromoethane (EDB)	504.1	0.05 *	0.01	< 0.01	ug/L	10/05/12 09:00	10/06/12 00:02	2717259
12674-11-2	Aroclor 1016	505	—	0.08	< 0.08	ug/L	10/05/12 15:37	10/06/12 06:43	2717261
11104-28-2	Aroclor 1221	505	—	0.19	< 0.19	ug/L	10/05/12 15:37	10/06/12 06:43	2717261
11141-16-5	Aroclor 1232	505	—	0.23	< 0.23	ug/L	10/05/12 15:37	10/06/12 06:43	2717261
53469-21-9	Aroclor 1242	505	—	0.26	< 0.26	ug/L	10/05/12 15:37	10/06/12 06:43	2717261
12672-29-6	Aroclor 1248	505	—	0.1	< 0.1	ug/L	10/05/12 15:37	10/06/12 06:43	2717261
11097-69-1	Aroclor 1254	505	—	0.1	< 0.1	ug/L	10/05/12 15:37	10/06/12 06:43	2717261
11096-82-5	Aroclor 1260	505	—	0.2	< 0.2	ug/L	10/05/12 15:37	10/06/12 06:43	2717261
57-74-9	Chlordane	505	2 *	0.1	< 0.1	ug/L	10/05/12 15:37	10/06/12 06:43	2717261
8001-35-2	Toxaphene	505	3 *	1.0	< 1.0	ug/L	10/05/12 15:37	10/06/12 06:43	2717261
94-75-7	2,4-D	515.3	70 *	0.1	< 0.1	ug/L	10/04/12 07:30	10/05/12 18:29	2717255
75-99-0	Dalapon	515.3	200 *	1.0	< 1.0	ug/L	10/04/12 07:30	10/05/12 18:29	2717255
1918-00-9	Dicamba	515.3	—	0.1	< 0.1	ug/L	10/04/12 07:30	10/05/12 18:29	2717255

88-85-7	Dinoseb	515.3	7 *	0.1	< 0.1	ug/L	10/04/12 07:30	10/05/12 18:29	2717255
87-86-5	Pentachlorophenol	515.3	1 *	0.04	< 0.04	ug/L	10/04/12 07:30	10/05/12 18:29	2717255
1918-02-1	Picloram	515.3	500 *	0.1	< 0.1	ug/L	10/04/12 07:30	10/05/12 18:29	2717255
93-72-1	2,4,5-TP (Silvex)	515.3	50 *	0.1	< 0.1	ug/L	10/04/12 07:30	10/05/12 18:29	2717255
930-55-2	N-Nitrosopyrrolidine (NPYR)	521	—	2.0	< 2.0	ng/L	10/02/12 09:00	10/11/12 03:59	2717256
924-16-3	N-Nitrosodi-N-butylamine (NDBA)	521	—	4.0	< 4.0	ng/L	10/02/12 09:00	10/11/12 03:59	2717256
55-18-5	N-Nitrosodiethylamine (NDEA)	521	—	5.0	< 5.0	ng/L	10/02/12 09:00	10/11/12 03:59	2717256
62-75-9	N-Nitrosodimethylamine (NDMA)	521	—	2.0	**14**	ng/L	10/02/12 09:00	10/11/12 03:59	2717256
621-64-7	N-Nitrosodi-N-propylamine (NDPA)	521	—	7.0	< 7.0	ng/L	10/02/12 09:00	10/11/12 03:59	2717256
10595-95-6	N-Nitrosomethylethylamine (NMEA)	521	—	3.0	< 3.0	ng/L	10/02/12 09:00	10/11/12 03:59	2717256
100-75-4	N-Nitrosopiperidine (NPIP)	521	—	2.0	< 2.0	ng/L	10/02/12 09:00	10/11/12 03:59	2717256
15972-60-8	Alachlor	525.2	2 *	0.1	< 0.8	ug/L	10/10/12 07:45	10/11/12 13:59	2717258
309-00-2	Aldrin	525.2	—	0.1	< 0.8	ug/L	10/10/12 07:45	10/11/12 13:59	2717258
1912-24-9	Atrazine	525.2	3 *	0.1	< 0.8	ug/L	10/10/12 07:45	10/11/12 13:59	2717258
50-32-8	Benzo(a)pyrene	525.2	0.2 *	0.02	< 0.16	ug/L	10/10/12 07:45	10/11/12 13:59	2717258
58-89-9	gamma-BHC (Lindane)	525.2	0.2 *	0.02	< 0.16	ug/L	10/10/12 07:45	10/11/12 13:59	2717258
23184-66-9	Butachlor	525.2	—	0.1	< 0.8	ug/L	10/10/12 07:45	10/11/12 13:59	2717258
60-57-1	Dieldrin	525.2	—	0.1	< 0.8	ug/L	10/10/12 07:45	10/11/12 13:59	2717258
103-23-1	Di(2-ethylhexyl)adipate	525.2	400 *	0.6	< 4.8	ug/L	10/10/12 07:45	10/11/12 13:59	2717258
117-81-7	Di(2-ethylhexyl)phthalate	525.2	6 *	0.6	< 4.8	ug/L	10/10/12 07:45	10/11/12 13:59	2717258
72-20-8	Endrin	525.2	2 *	0.01	< 0.08	ug/L	10/10/12 07:45	10/11/12 13:59	2717258
76-44-8	Heptachlor	525.2	0.4 *	0.04	< 0.32	ug/L	10/10/12 07:45	10/11/12 13:59	2717258
1024-57-3	Heptachlor epoxide	525.2	0.2 *	0.02	< 0.16	ug/L	10/10/12 07:45	10/11/12 13:59	2717258
118-74-1	Hexachlorobenzene	525.2	1 *	0.1	< 0.8	ug/L	10/10/12 07:45	10/11/12 13:59	2717258
77-47-4	Hexachlorocyclopentadiene	525.2	50 *	0.1	< 0.8	ug/L	10/10/12 07:45	10/11/12 13:59	2717258
72-43-5	Methoxychlor	525.2	40 *	0.1	< 0.8	ug/L	10/10/12 07:45	10/11/12 13:59	2717258
51218-45-2	Metolachlor	525.2	—	0.1	< 0.8	ug/L	10/10/12 07:45	10/11/12 13:59	2717258
21087-64-9	Metribuzin	525.2	—	0.1	< 0.8	ug/L	10/10/12 07:45	10/11/12 13:59	2717258
1918-16-7	Propachlor	525.2	—	0.1	< 0.8	ug/L	10/10/12 07:45	10/11/12 13:59	2717258
122-34-9	Simazine	525.2	4 *	0.07	< 0.56	ug/L	10/10/12 07:45	10/11/12 13:59	2717258
116-06-3	Aldicarb	531.1	—	0.5	< 0.5	ug/L	10/10/12 12:30	10/11/12 01:03	2717262
1646-88-4	Aldicarb sulfone	531.1	—	0.7	< 0.7	ug/L	10/10/12 12:30	10/11/12 01:03	2717262
1646-87-3	Aldicarb sulfoxide	531.1	—	0.5	< 0.5	ug/L	10/10/12 12:30	10/11/12 01:03	2717262
63-25-2	Carbaryl	531.1	—	0.5	< 0.5	ug/L	10/10/12 12:30	10/11/12 01:03	2717262
1563-66-2	Carbofuran	531.1	40 *	0.9	< 0.9	ug/L	10/10/12 12:30	10/11/12 01:03	2717262
16655-82-6	3-Hydroxycarbofuran	531.1	—	0.5	< 0.5	ug/L	10/10/12 12:30	10/11/12 01:03	2717262
16752-77-5	Methomyl	531.1	—	0.5	< 0.5	ug/L	10/10/12 12:30	10/11/12 01:03	2717262
23135-22-0	Oxamyl	531.1	200 *	1.0	< 1.0	ug/L	10/10/12 12:30	10/11/12 01:03	2717262
1071-83-6	Glyphosate	547	700 *	6.0	< 6.0	ug/L	10/02/12 08:31	10/02/12 21:59	2717260
85-00-7	Diquat	549.2	20 *	0.4	< 4.0	ug/L	10/01/12 10:08	10/01/12 19:37	2717254

Any positive Aroclor result would require analysis for total PCB as decachlorobiphenyl by method 508A (MCL = 0.5 ug/L)

Volatile Organic Chemicals

Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
71-43-2	Benzene	524.2	5 *	0.5	< 0.5	ug/L	—	10/02/12 14:31	2717263
108-86-1	Bromobenzene	524.2	—	0.5	< 0.5	ug/L	—	10/02/12 14:31	2717263
74-97-5	Bromochloromethane	524.2	—	0.5	< 0.5	ug/L	—	10/02/12 14:31	2717263
75-27-4	Bromodichloromethane	524.2	—	0.5	**25**	ug/L	—	10/02/12 14:31	2717263
75-25-2	Bromoform	524.2	—	0.5	**24**	ug/L	—	10/02/12 14:31	2717263

74-83-9	Bromomethane	524.2	—	0.5	< 0.5	ug/L	—	10/02/12 14:31	2717263
104-51-8	n-Butylbenzene	524.2	—	0.5	< 0.5	ug/L	—	10/02/12 14:31	2717263
135-98-8	sec-Butylbenzene	524.2	—	0.5	< 0.5	ug/L	—	10/02/12 14:31	2717263
98-06-6	tert-Butylbenzene	524.2	—	0.5	< 0.5	ug/L	—	10/02/12 14:31	2717263
56-23-5	Carbon tetrachloride	524.2	5 *	0.5	< 0.5	ug/L	—	10/02/12 14:31	2717263
108-90-7	Chlorobenzene	524.2	100 *	0.5	< 0.5	ug/L	—	10/02/12 14:31	2717263
75-00-3	Chloroethane	524.2	—	0.5	< 0.5	ug/L	—	10/02/12 14:31	2717263
67-66-3	Chloroform	524.2	—	0.5	**7.4**	ug/L	—	10/02/12 14:31	2717263
74-87-3	Chloromethane	524.2	—	0.5	< 0.5	ug/L	—	10/02/12 14:31	2717263
95-49-8	2-Chlorotoluene	524.2	—	0.5	< 0.5	ug/L	—	10/02/12 14:31	2717263
106-43-4	4-Chlorotoluene	524.2	—	0.5	< 0.5	ug/L	—	10/02/12 14:31	2717263
124-48-1	Dibromochloromethane	524.2	—	0.5	**44**	ug/L	—	10/02/12 14:31	2717263
—	Total Trihalomethanes	524.2	80 *	0.5	**100.4**	ug/L	—	10/02/12 14:31	2717263
96-12-8	1,2-Dibromo-3-chloropropane (DBCP)	524.2	—	0.2	< 0.2	ug/L	—	10/02/12 14:31	2717263
106-93-4	1,2-Dibromoethane (EDB)	524.2	—	0.2	< 0.2	ug/L	—	10/02/12 14:31	2717263
74-95-3	Dibromomethane	524.2	—	0.5	< 0.5	ug/L	—	10/02/12 14:31	2717263
95-50-1	1,2-Dichlorobenzene	524.2	600 *	0.5	< 0.5	ug/L	—	10/02/12 14:31	2717263
541-73-1	1,3-Dichlorobenzene	524.2	—	0.5	< 0.5	ug/L	—	10/02/12 14:31	2717263
106-46-7	1,4-Dichlorobenzene	524.2	75 *	0.5	< 0.5	ug/L	—	10/02/12 14:31	2717263
75-71-8	Dichlorodifluoromethane	524.2	—	0.5	< 0.5	ug/L	—	10/02/12 14:31	2717263
75-34-3	1,1-Dichloroethane	524.2	—	0.5	< 0.5	ug/L	—	10/02/12 14:31	2717263
107-06-2	1,2-Dichloroethane	524.2	5 *	0.5	< 0.5	ug/L	—	10/02/12 14:31	2717263
75-35-4	1,1-Dichloroethylene	524.2	7 *	0.5	< 0.5	ug/L	—	10/02/12 14:31	2717263
156-59-2	cis-1,2-Dichloroethylene	524.2	70 *	0.5	< 0.5	ug/L	—	10/02/12 14:31	2717263
156-60-5	trans-1,2-Dichloroethylene	524.2	100 *	0.5	< 0.5	ug/L	—	10/02/12 14:31	2717263
75-09-2	Dichloromethane	524.2	5 *	0.5	< 0.5	ug/L	—	10/02/12 14:31	2717263
78-87-5	1,2-Dichloropropane	524.2	5 *	0.5	< 0.5	ug/L	—	10/02/12 14:31	2717263
142-28-9	1,3-Dichloropropane	524.2	—	0.5	< 0.5	ug/L	—	10/02/12 14:31	2717263
594-20-7	2,2-Dichloropropane	524.2	—	0.5	< 0.5	ug/L	—	10/02/12 14:31	2717263
563-58-6	1,1-Dichloropropylene	524.2	—	0.5	< 0.5	ug/L	—	10/02/12 14:31	2717263
10061-01-5	cis-1,3-Dichloropropylene	524.2	—	0.5	< 0.5	ug/L	—	10/02/12 14:31	2717263
10061-02-6	trans-1,3-Dichloropropylene	524.2	—	0.5	< 0.5	ug/L	—	10/02/12 14:31	2717263
542-75-6	1,3-Dichloropropylene, cis & trans	524.2	—	0.5	< 0.5	ug/L	—	10/02/12 14:31	2717263
100-41-4	Ethylbenzene	524.2	700 *	0.5	< 0.5	ug/L	—	10/02/12 14:31	2717263
87-68-3	Hexachlorobutadiene	524.2	—	0.5	< 0.5	ug/L	—	10/02/12 14:31	2717263
98-82-8	Isopropylbenzene	524.2	—	0.5	< 0.5	ug/L	—	10/02/12 14:31	2717263
99-87-6	4-Isopropyltoluene	524.2	—	0.5	< 0.5	ug/L	—	10/02/12 14:31	2717263
1634-04-4	Methyl-t-butyl ether (MTBE)	524.2	—	0.5	< 0.5	ug/L	—	10/02/12 14:31	2717263
91-20-3	Naphthalene	524.2	—	0.5	< 0.5	ug/L	—	10/02/12 14:31	2717263
103-65-1	n-Propylbenzene	524.2	—	0.5	< 0.5	ug/L	—	10/02/12 14:31	2717263
100-42-5	Styrene	524.2	100 *	0.5	< 0.5	ug/L	—	10/02/12 14:31	2717263
630-20-6	1,1,1,2-Tetrachloroethane	524.2	—	0.5	< 0.5	ug/L	—	10/02/12 14:31	2717263
79-34-5	1,1,2,2-Tetrachloroethane	524.2	—	0.5	< 0.5	ug/L	—	10/02/12 14:31	2717263
127-18-4	Tetrachloroethylene	524.2	5 *	0.5	< 0.5	ug/L	—	10/02/12 14:31	2717263
108-88-3	Toluene	524.2	1000 *	0.5	< 0.5	ug/L	—	10/02/12 14:31	2717263
87-61-6	1,2,3-Trichlorobenzene	524.2	—	0.5	< 0.5	ug/L	—	10/02/12 14:31	2717263
120-82-1	1,2,4-Trichlorobenzene	524.2	70 *	0.5	< 0.5	ug/L	—	10/02/12 14:31	2717263
71-55-6	1,1,1-Trichloroethane	524.2	200 *	0.5	< 0.5	ug/L	—	10/02/12 14:31	2717263
79-00-5	1,1,2-Trichloroethane	524.2	5 *	0.5	< 0.5	ug/L	—	10/02/12 14:31	2717263
79-01-6	Trichloroethylene	524.2	5 *	0.5	< 0.5	ug/L	—	10/02/12 14:31	2717263

75-69-4	Trichlorofluoromethane	524.2	—	0.5	< 0.5	ug/L	—	10/02/12 14:31	2717263
96-18-4	1,2,3-Trichloropropane	524.2	—	0.5	< 0.5	ug/L	—	10/02/12 14:31	2717263
95-63-6	1,2,4-Trimethylbenzene	524.2	—	0.5	< 0.5	ug/L	—	10/02/12 14:31	2717263
108-67-8	1,3,5-Trimethylbenzene	524.2	—	0.5	< 0.5	ug/L	—	10/02/12 14:31	2717263
75-01-4	Vinyl chloride	524.2	2 *	0.2	**1.6**	ug/L	—	10/02/12 14:31	2717263
95-47-6	1,2-Xylene	524.2	—	0.5	< 0.5	ug/L	—	10/02/12 14:31	2717263
179601-23-1	1,3 + 1,4-Xylene	524.2	—	0.5	< 0.5	ug/L	—	10/02/12 14:31	2717263
1330-20-7	Xylenes, Total	524.2	10000 *	0.5	< 0.5	ug/L	—	10/02/12 14:31	2717263

Compliance monitoring for 1,2-Dibromo-3-chloropropane (DBCP) must be done using EPA method 504.1.

Compliance monitoring for 1,2-Dibromoethane (EDB) must be done using EPA method 504.1.

UL Methods

Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
375-73-5	Perfluorobutanesulfonic acid (PFBS)	537	—	90.0	< 90.0	ng/L	10/09/12 08:00	10/24/12 06:20	2717250
375-85-9	Perfluoroheptanoic acid (PFHpA)	537	—	10.0	< 10.0	ng/L	10/09/12 08:00	10/24/12 06:20	2717250
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	537	—	30.0	< 30.0	ng/L	10/09/12 08:00	10/24/12 06:20	2717250
375-95-1	Perfluorononanoic acid (PFNA)	537	—	20.0	< 20.0	ng/L	10/09/12 08:00	10/24/12 06:20	2717250
1763-23-1	Perfluorooctane sulfonate (PFOS)	537	—	40.0	< 40.0	ng/L	10/09/12 08:00	10/24/12 06:20	2717250
335-67-1	Perfluorooctanoic acid (PFOA)	537	—	20	**21**	ng/L	10/09/12 08:00	10/24/12 06:20	2717250
80-05-7	Bisphenol A	L200	—	0.1	< 0.1	ug/L	10/04/12 07:35	10/13/12 18:39	2717271
25154-52-3	Nonylphenol, isomer mix	L200	—	0.5	< 0.5	ug/L	10/04/12 07:35	10/13/12 18:39	2717271
1806-26-4	4-n-Octylphenol	L200	—	0.5	< 0.5	ug/L	10/04/12 07:35	10/13/12 18:39	2717271
140-66-9	4-tert-Octylphenol	L200	—	0.5	< 0.5	ug/L	10/04/12 07:35	10/13/12 18:39	2717271
87-86-5	Pentachlorophenol	L200	—	0.1	< 0.1	ug/L	10/04/12 07:35	10/13/12 18:39	2717271
92-69-3	Phenylphenol	L200	—	0.1	< 0.1	ug/L	10/04/12 07:35	10/13/12 18:39	2717271
79-94-7	Tetrabromobisphenol A	L200	—	0.1	< 0.1	ug/L	10/04/12 07:35	10/13/12 18:39	2717271
88-06-2	2,4,6-Trichlorophenol	L200	—	0.1	< 0.1	ug/L	10/04/12 07:35	10/13/12 18:39	2717271
56-53-1	Diethylstilbestrol (DES)	L211	—	0.5	< 0.5	ng/L	10/04/12 07:35	10/12/12 17:50	2717267
57-91-0	17alpha-Estradiol	L211	—	0.5	< 0.5	ng/L	10/04/12 07:35	10/12/12 17:50	2717267
50-28-2	17beta-Estradiol	L211	—	0.5	< 0.5	ng/L	10/04/12 07:35	10/12/12 17:50	2717267
50-27-1	Estriol	L211	—	0.5	< 0.5	ng/L	10/04/12 07:35	10/12/12 17:50	2717267
53-16-7	Estrone	L211	—	0.5	< 0.5	ng/L	10/04/12 07:35	10/12/12 17:50	2717267
57-63-6	17alpha-Ethynyl estradiol	L211	—	0.5	< 0.5	ng/L	10/04/12 07:35	10/12/12 17:50	2717267
57-83-0	Progesterone	L211	—	0.1	**0.4**	ng/L	10/04/12 07:35	10/12/12 17:50	2717267
481-30-1	cis-Testosterone	L211	—	0.1	< 0.1	ng/L	10/04/12 07:35	10/12/12 17:50	2717267
58-22-0	trans-Testosterone	L211	—	0.1	< 0.1	ng/L	10/04/12 07:35	10/12/12 17:50	2717267
103-90-2	Acetaminophen	L220	—	0.005	< 0.050	ug/L	10/08/12 07:15	10/18/12 02:43	2717269
60-80-0	Antipyrine	L220	—	0.001	< 0.010	ug/L	10/08/12 07:15	10/18/12 02:43	2717269
29122-68-7	Atenolol	L220	—	0.001	< 0.010	ug/L	10/08/12 07:15	10/18/12 02:43	2717269
83905-01-5	Azithromycin	L220	—	0.005	< 0.050	ug/L	10/08/12 07:15	10/18/12 02:43	2717269
1405-87-4	Bacitracin	L220	—	1.0	< 10.0	ug/L	10/08/12 07:15	10/18/12 02:43	2717269
58-08-2	Caffeine	L220	—	0.05	< 0.50	ug/L	10/08/12 07:15	10/18/12 02:43	2717269
6804-07-5	Carbadox	L220	—	0.005	< 0.050	ug/L	10/08/12 07:15	10/18/12 02:43	2717269
298-46-4	Carbamazepine	L220	—	0.001	**0.050**	ug/L	10/08/12 07:15	10/18/12 02:43	2717269
85721-33-1	Ciprofloxacin	L220	—	0.05	< 0.50	ug/L	10/08/12 07:15	10/18/12 02:43	2717269
486-56-6	Cotinine	L220	—	0.001	< 0.010	ug/L	10/08/12 07:15	10/18/12 02:43	2717269
134-62-3	DEET	L220	—	0.005	**0.093**	ug/L	10/08/12 07:15	10/18/12 02:43	2717269
50-02-2	Dexamethasone	L220	—	0.005	< 0.050	ug/L	10/08/12 07:15	10/18/12 02:43	2717269
439-14-5	Diazepam	L220	—	0.001	< 0.010	ug/L	10/08/12 07:15	10/18/12 02:43	2717269
42399-41-7	Diltiazem	L220	—	0.0001	< 0.0010	ug/L	10/08/12 07:15	10/18/12 02:43	2717269

93106-60-6	Enrofloxacin	L220	—	0.05	< 0.50	ug/L	10/08/12 07:15	10/18/12 02:43	2717269
114-07-8	Erythromycin	L220	—	0.001	< 0.010	ug/L	10/08/12 07:15	10/18/12 02:43	2717269
59333-67-4	Fluoxetine (Prozac)	L220	—	0.001	**0.019**	ug/L	10/08/12 07:15	10/18/12 02:43	2717269
73334-07-3	Iopromide	L220	—	0.05	< 0.50	ug/L	10/08/12 07:15	10/18/12 02:43	2717269
11054-70-9	Lasalocid	L220	—	0.001	< 0.010	ug/L	10/08/12 07:15	10/18/12 02:43	2717269
154-21-2	Lincomycin	L220	—	0.0001	< 0.0010	ug/L	10/08/12 07:15	10/18/12 02:43	2717269
57-53-4	Meprobamate	L220	—	0.001	**0.412**	ug/L	10/08/12 07:15	10/18/12 02:43	2717269
17090-79-8	Monensin	L220	—	0.001	< 0.010	ug/L	10/08/12 07:15	10/18/12 02:43	2717269
55134-13-9	Narasin	L220	—	0.001	< 0.010	ug/L	10/08/12 07:15	10/18/12 02:43	2717269
22083-74-5	Nicotine	L220	—	0.005	< 0.050	ug/L	10/08/12 07:15	10/18/12 02:43	2717269
70458-96-7	Norfloxacin	L220	—	0.05	< 0.50	ug/L	10/08/12 07:15	10/18/12 02:43	2717269
7060-74-4	Oleandomycin	L220	—	0.001	< 0.010	ug/L	10/08/12 07:15	10/18/12 02:43	2717269
611-59-6	Paraxanthine	L220	—	0.005	**0.093**	ug/L	10/08/12 07:15	10/18/12 02:43	2717269
125-33-7	Primidone	L220	—	0.005	**0.505**	ug/L	10/08/12 07:15	10/18/12 02:43	2717269
80214-83-1	Roxithromycin	L220	—	0.001	< 0.010	ug/L	10/08/12 07:15	10/18/12 02:43	2717269
53003-10-4	Salinomycin	L220	—	0.0001	< 0.0010	ug/L	10/08/12 07:15	10/18/12 02:43	2717269
79902-63-9	Simvastatin	L220	—	0.005	< 0.050	ug/L	10/08/12 07:15	10/18/12 02:43	2717269
80-32-0	Sulfachloropyridazine	L220	—	0.005	< 0.050	ug/L	10/08/12 07:15	10/18/12 02:43	2717269
68-35-9	Sulfadiazine	L220	—	0.001	< 0.010	ug/L	10/08/12 07:15	10/18/12 02:43	2717269
122-11-2	Sulfadimethoxine	L220	—	0.0001	< 0.0010	ug/L	10/08/12 07:15	10/18/12 02:43	2717269
127-79-7	Sulfamerazine	L220	—	0.001	< 0.010	ug/L	10/08/12 07:15	10/18/12 02:43	2717269
57-68-1	Sulfamethazine	L220	—	0.001	< 0.010	ug/L	10/08/12 07:15	10/18/12 02:43	2717269
144-82-1	Sulfamethizole	L220	—	0.001	< 0.010	ug/L	10/08/12 07:15	10/18/12 02:43	2717269
723-46-6	Sulfamethoxazole	L220	—	0.001	< 0.010	ug/L	10/08/12 07:15	10/18/12 02:43	2717269
599-79-1	Sulfasalazine	L220	—	0.005	< 0.050	ug/L	10/08/12 07:15	10/18/12 02:43	2717269
72-14-0	Sulfathiazole	L220	—	0.001	< 0.010	ug/L	10/08/12 07:15	10/18/12 02:43	2717269
83-67-0	Theobromine	L220	—	0.05	**0.66**	ug/L	10/08/12 07:15	10/18/12 02:43	2717269
738-70-5	Trimethoprim	L220	—	0.001	< 0.010	ug/L	10/08/12 07:15	10/18/12 02:43	2717269
74610-55-2	Tylosin	L220	—	0.001	< 0.010	ug/L	10/08/12 07:15	10/18/12 02:43	2717269
21411-53-0	Virginiamycin M1	L220	—	0.001	< 0.010	ug/L	10/08/12 07:15	10/18/12 02:43	2717269
41859-67-0	Bezafibrate	L221	—	0.0005	< 0.0050	ug/L	10/05/12 07:45	10/13/12 04:26	2717270
56-75-7	Chloramphenicol	L221	—	0.005	< 0.050	ug/L	10/05/12 07:45	10/13/12 04:26	2717270
64-72-2	Chlorotetracycline	L221	—	0.05	< 0.50	ug/L	10/05/12 07:45	10/13/12 04:26	2717270
882-09-7	Clofibric acid	L221	—	0.0005	< 0.0050	ug/L	10/05/12 07:45	10/13/12 04:26	2717270
15307-86-5	Diclofenac	L221	—	0.0005	< 0.0050	ug/L	10/05/12 07:45	10/13/12 04:26	2717270
57-41-0	Dilantin	L221	—	0.002	**0.422**	ug/L	10/05/12 07:45	10/13/12 04:26	2717270
83038-87-3	Doxycycline	L221	—	0.05	< 0.50	ug/L	10/05/12 07:45	10/13/12 04:26	2717270
25812-30-0	Gemfibrozil	L221	—	0.0005	< 0.0050	ug/L	10/05/12 07:45	10/13/12 04:26	2717270
15687-27-1	Ibuprofen	L221	—	0.05	< 0.50	ug/L	10/05/12 07:45	10/13/12 04:26	2717270
51-48-9	Levothyroxine (Synthroid)	L221	—	0.002	< 0.020	ug/L	10/05/12 07:45	10/13/12 04:26	2717270
22204-53-1	Naproxen	L221	—	0.002	< 0.020	ug/L	10/05/12 07:45	10/13/12 04:26	2717270
2058-46-0	Oxytetracycline	L221	—	0.5	< 5.0	ug/L	10/05/12 07:45	10/13/12 04:26	2717270
61-33-6	Penicillin G	L221	—	0.002	< 0.020	ug/L	10/05/12 07:45	10/13/12 04:26	2717270
87-08-1	Penicillin V	L221	—	0.002	< 0.020	ug/L	10/05/12 07:45	10/13/12 04:26	2717270
53-03-2	Prednisone	L221	—	0.002	< 0.020	ug/L	10/05/12 07:45	10/13/12 04:26	2717270
69-72-7	Salicylic acid	L221	—	0.05	< 0.50	ug/L	10/05/12 07:45	10/13/12 04:26	2717270
60-54-8	Tetracycline	L221	—	0.5	< 5.0	ug/L	10/05/12 07:45	10/13/12 04:26	2717270
58-55-9	Theophylline	L221	—	0.005	< 0.050	ug/L	10/05/12 07:45	10/13/12 04:26	2717270
102-20-2	Triclocarban	L221	—	0.005	**0.189**	ug/L	10/05/12 07:45	10/13/12 04:26	2717270
3380-34-5	Triclosan	L221	—	0.050	< 0.500	ug/L	10/05/12 07:45	10/13/12 04:26	2717270
1222-05-5	Galaxolide	S170	—	10	**520**	ng/L	10/08/12 09:30	10/09/12 13:53	2717268

21145-77-7	Tonalid	S170	—	10	**79**	ng/L	10/08/12 09:30	10/09/12 13:53	2717268

Reference Lab Tests

Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed	UL ID #
1746-01-6	Dioxin	1613	30 *	10	< 10	pg/L	—	10/22/12 06:34	2717257

† UL has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

Lab Definitions

Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis.

Internal Standards (IS) - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

Laboratory Duplicate (LD) - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

Laboratory Fortified Blank (LFB) / Laboratory Control Sample (LCS) - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control.

Laboratory Method Blank (LMB) / Laboratory Reagent Blank (LRB) - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

Laboratory Trip Blank (LTB) / Field Reagent Blank (FRB) - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD) - is a sample aliquot taken from the same field sample source as the Matrix Spike Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix.

Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM) - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results.

Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV) - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the calibration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

Surrogate Standard (SS) / Surrogate Analyte (SUR) - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.

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Eaton Analytical

Acknowledgement of Samples Received

Addr: **City of Wichita Falls**
Cypress Water Plant
PO Box 1431
Wichita Falls, TX 76307
Attn: Mark Southard
Phone: 940-691-1153

Client ID: WICHITA-TX
Folder #: 409579
Project: SUCRALOSE
Sample Group: Sucralose Testing
Project Manager: Cam P Pham
Phone: (909) 254-0381

The following samples were received from you on **September 19, 2012**. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact your service representative. Thank you for using Eurofins Eaton Analytical.

Sample #	Sample ID	Sample Date
201209190294	Jasper Tap	09/18/2012 1130
	@SUCRALOSE	
201209190296	Lake Wichita	09/18/2012 1550
	@SUCRALOSE	
201209190297	Lake Arrowhead	09/18/2012 1550
	@SUCRALOSE	
201209190298	Wastewater Effluent	09/18/2012 1550
	@SUCRALOSE	
201209190299	TRIP BLANKS	09/18/2012 0800
	Hold test by MWH Labs	

Test Description

@SUCRALOSE – Endocrine Disruptors Negative Mode - SPE

eurofins | Eaton Analytical
formerly MWH Laboratories

750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
Tel: (626) 386-1100
Fax: (626) 386-1101
1 800 566 LABS (1 800 566 5227)

Laboratory Report

for

City of Wichita Falls
Cypress Water Plant
PO Box 1431
Wichita Falls, TX 76307
Attention: Mark Southard
Fax: 940-691-4121

Date of Issue
10/18/2012

EUROFINS EATON
ANALYTICAL

NELAP ACCREDITED
TNI
LABORATORY
01114CA

Report: 409579
Project: SUCRALOSE
Group: Sucralose Testing

CPP: Cam P Pham

Project Manager

Laboratory certifies that the test results meet all **TNI NELAP** requirements unless noted in the Comments section or the Case Narrative. Following the cover page are Hits Reports, Comments, QC Summary, QC Report and Regulatory Forms. This report shall not be reproduced except in full, without the written approval of the laboratory.

STATE CERTIFICATION LIST

State	Certification Number	State	Certification Number
Alabama	41060	**Mississippi**	Certified
Alaska	CA00006	**Montana**	Cert 0035
Arizona	AZ0778	**Nevada**	CA00006-2012-1
Arkansas	Certified	**New Hampshire**	2959-11
California – NELAP	01114CA	**New Jersey**	CA 008
California – ELAP	1422	**New Mexico**	Certified
Colorado	Certified	**New York**	11320
Connecticut	PH-0107	**North Carolina**	06701
Delaware	CA 006	**North Dakota**	R-009
Florida	E871024	**Oregon**	CA 200003-010
Georgia	947	**Pennsylvania**	68-565
Guam	11-004r	**Rhode Island**	01114CA
Hawaii	Certified	**South Carolina**	87016001
Idaho	Certified	**South Dakota**	Certified
Illinois	200033	**Tennessee**	TN02839
Indiana	C-CA-01	**Texas**	T104704230-11-2
Kansas	E-10268	**Utah**	Mont-1
Kentucky	90107	**Vermont**	VT0114
Louisiana	LA110022	**Virginia**	00210
Maine	CA0006	**Washington**	C383
Maryland	224	**West Virginia**	9943 C
Commonwealth of Northern Marianas Is.	MP0004	**Wisconsin**	998316660
Massachusetts	M-CA006	**Wyoming**	8TMS-L
Michigan	9906	**EPA Region 5**	Certified

eurofins
Eaton Analytical
formerly MWH Laboratories

Acknowledgement of Samples Received

Addr: **City of Wichita Falls**
Cypress Water Plant
PO Box 1431
Wichita Falls, TX 76307
Attn: Mark Southard
Phone: 940-691-1153

Client ID: WICHITA-TX
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The following samples were received from you on **September 19, 2012**. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact your service representative. Thank you for using Eurofins Eaton Analytical.

Sample #	Sample ID	Sample Date
201209190294	Jasper Tap	09/18/2012 1130
	@SUCRALOSE	
201209190296	Lake Wichita	09/18/2012 1550
	@SUCRALOSE	
201209190297	Lake Arrowhead	09/18/2012 1550
	@SUCRALOSE	
201209190298	Wastewater Effluent	09/18/2012 1550
	@SUCRALOSE	
201209190299	TRIP BLANKS	09/18/2012 0800
	Hold test by MWH Labs	

Test Description

@SUCRALOSE -- Endocrine Disruptors Negative Mode - SPE

409579

MWH Laboratories
A Division of MWH Americas, Inc.

CHAIN OF CUSTODY RECORD

750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
Tel: 626 386 1100
Fax: 626 386 1101
1 800 566 LABS (1 800 566 5227)

MWH LABS USE ONLY:

LOGIN COMMENTS: W/ TIE HOLD

SAMPLES CHECKED AGAINST COC BY: W

SAMPLES LOGGED IN BY: JJ

SAMPLES REC'D DAY OF COLLECTION? ☐ (check for yes)

SAMPLE TEMP RECEIVED AT:
☐ Colton / Sacramento / Scottsdale ____ °C (Compliance: 4 ± 2 °C)
☑ Monrovia 2.0 °C (Compliance: 4 ± 2 °C)

CONDITION OF BLUE ICE: FROZEN ___ PARTIALLY FROZEN ___ THAWED ___ WET ICE ✓ NO ICE ___

METHOD OF SHIPMENT: Pick-Up / Walk-In / FedEx / UPS / DHL / Area Fast / Top Line / Other: ___

TO BE COMPLETED BY SAMPLER:

COMPANY/AGENCY NAME: City of Wichita Falls

PROJECT CODE: Wastewater Reuse

MWH LABS CLIENT CODE: | COC ID: | SAMPLE GROUP:

TAT requested: rush by adv notice only STD___ 1 wk ___ 3 day ___ 2 day___ 1 day ___

COMPLIANCE SAMPLES (check for yes) ☐ - Requires state forms ☐

NON-COMPLIANCE SAMPLES (check for yes) ☑
REGULATION INVOLVED: (eg. SDWA, Phase V, NPDES, FDA,..)

Type of samples (circle one): ROUTINE SPECIAL CONFIRMATION

SEE ATTACHED BOTTLE ORDER FOR ANALYSES ☒ (check for yes), OR
list ANALYSES REQUIRED (enter number of bottles sent for each test for each sample)

SAMPLE DATE	SAMPLE TIME	SAMPLE ID	CLIENT LAB ID	MATRIX *	Field Data	Field Data	Sucralose	SAMPLER COMMENTS
9/18/12	11:30	Jasper Tap		CFW			✓	
9/18/12	3:50	Lake Wichita		RSW			✓	
9/18/12	3:50	Lake Arrowhead		RSW			✓	
9/18/12	3:50	Wastewater Effluent ↳ finished wastewater effluent		O			✓	

* MATRIX TYPES: RSW = Raw Surface Water, RGW = Raw Ground Water, CFW = Chlor(am)inated Finished Water, FW = Other Finished Water, SEAW = Sea Water, WW = Waste Water, BW = Bottled Water, SW = Storm Water, SO = Soil, SL = Sludge, O = Other - Please Identify

	SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
SAMPLED BY					
RELINQUISHED BY					
RECEIVED BY	[signature]	Chris Cabrera	EGA	9/19/12	1120
RELINQUISHED BY					
RECEIVED BY					

PAGE ___ OF ___

Eurofins Eaton Analytical
750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
(626) 386-1100 FAX (626) 386-1101

Kit Order for City of Wichita Falls

Cam P Pham is your Eurofins Eaton Analytical Project Manager

Note: Sampler Please return this paper with your samples

CAM
909 254 0381

Kit #: 56464
Created By: CPP
Order Date: 09/13/2012
Ship By: 09/03/2012
STG: Bottle Orders

Client ID: WICHITA-TX
Project Code: SUCRALOSE Bottle Orders
Group Name: Sucralose Testing
PO#/JOB#:

3

Ship Sample Kits to
City of Wichita Falls
4801 Big Ed Neal Dr
Wichita Falls, TX 76310

Attn: Mark Southard
Phone: 940-691-1153
Fax: 940-691-4121

Send Report to
City of Wichita Falls
Cypress Water Plant
PO Box 1431
Wichita Falls, TX 76307

Attn: Mark Southard
Phone: 940-691-1153
Fax: 940-691-4121

Billing Address
City of Wichita Falls
Cypress Water Plant
PO Box 1431
Wichita Falls, TX 76307

Attn: Mark Southard
Phone: 940-691-1153
Fax: 940-691-4121

# of Samples	Tests	Bottles - Qty for each sample, type & preservative if a	UN DOT #
1		2 40 mL silanized amber VOA vial 0.05 g NaAzide + 5 mg AA	UN1687
4	@SUCRALOSE	2 40 mL silanized amber VOA vial 0.05 g NaAzide + 5 mg AA	UN1687

Comments

SHIPPING - USE CLIENTS FEDEX ACCOUNT # 121730669 TO SHIP THE KITS.
PLEASE SHIP 4 SETS OF CONTAINERS & 1 TRIP BLANK (2 40MI VOA SILANIZED WITH DI WATER AND PRESERVED W/NAAZIDE...)
NEEDED BY THURSDAY 9/13 BEFORE 8:00

Code	Status	Date Shipped	Via	Tracking #	# of Coolers	Prepared By

eurofins | Eaton Analytical
formerly MWH Laboratories

750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
Tel: (626) 386-1100
Fax: (626) 386-1101
1 800 566 LABS (1 800 566 5227)

Laboratory Comments
Report: 409579

City of Wichita Falls
Mark Southard
Cypress Water Plant
PO Box 1431
Wichita Falls, TX 76307

The Comments Report may be blank if there are no comments for this report.

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formerly MWH Laboratories

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Monrovia, California 91016-3629
Tel: (626) 386-1100
Fax: (626) 386-1101
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Laboratory Hits
Report: 409579

City of Wichita Falls
Mark Southard
Cypress Water Plant
PO Box 1431
Wichita Falls, TX 76307

Samples Received on:
09/19/2012

Analyzed	Analyte	Sample ID	Result	Federal MCL	Units	MRL
	201209190298	**Wastewater Effluent**				
10/17/2012 20:47	Sucralose		43000		ng/L	1000

SUMMARY OF POSITIVE DATA ONLY

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Laboratory Data
Report: 409579

City of Wichita Falls
Mark Southard
Cypress Water Plant
PO Box 1431
Wichita Falls, TX 76307

Samples Received on:
09/19/2012

Prepared	Analyzed	QC Ref #	Method	Analyte	Result	Units	MRL	Dilution
Jasper Tap (201209190294)						**Sampled on 09/18/2012 1130**		
			LC-MS-MS - Endocrine Disruptors Negative Mode - SPE					
	10/17/2012 19:52	677210	(LC-MS-MS)	Sucralose	ND	ng/L	100	1
Lake Wichita (201209190296)						**Sampled on 09/18/2012 1550**		
			LC-MS-MS - Endocrine Disruptors Negative Mode - SPE					
	10/17/2012 20:11	677210	(LC-MS-MS)	Sucralose	ND	ng/L	100	1
Lake Arrowhead (201209190297)						**Sampled on 09/18/2012 1550**		
			LC-MS-MS - Endocrine Disruptors Negative Mode - SPE					
	10/17/2012 20:29	677210	(LC-MS-MS)	Sucralose	ND	ng/L	100	1
Wastewater Effluent (201209190298)						**Sampled on 09/18/2012 1550**		
			LC-MS-MS - Endocrine Disruptors Negative Mode - SPE					
	10/17/2012 20:47	677210	(LC-MS-MS)	Sucralose	43000	ng/L	1000	10
TRIP BLANKS (201209190299)						**Sampled on 09/18/2012 0800**		
			Default - Hold test by MWH Labs					
	09/18/2012 08:00	677302	(Default)	Hold test by MWH Labs	NA	--		1

Rounding on totals after summation.
(c) - indicates calculated results

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City of Wichita Falls

QC Ref # 677210 - Endocrine Disruptors Negative Mode - SPE **Analysis Date: 10/17/2012**

201209190294	Jasper Tap	Analyzed by: ARH
201209190296	Lake Wichita	Analyzed by: ARH
201209190297	Lake Arrowhead	Analyzed by: ARH
201209190298	Wastewater Effluent	Analyzed by: ARH

QC Ref # 677302 - Hold test by MWH Labs **Analysis Date: 09/18/2012**

201209190299	TRIP BLANKS	Analyzed by: ADT

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Tel: (626) 386-1100
Fax: (626) 386-1101
1 800 566 LABS (1 800 566 5227)

Laboratory QC
Report: 409579

City of Wichita Falls

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
QC Ref# 677210 - Endocrine Disruptors Negative Mode - SPE by LC-MS-MS						**Analysis Date: 10/16/2012**			
LCS1	Sucralose		2000	1920	ng/L	96	(60-140)		
LCS2	Sucralose		2000	1970	ng/L	99	(60-140)	30	2.6
MBLK	Sucralose			<100	ng/L				
MRL_CHK	Sucralose		100	60.1	ng/L	60	(50-150)		
MS_201209190294	Sucralose	ND	2000	2000	ng/L	100	(60-140)		
MSD_201209190294	Sucralose	ND	2000	2140	ng/L	107	(60-140)	30	6.8

Spike recovery is already corrected for native results.
Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.
Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.
RPD not calculated for LCS2 when different a concentration than LCS1 is used.
RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level).
(S) - indicates surrogate compound.
(I) - indicates internal standard compound.

LABORATORY REPORT

This report contains 5 pages.
(including the cover page)

If you have any questions concerning this report, please do not hesitate to call us at (800) 332-4345 or (574) 233-4777.

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110 S. Hill St., South Bend, IN 46617-2702 USA
T: 800.332.4345 / F: 574.233.8207 / W: UL.com

Laboratory Report

Client: City of Wichita Falls

Attn: Mark Southard
P. O. Box 1431
Wichita Falls, TX 76307

Report: 285963
Priority: Standard Written
Status: Final
PWS ID: TX2430001

Copies to: None

Sample Information

UL ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
2711465	1005 River Road	1623	09/18/12 11:30	Client	09/19/12 09:30
2711466	Lake Arrowhead	1623	09/18/12 14:25	Client	09/19/12 09:30
2711467	Lake Wichita	1623	09/18/12 14:35	Client	09/19/12 09:30

Report Summary

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not esitate to call Jim Vernon at (574) 233-4777.

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Jim Vernon P.M.

Digitally signed by James N. Vernon
Date: 2012.10.02 11:43:15 -04'00'

Authorized Signature | Title | Date

Client Name: City of Wichita Falls
Report #: 285963

UL LLC
110 S. Hill St., South Bend, IN 46617-2702 USA
T: 800.332.4345 / F: 574.233.8207 / W: UL.com

Client Name: City of Wichita Falls Report #: 285963

Sampling Point: 1005 River Road PWS ID: TX2430001

Microbiology									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
—	Giardia	1623	—	0.630	**10.705**	cysts/L	—	09/21/12 09:40	2711465
—	Cryptosporidium	1623	—	0.630	**5.038**	oocysts/L	—	09/21/12 09:40	2711465

For method 1623: The calculated MRL value is dependant on the volume filtered and the volume analyzed for each sample.

Sampling Point: Lake Arrowhead PWS ID: TX2430001

Microbiology									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
—	Giardia	1623	—	0.075	< 0.075	cysts/L	—	09/21/12 09:40	2711466
—	Cryptosporidium	1623	—	0.075	< 0.075	oocysts/L	—	09/21/12 09:40	2711466

For method 1623: The calculated MRL value is dependant on the volume filtered and the volume analyzed for each sample.

Sampling Point: Lake Wichita PWS ID: TX2430001

Microbiology									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
—	Giardia	1623	—	0.075	< 0.075	cysts/L	—	09/21/12 09:40	2711467
—	Cryptosporidium	1623	—	0.075	**0.075**	oocysts/L	—	09/21/12 09:40	2711467

For method 1623: The calculated MRL value is dependant on the volume filtered and the volume analyzed for each sample.

† UL has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

Lab Definitions

Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis.

Internal Standards (IS) - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

Laboratory Duplicate (LD) - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

Laboratory Fortified Blank (LFB) / Laboratory Control Sample (LCS) - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control.

Laboratory Method Blank (LMB) / Laboratory Reagent Blank (LRB) - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

Laboratory Trip Blank (LTB) / Field Reagent Blank (FRB) - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD) - is a sample aliquot taken from the same field sample source as the Matrix Spike Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix.

Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM) - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results.

Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV) - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the calibration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

Surrogate Standard (SS) / Surrogate Analyte (SUR) - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.

LABORATORY REPORT

This report contains 12 pages.
(including the cover page)

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Laboratory Report

Client: City of Wichita Falls

Attn: Mark Southard
P. O. Box 1431
Wichita Falls, TX 76307

Report: 285068
Priority: Standard Written
Status: Final
PWS ID: TX2430001

Copies to: None

Sample Information

UL ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
2701614	Waste Water Effluent	537	08/29/12 13:30	Client	08/30/12 10:30
2701615	Waste Water Effluent	L221	08/29/12 13:30	Client	08/30/12 10:30
2701616	Waste Water Effluent	S170	08/29/12 13:30	Client	08/30/12 10:30
2701617	Waste Water Effluent	L220	08/29/12 13:30	Client	08/30/12 10:30
2701618	Waste Water Effluent	L200	08/29/12 13:30	Client	08/30/12 10:30
2701619	Waste Water Effluent	L211	08/29/12 13:30	Client	08/30/12 10:30
2701620	Waste Water Effluent	525.2	08/29/12 13:30	Client	08/30/12 10:30
2701621	Waste Water Effluent	521	08/29/12 13:30	Client	08/30/12 10:30
2701622	Waste Water Effluent	1613	08/29/12 13:30	Client	08/30/12 10:30
2701623	Waste Water Effluent	7110 B	08/29/12 13:30	Client	08/30/12 10:30
2701624	Waste Water Effluent	245.1	08/29/12 13:30	Client	08/30/12 10:30
2701624	Waste Water Effluent	200.7	08/29/12 13:30	Client	08/30/12 10:30
2701625	Waste Water Effluent	515.3	08/29/12 13:30	Client	08/30/12 10:30
2701626	Waste Water Effluent	331.0	08/29/12 13:30	Client	08/30/12 10:30
2701627	Waste Water Effluent	524.2	08/29/12 13:30	Client	08/30/12 10:30
2701628	Waste Water Effluent	552.2	08/29/12 13:30	Client	08/30/12 10:30
2701629	Waste Water Effluent	547	08/29/12 13:30	Client	08/30/12 10:30
2701630	Waste Water Effluent	531.1	08/29/12 13:30	Client	08/30/12 10:30
2701631	Waste Water Effluent	505	08/29/12 13:30	Client	08/30/12 10:30
2701632	Waste Water Effluent	504.1	08/29/12 13:30	Client	08/30/12 10:30

Report Summary

Note: In the Method 525.2 analysis, the propachlor recovery in the LFB (40%) was outside the acceptane limits of 70-130%.

Note: In the Method L220 analysis, the sulfamerazine recovery in the LFB (66%) was outside the acceptance limits of 75-128%.

Note: In the Method L220 analysis, the sulfamethazine recovery in the LFB (55%) was outside the acceptance limits of 63-122%.

Note: In the Method L221 analysis, triclosan is not reportable in the sample submitted due to matrix interference.

UL LLC
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Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call Jim Vernon at (574) 233-4777.

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Jim Vernon P.M.

Digitally signed by James N. Vernon
Date: 2012.10.09 16:15:22 -04'00'

Authorized Signature | Title | Date

Client Name: City of Wichita Falls
Report #: 285068

Client Name: City of Wichita Falls Report #: 285068

Sampling Point: Waste Water Effluent PWS ID: TX2430001

General Chemistry

Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
14797-73-0	Perchlorate	331.0	—	0.05	**0.17**	ug/L	—	09/04/12 23:24	2701626

Metals

Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
7439-89-6	Iron	200.7	0.3 ^	0.020	**0.090**	mg/L	09/07/12 11:40	09/10/12 12:08	2701624
7439-97-6	Mercury	245.1	2 *	0.1	< 0.1	ug/L	09/12/12 10:00	09/13/12 13:57	2701624

Radionuclides

Analyte ID #	Analyte	Method	Reg Limit	DL**	Result	Units	Preparation Date	Analyzed	UL ID #
—	Gross Alpha	7110 B	15 *	1.74	-0.93 ± 0.90	pCi/L	09/05/12 07:48	09/06/12 11:14	2701623
—	Gross Beta	7110 B	—	1.0	**20.6 ± 1.2**	pCi/L	09/05/12 07:48	09/06/12 11:14	2701623

** Detection Limit (DL) shall be that concentration which can be counted with a precision of plus or minus 100% at the 95 % confidence level.

Disinfection Byproducts

Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
5589-96-8	Bromochloroacetic acid	552.2	—	1.0	**21**	ug/L	09/10/12 07:50	09/10/12 17:03	2701628
631-64-1	Dibromoacetic acid	552.2	—	1.0	**26**	ug/L	09/10/12 07:50	09/10/12 17:03	2701628
79-43-6	Dichloroacetic acid	552.2	—	1.0	**15**	ug/L	09/10/12 07:50	09/10/12 17:03	2701628
79-08-3	Monobromoacetic acid	552.2	—	1.0	**5.2**	ug/L	09/10/12 07:50	09/10/12 17:03	2701628
79-11-8	Monochloroacetic acid	552.2	—	2.0	**3.2**	ug/L	09/10/12 07:50	09/10/12 17:03	2701628
76-03-9	Trichloroacetic acid	552.2	—	1.0	**11**	ug/L	09/10/12 07:50	09/10/12 17:03	2701628
—	Total HAA5	552.2	60 *	2.0	**60.4**	ug/L	09/10/12 07:50	09/10/12 17:03	2701628

Semi-volatile Organic Chemicals

Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed	UL ID #
1746-01-6	2,3,7,8-Tetrachlorodibenzo-p-Dioxin	1613	30 *	5.0	< 5.0	pg/L	09/11/12 07:51	09/13/12 04:31	2701622
96-12-8	1,2-Dibromo-3-chloropropane (DBCP)	504.1	0.2 *	0.01	< 0.01	ug/L	09/04/12 15:51	09/04/12 23:45	2701632
106-93-4	1,2-Dibromoethane (EDB)	504.1	0.05 *	0.01	< 0.01	ug/L	09/04/12 15:51	09/04/12 23:45	2701632
12674-11-2	Aroclor 1016	505	—	0.08	< 0.08	ug/L	09/12/12 15:55	09/12/12 23:27	2701631
11104-28-2	Aroclor 1221	505	—	0.19	< 0.19	ug/L	09/12/12 15:55	09/12/12 23:27	2701631
11141-16-5	Aroclor 1232	505	—	0.23	< 0.23	ug/L	09/12/12 15:55	09/12/12 23:27	2701631
53469-21-9	Aroclor 1242	505	—	0.26	< 0.26	ug/L	09/12/12 15:55	09/12/12 23:27	2701631
12672-29-6	Aroclor 1248	505	—	0.1	< 0.1	ug/L	09/12/12 15:55	09/12/12 23:27	2701631
11097-69-1	Aroclor 1254	505	—	0.1	< 0.1	ug/L	09/12/12 15:55	09/12/12 23:27	2701631
11096-82-5	Aroclor 1260	505	—	0.2	< 0.2	ug/L	09/12/12 15:55	09/12/12 23:27	2701631
57-74-9	Chlordane	505	2 *	0.1	< 0.1	ug/L	09/12/12 15:55	09/12/12 23:27	2701631
8001-35-2	Toxaphene	505	3 *	1.0	< 1.0	ug/L	09/12/12 15:55	09/12/12 23:27	2701631
94-75-7	2,4-D	515.3	70 *	0.1	< 0.1	ug/L	09/12/12 09:48	09/12/12 22:56	2701625
75-99-0	Dalapon	515.3	200 *	1.0	< 1.0	ug/L	09/12/12 09:48	09/12/12 22:56	2701625

1918-00-9	Dicamba	515.3	—	0.1	< 0.1	ug/L	09/12/12 09:48	09/12/12 22:56	2701625
88-85-7	Dinoseb	515.3	7 *	0.1	< 0.1	ug/L	09/12/12 09:48	09/12/12 22:56	2701625
87-86-5	Pentachlorophenol	515.3	1 *	0.04	< 0.04	ug/L	09/12/12 09:48	09/12/12 22:56	2701625
1918-02-1	Picloram	515.3	500 *	0.1	< 0.1	ug/L	09/12/12 09:48	09/12/12 22:56	2701625
93-72-1	2,4,5-TP (Silvex)	515.3	50 *	0.1	< 0.1	ug/L	09/12/12 09:48	09/12/12 22:56	2701625
930-55-2	N-Nitrosopyrrolidine (NPYR)	521	—	2.0	< 2.0	ng/L	09/10/12 09:00	09/13/12 02:21	2701621
924-16-3	N-Nitrosodi-N-butylamine (NDBA)	521	—	4.0	< 4.0	ng/L	09/10/12 09:00	09/13/12 02:21	2701621
55-18-5	N-Nitrosodiethylamine (NDEA)	521	—	5.0	< 5.0	ng/L	09/10/12 09:00	09/13/12 02:21	2701621
62-75-9	N-Nitrosodimethylamine (NDMA)	521	—	2.0	**17**	ng/L	09/10/12 09:00	09/13/12 02:21	2701621
621-64-7	N-Nitrosodi-N-propylamine (NDPA)	521	—	7.0	< 7.0	ng/L	09/10/12 09:00	09/13/12 02:21	2701621
10595-95-6	N-Nitrosomethylethylamine (NMEA)	521	—	3.0	< 3.0	ng/L	09/10/12 09:00	09/13/12 02:21	2701621
100-75-4	N-Nitrosopiperidine (NPIP)	521	—	2.0	< 2.0	ng/L	09/10/12 09:00	09/13/12 02:21	2701621
15972-60-8	Alachlor	525.2	2 *	0.1	< 0.1	ug/L	09/06/12 09:00	09/13/12 05:54	2701620
309-00-2	Aldrin	525.2	—	0.1	< 0.1	ug/L	09/06/12 09:00	09/13/12 05:54	2701620
1912-24-9	Atrazine	525.2	3 *	0.1	< 0.1	ug/L	09/06/12 09:00	09/13/12 05:54	2701620
50-32-8	Benzo(a)pyrene	525.2	0.2 *	0.02	< 0.02	ug/L	09/06/12 09:00	09/13/12 05:54	2701620
58-89-9	gamma-BHC (Lindane)	525.2	0.2 *	0.02	< 0.02	ug/L	09/06/12 09:00	09/13/12 05:54	2701620
23184-66-9	Butachlor	525.2	—	0.1	< 0.1	ug/L	09/06/12 09:00	09/13/12 05:54	2701620
60-57-1	Dieldrin	525.2	—	0.1	< 0.1	ug/L	09/06/12 09:00	09/13/12 05:54	2701620
103-23-1	Di(2-ethylhexyl)adipate	525.2	400 *	0.6	< 0.6	ug/L	09/06/12 09:00	09/13/12 05:54	2701620
117-81-7	Di(2-ethylhexyl)phthalate	525.2	6 *	0.6	**4.2**	ug/L	09/06/12 09:00	09/13/12 05:54	2701620
72-20-8	Endrin	525.2	2 *	0.01	< 0.01	ug/L	09/06/12 09:00	09/13/12 05:54	2701620
76-44-8	Heptachlor	525.2	0.4 *	0.04	< 0.04	ug/L	09/06/12 09:00	09/13/12 05:54	2701620
1024-57-3	Heptachlor epoxide	525.2	0.2 *	0.02	< 0.02	ug/L	09/06/12 09:00	09/13/12 05:54	2701620
118-74-1	Hexachlorobenzene	525.2	1 *	0.1	< 0.1	ug/L	09/06/12 09:00	09/13/12 05:54	2701620
77-47-4	Hexachlorocyclopentadiene	525.2	50 *	0.1	< 0.1	ug/L	09/06/12 09:00	09/13/12 05:54	2701620
72-43-5	Methoxychlor	525.2	40 *	0.1	< 0.1	ug/L	09/06/12 09:00	09/13/12 05:54	2701620
51218-45-2	Metolachlor	525.2	—	0.1	< 0.1	ug/L	09/06/12 09:00	09/13/12 05:54	2701620
21087-64-9	Metribuzin	525.2	—	0.1	< 0.1	ug/L	09/06/12 09:00	09/13/12 05:54	2701620
1918-16-7	Propachlor	525.2	—	0.1	< 0.1	ug/L	09/06/12 09:00	09/13/12 05:54	2701620
122-34-9	Simazine	525.2	4 *	0.07	< 0.07	ug/L	09/06/12 09:00	09/13/12 05:54	2701620
116-06-3	Aldicarb	531.1	—	0.5	< 0.5	ug/L	09/17/12 12:00	09/18/12 21:45	2701630
1646-88-4	Aldicarb sulfone	531.1	—	0.7	< 0.7	ug/L	09/17/12 12:00	09/18/12 21:45	2701630
1646-87-3	Aldicarb sulfoxide	531.1	—	0.5	< 0.5	ug/L	09/17/12 12:00	09/18/12 21:45	2701630
63-25-2	Carbaryl	531.1	—	0.5	< 0.5	ug/L	09/17/12 12:00	09/18/12 21:45	2701630
1563-66-2	Carbofuran	531.1	40 *	0.9	< 0.9	ug/L	09/17/12 12:00	09/18/12 21:45	2701630
16655-82-6	3-Hydroxycarbofuran	531.1	—	0.5	< 0.5	ug/L	09/17/12 12:00	09/18/12 21:45	2701630
16752-77-5	Methomyl	531.1	—	0.5	< 0.5	ug/L	09/17/12 12:00	09/18/12 21:45	2701630
23135-22-0	Oxamyl	531.1	200 *	1.0	< 1.0	ug/L	09/17/12 12:00	09/18/12 21:45	2701630
1071-83-6	Glyphosate	547	700 *	6.0	< 6.0	ug/L	09/06/12 10:30	09/08/12 05:24	2701629

Any positive Aroclor result would require analysis for total PCB as decachlorobiphenyl by method 508A (MCL = 0.5 ug/L)

Volatile Organic Chemicals

Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
71-43-2	Benzene	524.2	5 *	0.5	< 0.5	ug/L	—	09/04/12 18:26	2701627
108-86-1	Bromobenzene	524.2	—	0.5	< 0.5	ug/L	—	09/04/12 18:26	2701627
74-97-5	Bromochloromethane	524.2	—	0.5	< 0.5	ug/L	—	09/04/12 18:26	2701627
75-27-4	Bromodichloromethane	524.2	—	0.5	**29**	ug/L	—	09/04/12 18:26	2701627
75-25-2	Bromoform	524.2	—	0.5	**25**	ug/L	—	09/04/12 18:26	2701627

74-83-9	Bromomethane	524.2	—	0.5	< 0.5	ug/L	—	09/04/12 18:26	2701627
104-51-8	n-Butylbenzene	524.2	—	0.5	< 0.5	ug/L	—	09/04/12 18:26	2701627
135-98-8	sec-Butylbenzene	524.2	—	0.5	< 0.5	ug/L	—	09/04/12 18:26	2701627
98-06-6	tert-Butylbenzene	524.2	—	0.5	< 0.5	ug/L	—	09/04/12 18:26	2701627
56-23-5	Carbon tetrachloride	524.2	5 *	0.5	< 0.5	ug/L	—	09/04/12 18:26	2701627
108-90-7	Chlorobenzene	524.2	100 *	0.5	< 0.5	ug/L	—	09/04/12 18:26	2701627
75-00-3	Chloroethane	524.2	—	0.5	< 0.5	ug/L	—	09/04/12 18:26	2701627
67-66-3	Chloroform	524.2	—	0.5	**7.7**	ug/L	—	09/04/12 18:26	2701627
74-87-3	Chloromethane	524.2	—	0.5	< 0.5	ug/L	—	09/04/12 18:26	2701627
95-49-8	2-Chlorotoluene	524.2	—	0.5	< 0.5	ug/L	—	09/04/12 18:26	2701627
106-43-4	4-Chlorotoluene	524.2	—	0.5	< 0.5	ug/L	—	09/04/12 18:26	2701627
124-48-1	Dibromochloromethane	524.2	—	0.5	**51**	ug/L	—	09/04/12 18:26	2701627
—	Total Trihalomethanes	524.2	80 *	0.5	**112.7**	ug/L	—	09/04/12 18:26	2701627
96-12-8	1,2-Dibromo-3-chloropropane (DBCP)	524.2	—	0.2	< 0.2	ug/L	—	09/04/12 18:26	2701627
106-93-4	1,2-Dibromoethane (EDB)	524.2	—	0.2	< 0.2	ug/L	—	09/04/12 18:26	2701627
74-95-3	Dibromomethane	524.2	—	0.5	< 0.5	ug/L	—	09/04/12 18:26	2701627
95-50-1	1,2-Dichlorobenzene	524.2	600 *	0.5	< 0.5	ug/L	—	09/04/12 18:26	2701627
541-73-1	1,3-Dichlorobenzene	524.2	—	0.5	< 0.5	ug/L	—	09/04/12 18:26	2701627
106-46-7	1,4-Dichlorobenzene	524.2	75 *	0.5	< 0.5	ug/L	—	09/04/12 18:26	2701627
75-71-8	Dichlorodifluoromethane	524.2	—	0.5	< 0.5	ug/L	—	09/04/12 18:26	2701627
75-34-3	1,1-Dichloroethane	524.2	—	0.5	< 0.5	ug/L	—	09/04/12 18:26	2701627
107-06-2	1,2-Dichloroethane	524.2	5 *	0.5	< 0.5	ug/L	—	09/04/12 18:26	2701627
75-35-4	1,1-Dichloroethylene	524.2	7 *	0.5	< 0.5	ug/L	—	09/04/12 18:26	2701627
156-59-2	cis-1,2-Dichloroethylene	524.2	70 *	0.5	< 0.5	ug/L	—	09/04/12 18:26	2701627
156-60-5	trans-1,2-Dichloroethylene	524.2	100 *	0.5	< 0.5	ug/L	—	09/04/12 18:26	2701627
75-09-2	Dichloromethane	524.2	5 *	0.5	< 0.5	ug/L	—	09/04/12 18:26	2701627
78-87-5	1,2-Dichloropropane	524.2	5 *	0.5	< 0.5	ug/L	—	09/04/12 18:26	2701627
142-28-9	1,3-Dichloropropane	524.2	—	0.5	< 0.5	ug/L	—	09/04/12 18:26	2701627
594-20-7	2,2-Dichloropropane	524.2	—	0.5	< 0.5	ug/L	—	09/04/12 18:26	2701627
563-58-6	1,1-Dichloropropylene	524.2	—	0.5	< 0.5	ug/L	—	09/04/12 18:26	2701627
10061-01-5	cis-1,3-Dichloropropylene	524.2	—	0.5	< 0.5	ug/L	—	09/04/12 18:26	2701627
10061-02-6	trans-1,3-Dichloropropylene	524.2	—	0.5	< 0.5	ug/L	—	09/04/12 18:26	2701627
542-75-6	1,3-Dichloropropylene, cis & trans	524.2	—	0.5	< 0.5	ug/L	—	09/04/12 18:26	2701627
100-41-4	Ethylbenzene	524.2	700 *	0.5	< 0.5	ug/L	—	09/04/12 18:26	2701627
87-68-3	Hexachlorobutadiene	524.2	—	0.5	< 0.5	ug/L	—	09/04/12 18:26	2701627
98-82-8	Isopropylbenzene	524.2	—	0.5	< 0.5	ug/L	—	09/04/12 18:26	2701627
99-87-6	4-Isopropyltoluene	524.2	—	0.5	< 0.5	ug/L	—	09/04/12 18:26	2701627
1634-04-4	Methyl-t-butyl ether (MTBE)	524.2	—	0.5	< 0.5	ug/L	—	09/04/12 18:26	2701627
91-20-3	Naphthalene	524.2	—	0.5	< 0.5	ug/L	—	09/04/12 18:26	2701627
103-65-1	n-Propylbenzene	524.2	—	0.5	< 0.5	ug/L	—	09/04/12 18:26	2701627
100-42-5	Styrene	524.2	100 *	0.5	< 0.5	ug/L	—	09/04/12 18:26	2701627
630-20-6	1,1,1,2-Tetrachloroethane	524.2	—	0.5	< 0.5	ug/L	—	09/04/12 18:26	2701627
79-34-5	1,1,2,2-Tetrachloroethane	524.2	—	0.5	< 0.5	ug/L	—	09/04/12 18:26	2701627
127-18-4	Tetrachloroethylene	524.2	5 *	0.5	< 0.5	ug/L	—	09/04/12 18:26	2701627
108-88-3	Toluene	524.2	1000 *	0.5	< 0.5	ug/L	—	09/04/12 18:26	2701627
87-61-6	1,2,3-Trichlorobenzene	524.2	—	0.5	< 0.5	ug/L	—	09/04/12 18:26	2701627
120-82-1	1,2,4-Trichlorobenzene	524.2	70 *	0.5	< 0.5	ug/L	—	09/04/12 18:26	2701627
71-55-6	1,1,1-Trichloroethane	524.2	200 *	0.5	< 0.5	ug/L	—	09/04/12 18:26	2701627
79-00-5	1,1,2-Trichloroethane	524.2	5 *	0.5	< 0.5	ug/L	—	09/04/12 18:26	2701627
79-01-6	Trichloroethylene	524.2	5 *	0.5	< 0.5	ug/L	—	09/04/12 18:26	2701627

75-69-4	Trichlorofluoromethane	524.2	—	0.5	< 0.5	ug/L	—	09/04/12 18:26	2701627
96-18-4	1,2,3-Trichloropropane	524.2	—	0.5	< 0.5	ug/L	—	09/04/12 18:26	2701627
95-63-6	1,2,4-Trimethylbenzene	524.2	—	0.5	< 0.5	ug/L	—	09/04/12 18:26	2701627
108-67-8	1,3,5-Trimethylbenzene	524.2	—	0.5	< 0.5	ug/L	—	09/04/12 18:26	2701627
75-01-4	Vinyl chloride	524.2	2 *	0.2	< 0.2	ug/L	—	09/04/12 18:26	2701627
95-47-6	1,2-Xylene	524.2	—	0.5	< 0.5	ug/L	—	09/04/12 18:26	2701627
179601-23-1	1,3 + 1,4-Xylene	524.2	—	0.5	< 0.5	ug/L	—	09/04/12 18:26	2701627
1330-20-7	Xylenes, Total	524.2	10000 *	0.5	< 0.5	ug/L	—	09/04/12 18:26	2701627

Compliance monitoring for 1,2-Dibromo-3-chloropropane (DBCP) must be done using EPA method 504.1.

Compliance monitoring for 1,2-Dibromoethane (EDB) must be done using EPA method 504.1.

UL Methods

Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
375-73-5	Perfluorobutanesulfonic acid (PFBS)	537	—	90.0	< 90.0	ng/L	09/10/12 09:00	09/13/12 02:03	2701614
375-85-9	Perfluoroheptanoic acid (PFHpA)	537	—	10.0	< 10.0	ng/L	09/10/12 09:00	09/13/12 02:03	2701614
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	537	—	30.0	< 30.0	ng/L	09/10/12 09:00	09/13/12 02:03	2701614
375-95-1	Perfluorononanoic acid (PFNA)	537	—	20.0	< 20.0	ng/L	09/10/12 09:00	09/13/12 02:03	2701614
1763-23-1	Perfluorooctane sulfonate (PFOS)	537	—	40.0	< 40.0	ng/L	09/10/12 09:00	09/13/12 02:03	2701614
335-67-1	Perfluorooctanoic acid (PFOA)	537	—	20	**28**	ng/L	09/10/12 09:00	09/13/12 02:03	2701614
80-05-7	Bisphenol A	L200	—	0.1	< 0.1	ug/L	09/07/12 09:00	09/08/12 20:24	2701618
25154-52-3	Nonylphenol, isomer mix	L200	—	0.5	< 0.5	ug/L	09/07/12 09:00	09/08/12 20:24	2701618
1806-26-4	4-n-Octylphenol	L200	—	0.5	< 0.5	ug/L	09/07/12 09:00	09/08/12 20:24	2701618
140-66-9	4-tert-Octylphenol	L200	—	0.5	< 0.5	ug/L	09/07/12 09:00	09/08/12 20:24	2701618
87-86-5	Pentachlorophenol	L200	—	0.1	< 0.1	ug/L	09/07/12 09:00	09/08/12 20:24	2701618
92-69-3	Phenylphenol	L200	—	0.1	< 0.1	ug/L	09/07/12 09:00	09/08/12 20:24	2701618
79-94-7	Tetrabromobisphenol A	L200	—	0.1	< 0.1	ug/L	09/07/12 09:00	09/08/12 20:24	2701618
88-06-2	2,4,6-Trichlorophenol	L200	—	0.1	< 0.1	ug/L	09/07/12 09:00	09/08/12 20:24	2701618
56-53-1	Diethylstilbestrol (DES)	L211	—	0.5	< 0.5	ng/L	09/10/12 07:52	09/11/12 13:31	2701619
57-91-0	17alpha-Estradiol	L211	—	0.5	< 0.5	ng/L	09/10/12 07:52	09/11/12 13:31	2701619
50-28-2	17beta-Estradiol	L211	—	0.5	< 0.5	ng/L	09/10/12 07:52	09/11/12 13:31	2701619
50-27-1	Estriol	L211	—	0.5	< 0.5	ng/L	09/10/12 07:52	09/11/12 13:31	2701619
53-16-7	Estrone	L211	—	0.5	< 0.5	ng/L	09/10/12 07:52	09/11/12 13:31	2701619
57-63-6	17alpha-Ethynyl estradiol	L211	—	0.5	< 0.5	ng/L	09/10/12 07:52	09/11/12 13:31	2701619
57-83-0	Progesterone	L211	—	0.1	< 0.1	ng/L	09/10/12 07:52	09/11/12 13:31	2701619
481-30-1	cis-Testosterone	L211	—	0.1	< 0.1	ng/L	09/10/12 07:52	09/11/12 13:31	2701619
58-22-0	trans-Testosterone	L211	—	0.1	< 0.1	ng/L	09/10/12 07:52	09/11/12 13:31	2701619
103-90-2	Acetaminophen	L220	—	0.005	**0.008**	ug/L	09/05/12 07:30	09/19/12 22:03	2701617
60-80-0	Antipyrine	L220	—	0.001	**0.004**	ug/L	09/05/12 07:30	09/19/12 22:03	2701617
29122-68-7	Atenolol	L220	—	0.001	**0.049**	ug/L	09/05/12 07:30	09/19/12 22:03	2701617
83905-01-5	Azithromycin	L220	—	0.005	< 0.005	ug/L	09/05/12 07:30	09/19/12 22:03	2701617
1405-87-4	Bacitracin	L220	—	1.0	< 1.0	ug/L	09/05/12 07:30	09/19/12 22:03	2701617
58-08-2	Caffeine	L220	—	0.05	< 0.05	ug/L	09/05/12 07:30	09/19/12 22:03	2701617
6804-07-5	Carbadox	L220	—	0.005	< 0.005	ug/L	09/05/12 07:30	09/19/12 22:03	2701617
298-46-4	Carbamazepine	L220	—	0.001	**0.066**	ug/L	09/05/12 07:30	09/19/12 22:03	2701617
85721-33-1	Ciprofloxacin	L220	—	0.05	< 0.05	ug/L	09/05/12 07:30	09/19/12 22:03	2701617
486-56-6	Cotinine	L220	—	0.001	**0.025**	ug/L	09/05/12 07:30	09/19/12 22:03	2701617
134-62-3	DEET	L220	—	0.005	**0.035**	ug/L	09/05/12 07:30	09/19/12 22:03	2701617
50-02-2	Dexamethasone	L220	—	0.005	< 0.005	ug/L	09/05/12 07:30	09/19/12 22:03	2701617
439-14-5	Diazepam	L220	—	0.001	< 0.001	ug/L	09/05/12 07:30	09/19/12 22:03	2701617
42399-41-7	Diltiazem	L220	—	0.0001	< 0.0001	ug/L	09/05/12 07:30	09/19/12 22:03	2701617

93106-60-6	Enrofloxacin	L220	---	0.05	< 0.05	ug/L	09/05/12 07:30	09/19/12 22:03	2701617
114-07-8	Erythromycin	L220	---	0.001	< 0.001	ug/L	09/05/12 07:30	09/19/12 22:03	2701617
59333-67-4	Fluoxetine (Prozac)	L220	---	0.001	**0.012**	ug/L	09/05/12 07:30	09/19/12 22:03	2701617
73334-07-3	Iopromide	L220	---	0.05	< 0.05	ug/L	09/05/12 07:30	09/19/12 22:03	2701617
11054-70-9	Lasalocid	L220	---	0.001	< 0.001	ug/L	09/05/12 07:30	09/19/12 22:03	2701617
154-21-2	Lincomycin	L220	---	0.0001	< 0.0001	ug/L	09/05/12 07:30	09/19/12 22:03	2701617
57-53-4	Meprobamate	L220	---	0.001	**0.533**	ug/L	09/05/12 07:30	09/20/12 09:00	2701617
17090-79-8	Monensin	L220	---	0.001	< 0.001	ug/L	09/05/12 07:30	09/19/12 22:03	2701617
55134-13-9	Narasin	L220	---	0.001	< 0.001	ug/L	09/05/12 07:30	09/19/12 22:03	2701617
22083-74-5	Nicotine	L220	---	0.005	**0.025**	ug/L	09/05/12 07:30	09/19/12 22:03	2701617
70458-96-7	Norfloxacin	L220	---	0.05	< 0.05	ug/L	09/05/12 07:30	09/19/12 22:03	2701617
7060-74-4	Oleandomycin	L220	---	0.001	< 0.001	ug/L	09/05/12 07:30	09/19/12 22:03	2701617
611-59-6	Paraxanthine	L220	---	0.005	**0.031**	ug/L	09/05/12 07:30	09/19/12 22:03	2701617
125-33-7	Primidone	L220	---	0.005	**0.461**	ug/L	09/05/12 07:30	09/19/12 22:03	2701617
80214-83-1	Roxithromycin	L220	---	0.001	< 0.001	ug/L	09/05/12 07:30	09/19/12 22:03	2701617
53003-10-4	Salinomycin	L220	---	0.0001	< 0.0001	ug/L	09/05/12 07:30	09/19/12 22:03	2701617
79902-63-9	Simvastatin	L220	---	0.005	< 0.005	ug/L	09/05/12 07:30	09/19/12 22:03	2701617
80-32-0	Sulfachloropyridazine	L220	---	0.005	< 0.005	ug/L	09/05/12 07:30	09/19/12 22:03	2701617
68-35-9	Sulfadiazine	L220	---	0.001	< 0.001	ug/L	09/05/12 07:30	09/19/12 22:03	2701617
122-11-2	Sulfadimethoxine	L220	---	0.0001	< 0.0001	ug/L	09/05/12 07:30	09/19/12 22:03	2701617
127-79-7	Sulfamerazine	L220	---	0.001	< 0.001	ug/L	09/05/12 07:30	09/19/12 22:03	2701617
57-68-1	Sulfamethazine	L220	---	0.001	< 0.001	ug/L	09/05/12 07:30	09/19/12 22:03	2701617
144-82-1	Sulfamethizole	L220	---	0.001	< 0.001	ug/L	09/05/12 07:30	09/19/12 22:03	2701617
723-46-6	Sulfamethoxazole	L220	---	0.001	**0.005**	ug/L	09/05/12 07:30	09/19/12 22:03	2701617
599-79-1	Sulfasalazine	L220	---	0.005	< 0.005	ug/L	09/05/12 07:30	09/19/12 22:03	2701617
72-14-0	Sulfathiazole	L220	---	0.001	< 0.001	ug/L	09/05/12 07:30	09/19/12 22:03	2701617
83-67-0	Theobromine	L220	---	0.05	**0.69**	ug/L	09/05/12 07:30	09/19/12 22:03	2701617
738-70-5	Trimethoprim	L220	---	0.001	< 0.001	ug/L	09/05/12 07:30	09/19/12 22:03	2701617
74610-55-2	Tylosin	L220	---	0.001	< 0.001	ug/L	09/05/12 07:30	09/19/12 22:03	2701617
21411-53-0	Virginiamycin M1	L220	---	0.001	< 0.001	ug/L	09/05/12 07:30	09/19/12 22:03	2701617
41859-67-0	Bezafibrate	L221	---	0.0005	< 0.0005	ug/L	09/11/12 08:00	09/26/12 12:02	2701615
56-75-7	Chloramphenicol	L221	---	0.005	< 0.048	ug/L	09/11/12 08:00	09/26/12 12:56	2701615
64-72-2	Chlorotetracycline	L221	---	0.05	< 0.05	ug/L	09/11/12 08:00	09/26/12 12:02	2701615
882-09-7	Clofibric acid	L221	---	0.0005	< 0.0005	ug/L	09/11/12 08:00	09/26/12 12:02	2701615
15307-86-5	Diclofenac	L221	---	0.0005	< 0.0005	ug/L	09/11/12 08:00	09/26/12 12:02	2701615
57-41-0	Dilantin	L221	---	0.002	**0.372**	ug/L	09/11/12 08:00	09/26/12 12:56	2701615
83038-87-3	Doxycycline	L221	---	0.05	< 0.05	ug/L	09/11/12 08:00	09/26/12 12:02	2701615
25812-30-0	Gemfibrozil	L221	---	0.0005	< 0.0005	ug/L	09/11/12 08:00	09/26/12 12:02	2701615
15687-27-1	Ibuprofen	L221	---	0.05	< 0.48	ug/L	09/11/12 08:00	09/26/12 12:56	2701615
51-48-9	Levothyroxine (Synthroid)	L221	---	0.002	< 0.002	ug/L	09/11/12 08:00	09/26/12 12:02	2701615
22204-53-1	Naproxen	L221	---	0.002	< 0.002	ug/L	09/11/12 08:00	09/26/12 12:02	2701615
2058-46-0	Oxytetracycline	L221	---	0.5	< 0.5	ug/L	09/11/12 08:00	09/26/12 12:02	2701615
61-33-6	Penicillin G	L221	---	0.002	< 0.002	ug/L	09/11/12 08:00	09/26/12 12:02	2701615
87-08-1	Penicillin V	L221	---	0.002	< 0.002	ug/L	09/11/12 08:00	09/26/12 12:02	2701615
53-03-2	Prednisone	L221	---	0.002	< 0.002	ug/L	09/11/12 08:00	09/26/12 12:02	2701615
69-72-7	Salicylic acid	L221	---	0.05	**0.17**	ug/L	09/11/12 08:00	09/26/12 12:02	2701615
60-54-8	Tetracycline	L221	---	0.5	< 0.5	ug/L	09/11/12 08:00	09/26/12 12:02	2701615
58-55-9	Theophylline	L221	---	0.005	**0.035**	ug/L	09/11/12 08:00	09/26/12 12:02	2701615
102-20-2	Triclocarban	L221	---	0.005	**0.087**	ug/L	09/11/12 08:00	09/26/12 12:02	2701615
1222-05-5	Galaxolide	S170	---	10	**710**	ng/L	09/05/12 09:00	09/06/12 12:01	2701616
21145-77-7	Tonalid	S170	---	10	**100**	ng/L	09/05/12 09:00	09/06/12 12:01	2701616

† UL has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

Lab Definitions

Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis.

Internal Standards (IS) - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

Laboratory Duplicate (LD) - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

Laboratory Fortified Blank (LFB) / Laboratory Control Sample (LCS) - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control.

Laboratory Method Blank (LMB) / Laboratory Reagent Blank (LRB) - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

Laboratory Trip Blank (LTB) / Field Reagent Blank (FRB) - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD) - is a sample aliquot taken from the same field sample source as the Matrix Spike Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix.

Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM) - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results.

Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV) - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the calibration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

Surrogate Standard (SS) / Surrogate Analyte (SUR) - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.

LABORATORY REPORT

This report contains 5 pages.
(including the cover page)

If you have any questions concerning this report, please do not hesitate to call us at (800) 332-4345 or (574) 233-4777.

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UL LLC
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T: 800.332.4345 / F: 574.233.8207 / W: UL.com

Laboratory Report

Client: City of Wichita Falls

Attn: Mark Southard
P. O. Box 1431
Wichita Falls, TX 76307

Report: 284235
Priority: Standard Written
Status: Final
PWS ID: TX2430001

Copies to: None

Sample Information

UL ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
2693166	1005 River Road	1623	08/14/12 13:46	Client	08/15/12 09:30
2693167	Lake Arrowhead	1623	08/14/12 14:01	Client	08/15/12 09:30
2693168	Lake Wichita	1623	08/14/12 14:10	Client	08/15/12 09:30

Report Summary

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not esitate to call Jim Vernon at (574) 233-4777.

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Jim Vernon P.M.

Digitally signed by James N. Vernon
Date: 2012.08.29 09:42:46 -04'00'

Authorized Signature | Title | Date

Client Name: City of Wichita Falls
Report #: 284235

UL LLC
110 S. Hill St., South Bend, IN 46617-2702 USA
T: 800.332.4345 / F: 574.233.8207 / W: UL.com

Client Name: City of Wichita Falls Report #: 284235

Sampling Point: 1005 River Road PWS ID: TX2430001

Microbiology									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
—	Giardia	1623	—	0.435	**0.870**	cysts/L	—	08/17/12 09:40	2693166
—	Cryptosporidium	1623	—	0.435	**0.435**	oocysts/L	—	08/17/12 09:40	2693166

For method 1623: The calculated MRL value is dependant on the volume filtered and the volume analyzed for each sample.

Sampling Point: Lake Arrowhead PWS ID: TX2430001

Microbiology									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
—	Giardia	1623	—	0.077	< 0.077	cysts/L	—	08/17/12 09:40	2693167
—	Cryptosporidium	1623	—	0.077	< 0.077	oocysts/L	—	08/17/12 09:40	2693167

For method 1623: The calculated MRL value is dependant on the volume filtered and the volume analyzed for each sample.

Sampling Point: Lake Wichita PWS ID: TX2430001

Microbiology									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
—	Giardia	1623	—	0.111	< 0.111	cysts/L	—	08/17/12 09:40	2693168
—	Cryptosporidium	1623	—	0.111	< 0.111	oocysts/L	—	08/17/12 09:40	2693168

For method 1623: The calculated MRL value is dependant on the volume filtered and the volume analyzed for each sample.

† UL has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

Lab Definitions

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LABORATORY REPORT

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T: 800.332.4345 / F: 574.233.8207 / W: UL.com

Laboratory Report

Client: City of Wichita Falls

Attn: Mark Southard
P. O. Box 1431
Wichita Falls, TX 76307

Report: 283518
Priority: Standard Written
Status: Final
PWS ID: TX2430001

Copies to: None

Sample Information

UL ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
2685933	1005 River Road	1623	07/31/12 10:55	Client	08/02/12 09:30

Report Summary

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

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Date: 2012.08.17 14:38:55 -04'00'

Authorized Signature | Title | Date

Client Name: City of Wichita Falls
Report #: 283518

UL LLC
110 S. Hill St., South Bend, IN 46617-2702 USA
T: 800.332.4345 / F: 574.233.8207 / W: UL.com

Client Name: City of Wichita Falls Report #: 283518

Sampling Point: 1005 River Road PWS ID: TX2430001

Microbiology									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
---	Giardia	1623	---	0.741	**0.741**	cysts/L	---	08/02/12 10:10	2685933
---	Cryptosporidium	1623	---	0.741	**0.741**	oocysts/L	---	08/02/12 10:10	2685933

For method 1623: The calculated MRL value is dependant on the volume filtered and the volume analyzed for each sample.

† UL has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

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LABORATORY REPORT

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Laboratory Report

Client: City of Wichita Falls

Attn: Mark Southard
P. O. Box 1431
Wichita Falls, TX 76307

Report: 282121
Priority: Standard Written
Status: Final
PWS ID: TX2430001

Copies to: None

Sample Information

UL ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
2670990	River Road Effluent, Treated	L211	07/05/12 15:40	Client	07/06/12 10:00
2670991	River Road Effluent, Treated	S170	07/05/12 15:40	Client	07/06/12 10:00
2670992	River Road Effluent, Treated	L221	07/05/12 15:40	Client	07/06/12 10:00
2670993	River Road Effluent, Treated	L220	07/05/12 15:40	Client	07/06/12 10:00
2670994	River Road Effluent, Treated	L200	07/05/12 15:40	Client	07/06/12 10:00

Report Summary

Note: The samples submitted for analysis were received at a temperature of 8.8°C. The client was notified of the situation, and analysis was authorized by Mark Southard of the City of Wichita Falls.

Note: In the Method L200 analysis, the pentachlorophenol recovery in the LFB at 5.0 ug/L (68%) was low outside the acceptance limits of 70-130%. Any result is potentially low biased.

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call Jim Vernon at (574) 233-4777.

Note: This report may not be reproduced, except in full, without written approval from UL.

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Date: 2012.08.06 13:20:37 -04'00'

Authorized Signature | Title | Date

Client Name: City of Wichita Falls
Report #: 282121

UL LLC
110 S. Hill St., South Bend, IN 46617-2702 USA
T: 800.332.4345 / F: 574.233.8207 / W: UL.com

Client Name: City of Wichita Falls Report #: 282121

Sampling Point: River Road Effluent, Treated PWS ID: TX2430001

UL Methods									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
80-05-7	Bisphenol A	L200	—	0.1	< 0.1	ug/L	07/16/12 07:34	07/17/12 00:06	2670994
25154-52-3	Nonylphenol, isomer mix	L200	—	0.5	< 0.5	ug/L	07/16/12 07:34	07/17/12 00:06	2670994
1806-26-4	4-n-Octylphenol	L200	—	0.5	< 0.5	ug/L	07/16/12 07:34	07/17/12 00:06	2670994
140-66-9	4-tert-Octylphenol	L200	—	0.5	< 0.5	ug/L	07/16/12 07:34	07/17/12 00:06	2670994
87-86-5	Pentachlorophenol	L200	—	0.1	< 0.1	ug/L	07/16/12 07:34	07/17/12 00:06	2670994
92-69-3	Phenylphenol	L200	—	0.1	< 0.1	ug/L	07/16/12 07:34	07/17/12 00:06	2670994
79-94-7	Tetrabromobisphenol A	L200	—	0.1	< 0.1	ug/L	07/16/12 07:34	07/17/12 00:06	2670994
88-06-2	2,4,6-Trichlorophenol	L200	—	0.1	< 0.1	ug/L	07/16/12 07:34	07/17/12 00:06	2670994
56-53-1	Diethylstilbestrol (DES)	L211	—	0.5	< 0.5	ng/L	07/11/12 09:00	07/12/12 17:13	2670990
57-91-0	17alpha-Estradiol	L211	—	0.5	< 0.5	ng/L	07/11/12 09:00	07/12/12 17:13	2670990
50-28-2	17beta-Estradiol	L211	—	0.5	< 0.5	ng/L	07/11/12 09:00	07/12/12 17:13	2670990
50-27-1	Estriol	L211	—	0.5	< 0.5	ng/L	07/11/12 09:00	07/12/12 17:13	2670990
53-16-7	Estrone	L211	—	0.5	< 0.5	ng/L	07/11/12 09:00	07/12/12 17:13	2670990
57-63-6	17alpha-Ethynyl estradiol	L211	—	0.5	< 0.5	ng/L	07/11/12 09:00	07/12/12 17:13	2670990
57-83-0	Progesterone	L211	—	0.1	**0.3**	ng/L	07/11/12 09:00	07/12/12 17:13	2670990
481-30-1	cis-Testosterone	L211	—	0.1	< 0.1	ng/L	07/11/12 09:00	07/12/12 17:13	2670990
58-22-0	trans-Testosterone	L211	—	0.1	< 0.1	ng/L	07/11/12 09:00	07/12/12 17:13	2670990
103-90-2	Acetaminophen	L220	—	0.005	**0.007**	ug/L	07/18/12 07:30	07/20/12 07:41	2670993
60-80-0	Antipyrine	L220	—	0.001	< 0.001	ug/L	07/18/12 07:30	07/20/12 07:41	2670993
29122-68-7	Atenolol	L220	—	0.001	**0.206**	ug/L	07/18/12 07:30	07/20/12 12:27	2670993
83905-01-5	Azithromycin	L220	—	0.005	< 0.005	ug/L	07/18/12 07:30	07/20/12 07:41	2670993
1405-87-4	Bacitracin	L220	—	1.0	< 1.0	ug/L	07/18/12 07:30	07/20/12 07:41	2670993
58-08-2	Caffeine	L220	—	0.05	< 0.05	ug/L	07/18/12 07:30	07/20/12 07:41	2670993
6804-07-5	Carbadox	L220	—	0.005	< 0.005	ug/L	07/18/12 07:30	07/20/12 07:41	2670993
298-46-4	Carbamazepine	L220	—	0.001	**0.053**	ug/L	07/18/12 07:30	07/20/12 07:41	2670993
85721-33-1	Ciprofloxacin	L220	—	0.05	< 0.05	ug/L	07/18/12 07:30	07/20/12 07:41	2670993
486-56-6	Cotinine	L220	—	0.001	**0.025**	ug/L	07/18/12 07:30	07/20/12 07:41	2670993
134-62-3	DEET	L220	—	0.005	**0.197**	ug/L	07/18/12 07:30	07/20/12 07:41	2670993
50-02-2	Dexamethasone	L220	—	0.005	< 0.005	ug/L	07/18/12 07:30	07/20/12 07:41	2670993
439-14-5	Diazepam	L220	—	0.001	< 0.001	ug/L	07/18/12 07:30	07/20/12 07:41	2670993
42399-41-7	Diltiazem	L220	—	0.0001	< 0.0001	ug/L	07/18/12 07:30	07/20/12 07:41	2670993
93106-60-6	Enrofloxacin	L220	—	0.05	< 0.05	ug/L	07/18/12 07:30	07/20/12 07:41	2670993
114-07-8	Erythromycin	L220	—	0.001	< 0.001	ug/L	07/18/12 07:30	07/20/12 07:41	2670993
59333-67-4	Fluoxetine (Prozac)	L220	—	0.001	**0.007**	ug/L	07/18/12 07:30	07/20/12 07:41	2670993
73334-07-3	Iopromide	L220	—	0.05	< 0.05	ug/L	07/18/12 07:30	07/20/12 07:41	2670993
11054-70-9	Lasalocid	L220	—	0.001	< 0.001	ug/L	07/18/12 07:30	07/20/12 07:41	2670993
154-21-2	Lincomycin	L220	—	0.0001	< 0.0001	ug/L	07/18/12 07:30	07/20/12 07:41	2670993
57-53-4	Meprobamate	L220	—	0.001	**0.476**	ug/L	07/18/12 07:30	07/20/12 12:27	2670993
17090-79-8	Monensin	L220	—	0.001	< 0.001	ug/L	07/18/12 07:30	07/20/12 07:41	2670993
55134-13-9	Narasin	L220	—	0.001	< 0.001	ug/L	07/18/12 07:30	07/20/12 07:41	2670993
22083-74-5	Nicotine	L220	—	0.005	**0.016**	ug/L	07/18/12 07:30	07/20/12 07:41	2670993
70458-96-7	Norfloxacin	L220	—	0.05	< 0.05	ug/L	07/18/12 07:30	07/20/12 07:41	2670993
7060-74-4	Oleandomycin	L220	—	0.001	< 0.001	ug/L	07/18/12 07:30	07/20/12 07:41	2670993
611-59-6	Paraxanthine	L220	—	0.005	**0.026**	ug/L	07/18/12 07:30	07/20/12 07:41	2670993

125-33-7	Primidone	L220	—	0.005	**0.321**	ug/L	07/18/12 07:30	07/20/12 07:41	2670993
80214-83-1	Roxithromycin	L220	—	0.001	< 0.001	ug/L	07/18/12 07:30	07/20/12 07:41	2670993
53003-10-4	Salinomycin	L220	—	0.0001	< 0.0001	ug/L	07/18/12 07:30	07/20/12 07:41	2670993
79902-63-9	Simvastatin	L220	—	0.005	< 0.005	ug/L	07/18/12 07:30	07/20/12 07:41	2670993
80-32-0	Sulfachloropyridazine	L220	—	0.005	< 0.005	ug/L	07/18/12 07:30	07/20/12 07:41	2670993
68-35-9	Sulfadiazine	L220	—	0.001	< 0.001	ug/L	07/18/12 07:30	07/20/12 07:41	2670993
122-11-2	Sulfadimethoxine	L220	—	0.0001	< 0.0001	ug/L	07/18/12 07:30	07/20/12 07:41	2670993
127-79-7	Sulfamerazine	L220	—	0.001	< 0.001	ug/L	07/18/12 07:30	07/20/12 07:41	2670993
57-68-1	Sulfamethazine	L220	—	0.001	< 0.001	ug/L	07/18/12 07:30	07/20/12 07:41	2670993
144-82-1	Sulfamethizole	L220	—	0.001	< 0.001	ug/L	07/18/12 07:30	07/20/12 07:41	2670993
723-46-6	Sulfamethoxazole	L220	—	0.001	**0.003**	ug/L	07/18/12 07:30	07/20/12 07:41	2670993
599-79-1	Sulfasalazine	L220	—	0.005	< 0.005	ug/L	07/18/12 07:30	07/20/12 07:41	2670993
72-14-0	Sulfathiazole	L220	—	0.001	< 0.001	ug/L	07/18/12 07:30	07/20/12 07:41	2670993
83-67-0	Theobromine	L220	—	0.05	**0.24**	ug/L	07/18/12 07:30	07/20/12 07:41	2670993
738-70-5	Trimethoprim	L220	—	0.001	< 0.001	ug/L	07/18/12 07:30	07/20/12 07:41	2670993
74610-55-2	Tylosin	L220	—	0.001	< 0.001	ug/L	07/18/12 07:30	07/20/12 07:41	2670993
21411-53-0	Virginiamycin M1	L220	—	0.001	< 0.001	ug/L	07/18/12 07:30	07/20/12 07:41	2670993
41859-67-0	Bezafibrate	L221	—	0.0005	< 0.0005	ug/L	07/11/12 08:00	07/18/12 03:02	2670992
56-75-7	Chloramphenicol	L221	—	0.005	< 0.005	ug/L	07/11/12 08:00	07/18/12 03:02	2670992
64-72-2	Chlorotetracycline	L221	—	0.05	< 0.05	ug/L	07/11/12 08:00	07/18/12 03:02	2670992
882-09-7	Clofibric acid	L221	—	0.0005	< 0.0005	ug/L	07/11/12 08:00	07/18/12 03:02	2670992
15307-86-5	Diclofenac	L221	—	0.0005	< 0.0005	ug/L	07/11/12 08:00	07/18/12 03:02	2670992
57-41-0	Dilantin	L221	—	0.002	**0.186**	ug/L	07/11/12 08:00	07/18/12 03:02	2670992
83038-87-3	Doxycycline	L221	—	0.05	< 0.05	ug/L	07/11/12 08:00	07/18/12 03:02	2670992
25812-30-0	Gemfibrozil	L221	—	0.0005	< 0.0005	ug/L	07/11/12 08:00	07/18/12 03:02	2670992
15687-27-1	Ibuprofen	L221	—	0.05	< 0.05	ug/L	07/11/12 08:00	07/18/12 03:02	2670992
51-48-9	Levothyroxine (Synthroid)	L221	—	0.002	< 0.002	ug/L	07/11/12 08:00	07/18/12 03:02	2670992
22204-53-1	Naproxen	L221	—	0.002	< 0.002	ug/L	07/11/12 08:00	07/18/12 03:02	2670992
2058-46-0	Oxytetracycline	L221	—	0.5	< 0.5	ug/L	07/11/12 08:00	07/18/12 03:02	2670992
61-33-6	Penicillin G	L221	—	0.002	< 0.002	ug/L	07/11/12 08:00	07/18/12 03:02	2670992
87-08-1	Penicillin V	L221	—	0.002	< 0.002	ug/L	07/11/12 08:00	07/18/12 03:02	2670992
53-03-2	Prednisone	L221	—	0.002	< 0.002	ug/L	07/11/12 08:00	07/18/12 03:02	2670992
69-72-7	Salicylic acid	L221	—	0.05	**0.19**	ug/L	07/11/12 08:00	07/18/12 03:02	2670992
60-54-8	Tetracycline	L221	—	0.5	< 0.5	ug/L	07/11/12 08:00	07/18/12 03:02	2670992
58-55-9	Theophylline	L221	—	0.005	**0.046**	ug/L	07/11/12 08:00	07/18/12 03:02	2670992
102-20-2	Triclocarban	L221	—	0.005	**0.070**	ug/L	07/11/12 08:00	07/18/12 03:02	2670992
3380-34-5	Triclosan	L221	—	0.050	< 0.050	ug/L	07/11/12 08:00	07/18/12 03:02	2670992
1222-05-5	Galaxolide	S170	—	10	**270**	ng/L	07/19/12 09:00	07/20/12 16:07	2670991
21145-77-7	Tonalid	S170	—	10	**42**	ng/L	07/19/12 09:00	07/20/12 16:07	2670991

† UL has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

Lab Definitions

Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis.

Internal Standards (IS) - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

Laboratory Duplicate (LD) - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

Laboratory Fortified Blank (LFB) / Laboratory Control Sample (LCS) - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control.

Laboratory Method Blank (LMB) / Laboratory Reagent Blank (LRB) - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

Laboratory Trip Blank (LTB) / Field Reagent Blank (FRB) - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD) - is a sample aliquot taken from the same field sample source as the Matrix Spike Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix.

Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM) - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results.

Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV) - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the calibration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

Surrogate Standard (SS) / Surrogate Analyte (SUR) - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.

LABORATORY REPORT

This report contains 5 pages.
(including the cover page)

If you have any questions concerning this report, please do not hesitate to call us at (800) 332-4345 or (574) 233-4777.

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UL LLC
110 S. Hill St., South Bend, IN 46617-2702 USA
T: 800.332.4345 / F: 574.233.8207 / W: UL.com

Laboratory Report

Client: City of Wichita Falls

Attn: Karen Menard
P. O. Box 1431
Wichita Falls, TX 76307

Report: 281206
Priority: Standard Written
Status: Final
PWS ID: TX2430001

Copies to: None

Sample Information

UL ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
2661209	1005 River Road	1623	06/18/12 10:10	Client	06/19/12 09:45
2661210	Lake Wichita	1623	06/18/12 13:50	Client	06/19/12 09:45

Report Summary

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call Jim Vernon at (574) 233-4777.

Note: This report may not be reproduced, except in full, without written approval from UL.

Digitally signed by James N. Vernon
Date: 2012.07.03 14:28:02 -04'00'

Authorized Signature | Title | Date

Client Name: City of Wichita Falls
Report #: 281206

UL LLC
110 S. Hill St., South Bend, IN 46617-2702 USA
T: 800.332.4345 / F: 574.233.8207 / W: UL.com

Client Name: City of Wichita Falls Report #: 281206

Sampling Point: 1005 River Road PWS ID: TX2430001

Microbiology									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
---	Giardia	1623	---	0.067	**9.630**	cysts/L	---	06/22/12 09:00	2661209
---	Cryptosporidium	1623	---	0.067	**0.067**	oocysts/L	---	06/22/12 09:00	2661209

For method 1623: The calculated MRL value is dependant on the volume filtered and the volume analyzed for each sample.

Sampling Point: Lake Wichita PWS ID: TX2430001

Microbiology									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
---	Giardia	1623	---	0.213	< 0.213	cysts/L	---	06/22/12 09:00	2661210
---	Cryptosporidium	1623	---	0.213	< 0.213	oocysts/L	---	06/22/12 09:00	2661210

For method 1623: The calculated MRL value is dependant on the volume filtered and the volume analyzed for each sample.

† UL has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

Lab Definitions

Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis.

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LABORATORY REPORT

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UL LLC
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T: 800.332.4345 / F: 574.233.8207 / W: UL.com

Laboratory Report

Client: City of Wichita Falls

Attn: Mark Southard
P. O. Box 1431
Wichita Falls, TX 76307

Report: 280869
Priority: Standard Written
Status: Final
PWS ID: TX2430001

Copies to: None

Sample Information

UL ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
2656460	1005 River Road	1623	06/11/12 09:45	Client	06/12/12 09:30
2656461	Lake Wichita	1623	06/11/12 14:00	Client	06/12/12 09:30

Report Summary

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Authorized Signature

Title

6-26-12
Date

Client Name: City of Wichita Falls
Report #: 280869

UL LLC
110 S. Hill St., South Bend, IN 46617-2702 USA
T: 800.332.4345 / F: 574.233.8207 / W: UL.com

Client Name: City of Wichita Falls Report #: 280869

Sampling Point: 1005 River Road PWS ID: TX2430001

Microbiology									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
---	Giardia	1623	---	0.741	**7.407**	cysts/L	---	06/15/12 08:45	2656460
---	Cryptosporidium	1623	---	0.741	**0.741**	oocysts/L	---	06/15/12 08:45	2656460

For method 1623: The calculated MRL value is dependant on the volume filtered and the volume analyzed for each sample.

Sampling Point: Lake Wichita PWS ID: TX2430001

Microbiology									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
---	Giardia	1623	---	0.213	< 0.213	cysts/L	---	06/15/12 08:45	2656461
---	Cryptosporidium	1623	---	0.213	< 0.213	oocysts/L	---	06/15/12 08:45	2656461

For method 1623: The calculated MRL value is dependant on the volume filtered and the volume analyzed for each sample.

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Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

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Surrogate Standard (SS) / Surrogate Analyte (SUR) - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.

Wichita 215805

110 S. Hill Street
South Bend, IN 46617
T: 1.800.332.4345
F: 1.574.233.8207

Order #
Batch #

www.ul.com/water

Shaded area for UL use only

CHAIN OF CUSTODY RECORD

Page ____ of ____

REPORT TO:	SAMPLER (Signature)	PWS ID #	STATE (sample origin)	PROJECT NAME	PO#
City of Wichita Falls	Mack McPheron	2430001	TX	LT 2 Crypto 1623	P1202170

BILL TO:	COMPLIANCE MONITORING Yes	No	POPULATION SERVED	SOURCE WATER
City of Wichita Falls		X	100,000+	SW

	LAB Number	COLLECTION DATE	TIME	AM	PM	SAMPLING SITE	TEST NAME	SAMPLE REMARKS	CHLORINATED YES	NO	# OF CONTAINERS	MATRIX CODE	TURNAROUND TIME
1	2656460	06/11/12	9:45	X		1005 Rivin Road	Crypto/Giardia 1623		X		1	SW	SW
2													
3													
4	461	06/11/12	2:00		X	Lake Wichita	Crypto/Giardia 1623			X	1	SW	SW
5													
6													
7													
8													
9													
10													
11													
12													
13													
14													

RELINQUISHED BY:(Signature)	DATE	TIME	RECEIVED BY:(Signature)	DATE	TIME
Mack McPheron	6/11/12	2:15 AM PM			AM PM
RELINQUISHED BY:(Signature)	DATE	TIME AM PM	RECEIVED BY:(Signature)	DATE	TIME AM PM
RELINQUISHED BY:(Signature)	DATE	TIME AM PM	RECEIVED FOR LABORATORY BY: dmartes	DATE 6/12/12	TIME 0930 AM PM

LAB RESERVES THE RIGHT TO RETURN UNUSED PORTIONS OF NON-AQUEOUS SAMPLES TO CLIENT

LAB COMMENTS

CONDITIONS UPON RECEIPT (check one): ✓ ced: Wet/Blue ___ Ambient 3.6 °C Upon Receipt ___ N/A

MATRIX CODES:

DW-DRINKING WATER
RW-REAGENT WATER
GW-GROUND WATER
EW-EXPOSURE WATER
SW-SURFACE WATER
PW-POOL WATER
WW-WASTE WATER

TURN-AROUND TIME (TAT) - SURCHARGES

SW = Standard Written: (15 working days)	0%	IV* = Immediate Verbal: (3 working days)	100%
RV* = Rush Verbal: (5 working days)	50%	IW* =Immediate Written: (3 working days)	125%
RW* = Rush Written: (5 working days)	75%	SP* = Weekend. Holiday	CALL
		STAT* = Less than 48 hours	CALL

* Please call, expedited service not available for all testing

06-LO-F0435 Issue 2.0 Effective Date: 01/20/2012

Samples received unannounced with less than 48 hours holding time remaining may be subject to additional charges.

Sample analysis will be provided according to the standard UL GSA/Water Services Terms, which are available upon request. Any other terms proposed by Customer are deemed material alterations and are rejected unless expressly agree to in writing by UL.

Confirmation Report 280869

I = 186085

Verbal/Results Due To Reporting: 06/22/2012

Order Number: 215805
Project: Monthly
Manager: vernon
Client Type: PWS
E-mail Report: No
E-mail Address:
Addition Report Info: No Report Additions

Sample #: 2656460, 2656461
Primary Report: Generic
Secondary Report: Not Specified
Report Package: Package A
E-mail Receipt Conf: No

Report Due Date: 06/26/2012

Logged By: martis
Logged Date: 06/12/2012 10:12
Received By: martis
Received Date: 06/12/2012 09:30
PO: P1202170

Primary Contact:
Wichita Falls, City of
~~Karen Menard~~ MARK Southland
P. O. Box 1431

Wichita Falls TX 76307
940-691-1153
null (fax)

Bill To:
Same as Primary Contact

Ship To:
Wichita Falls, City of
Karen Menard
Cypress Water Plant
4801 Big Ed Neal Drive
Wichita Falls TX 76310

HG RP 6.14.12

JUN 21 2012

Report To:
Same as Primary Contact

RP 6.26.12

QC Criteria & Pricing Information

Qty	Type	Matrix	Chl	Status	Test		Origin	QC Criteria	Unit Price	Discount	Net Price
1	FS	SW	Y	Valid	Giardia/Crypto F / 1623	✓	TX	Non-Compliance	450.00	0.00	450.00
1	FS	SW	N	Valid	Giardia/Crypto F / 1623	✓	TX	Non-Compliance	450.00	0.00	450.00

Pricing Summary

Net Total	900.00
Order Total	900.00

Anomalies Legend:
C = Client provided sample containers
P = Preservation anomaly
H = Holding time anomaly
T = Temperature anomaly
O = Other anomaly
# = NELAP

LogBook Verification

Sample	Type	Collection Date	Test	PWSID	Flags	Sample Site	Location
2656460	FS	06/11/2012 09:45	Giardia/Crypto F / 1623	TX2430001		1005 River Road	
2656461	FS	06/11/2012 14:00	Giardia/Crypto F / 1623	TX2430001		Lake Wichita	

Order Comments

********** END **********

UL Drinking Water Laboratory
Result Record Sheet

Run Number: 169728 | Instrument: Microscope DB | Method(s): 1623
PC File Name: | Analyst: A. Crocker | Submitted By: A. Crocker
Order #/Proj Mgr: 215805/vernon | Receipt Batch: 280869 | Today's Date: 06/19/2012

Client: Wichita Falls, City of / Karen Menard | Generated By: A. Crocker

Sample ID: 2656460 | Type: Field Sample | Site: 1005 River Road
Extracted: N/A | Analyzed: 06/15/2012 08:45

CAS Number	Parameter	MRL	Amount	Report	Units
N/A	Giardia	0.741	7.4074	7.407	cysts/L
N/A	Cryptosporidium	0.741	0.7407	0.741	oocysts/L

Sample ID: 2656461 | Type: Field Sample | Site: Lake Wichita
Extracted: N/A | Analyzed: 06/15/2012 08:45

CAS Number	Parameter	MRL	Amount	Report	Units
N/A	Giardia	0.213	0.0000	< 0.213	cysts/L
N/A	Cryptosporidium	0.213	0.0000	< 0.213	oocysts/L

NOTE: Do not report parameters not present on this sheet. See run for comments.

Version 1.1.0.0

LABORATORY REPORT

This report contains 5 pages.
(including the cover page)

If you have any questions concerning this report, please do not hesitate to call us at (800) 332-4345 or (574) 233-4777.

This report may not be reproduced, except in full, without written approval from UL.

Laboratory Report

Client: City of Wichita Falls

Attn: Karen Menard
P. O. Box 1431
Wichita Falls, TX 76307

Report: 280443
Priority: Standard Written
Status: Final
PWS ID: TX2430001

Copies to: None

Sample Information

UL ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
2651414	1005 River Road	1623	06/04/12 10:35	Client	06/05/12 09:45

Report Summary

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call Jim Vernon at (574) 233-4777.

Note: This report may not be reproduced, except in full, without written approval from UL.

Authorized Signature

Title

6/14/12
Date

Client Name: City of Wichita Falls
Report #: 280443

UL LLC
110 S. Hill St., South Bend, IN 46617-2702 USA
T: 800.332.4345 / F: 574.233.8207 / W: UL.com

Client Name: City of Wichita Falls

Report #: 280443

Sampling Point: 1005 River Road

PWS ID: TX2430001

Microbiology

Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
---	Giardia	1623	---	0.067	**12.593**	cysts/L	---	06/07/12 09:30	2651414
---	Cryptosporidium	1623	---	0.067	**0.135**	oocysts/L	---	06/07/12 09:30	2651414

For method 1623: The calculated MRL value is dependant on the volume filtered and the volume analyzed for each sample.

† UL has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

Lab Definitions

Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis.

Internal Standards (IS) - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

Laboratory Duplicate (LD) - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

Laboratory Fortified Blank (LFB) / Laboratory Control Sample (LCS) - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control.

Laboratory Method Blank (LMB) / Laboratory Reagent Blank (LRB) - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

Laboratory Trip Blank (LTB) / Field Reagent Blank (FRB) - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD) - is a sample aliquot taken from the same field sample source as the Matrix Spike Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix.

Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM) - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results.

Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV) - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the calibration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

Surrogate Standard (SS) / Surrogate Analyte (SUR) - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.

110 S. Hill Street
South Bend, IN 46617
T: 1.800.332.4345
F: 1.574.233.8207

Order #

Batch #

www.ul.com/water

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CHAIN OF CUSTODY RECORD

Page 1 of 1

REPORT TO:	SAMPLER (Signature)	PWS ID #	STATE (sample origin)	PROJECT NAME	PO#
City of Wichita Falls	Mack McPherson	0430001	TX	LT2 Crypto 1623	P120 2170

BILL TO:	COMPLIANCE MONITORING	Yes	No	POPULATION SERVED	SOURCE WATER
City of Wichita Falls			X	100,000 +	SW

	LAB Number	COLLECTION DATE	COLLECTION TIME	AM	PM	SAMPLING SITE	TEST NAME	SAMPLE REMARKS	CHLORINATED YES	CHLORINATED NO	# OF CONTAINERS	MATRIX CODE	TURNAROUND TIME
1	2651414	06/04/12	10:35	X		1005 Rivers Road	Crypto/Giardia 1623		X		1	SW	SW
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													
13													
14													

RELINQUISHED BY:(Signature)	DATE	TIME	RECEIVED BY:(Signature)	DATE	TIME
Mack McPherson	06/04/12	2:40 AM (PM)			AM PM
RELINQUISHED BY:(Signature)	DATE	TIME	RECEIVED BY:(Signature)	DATE	TIME
		AM PM			AM PM
RELINQUISHED BY:(Signature)	DATE	TIME	RECEIVED FOR LABORATORY BY:	DATE	TIME
		AM PM	Shelton	6-5-12	0945 AM PM

LAB RESERVES THE RIGHT TO RETURN UNUSED PORTIONS OF NON-AQUEOUS SAMPLES TO CLIENT

LAB COMMENTS

CONDITIONS UPON RECEIPT (check one): X Iced: Wet/Blue ___ Ambient 4.6 °C Upon Receipt ___ N/A

MATRIX CODES:

DW-DRINKING WATER
RW-REAGENT WATER
GW-GROUND WATER
EW-EXPOSURE WATER
SW-SURFACE WATER
PW-POOL WATER
WW-WASTE WATER

TURN-AROUND TIME (TAT) - SURCHARGES

SW = Standard Written: (15 working days)	0%	IV* = Immediate Verbal: (3 working days)	100%
RV* = Rush Verbal: (5 working days)	50%	IW* =Immediate Written: (3 working days)	125%
RW* = Rush Written: (5 working days)	75%	SP* = Weekend, Holiday	CALL
		STAT* = Less than 48 hours	CALL

* Please call, expedited service not available for all testing

06-LO-F0435 Issue 2.0 Effective Date: 01/20/2012

Samples received unannounced with less than 48 hours holding time remaining may be subject to additional charges.

Sample analysis will be provided according to the standard UL GSA/Water Services Terms, which are available upon request. Any other terms proposed by Customer are deemed material alterations and are rejected unless expressly agree to in writing by UL.

invoice #18[illegible]4
DM 6/14/12

Confirmation Report 280443

Verbal/Results Due To Reporting: 06/15/2012

Report Due Date: 06/19/2012

Order Number: 223262
Project: Monthly
Manager: vernon
Client Type: PWS
E-mail Report: No
E-mail Address:
Addition Report Info: No Report Additions

Sample #: 2651414
Primary Report: Generic
Secondary Report: Not Specified
Report Package: Package A
E-mail Receipt Conf: No

Logged By: spurgeon
Logged Date: 06/05/2012 10:03
Received By: spurgeon
Received Date: 06/05/2012 09:45
PO: see coc
P12021170

Primary Contact:
Wichita Falls, City of
Karen Menard
P. O. Box 1431

Wichita Falls TX 76307
940-691-1153
null (fax)

JUN 13 2012

Report To:
Same as Primary Contact

DM 6/14/12

Bill To:
Same as Primary Contact

Ship To:
Wichita Falls, City of
Karen Menard
Cypress Water Plant
4801 Big Ed Neal Drive
Wichita Falls TX 76310

HG RP 6.6.12

QC Criteria & Pricing Information

Qty	Type	Matrix	Chl	Status	Test	Origin	QC Criteria	Unit Price	Discount	Net Price
1	FS	SW	Y	Valid	Giardia/Crypto F / 1623 ✓	TX	Non-Compliance	450.00	0.00	450.00

Pricing Summary

Net Total	450.00
Order Total	450.00

Anomalies Legend:
C = Client provided sample containers
P = Preservation anomaly
H = Holding time anomaly
T = Temperature anomaly
O = Other anomaly
# = NELAP

LogBook Verification

Sample	Type	Collection Date	Test	PWSID	Flags	Sample Site	Location
2651414	FS	06/04/2012 10:35	Giardia/Crypto F / 1623	TX2430001		1005 River Road	

Order Comments

********** END **********

UL Drinking Water Laboratory
Result Record Sheet

Run Number: 169491
PC File Name:
Order #/Proj Mgr: 223262/vernon

Instrument: Microscope DB
Analyst: H. Wiseman
Receipt Batch: 280443

Method(s): 1623
Submitted By: H. Wiseman
Today's Date: 06/12/2012

Client: Wichita Falls, City of / Karen Menard

Generated By: H. Wiseman

Sample ID: 2651414
Extracted: N/A

Type: Field Sample
Analyzed: 06/07/2012 09:30

Site: 1005 River Road

CAS Number	Parameter	MRL	Amount	Report	Units
N/A	Giardia	0.067	12.5926	12.593	cysts/L
N/A	Cryptosporidium	0.067	0.1347	0.135	oocysts/L

NOTE: Do not report parameters not present on this sheet. See run for comments.

Version 1.1.0.0

LABORATORY REPORT

This report contains 5 pages.
(including the cover page)

If you have any questions concerning this report, please do not hesitate to call us at (800) 332-4345 or (574) 233-4777.

This report may not be reproduced, except in full, without written approval from UL.

UL LLC
110 S. Hill St., South Bend, IN 46617-2702 USA
T: 800.332.4345 / F: 574.233.8207 / W: UL.com

Laboratory Report

Client: City of Wichita Falls

Attn: Mark Southard
P. O. Box 1431
Wichita Falls, TX 76307

Report: 280304
Priority: Standard Written
Status: Final
PWS ID: TX2430001

Copies to: None

Sample Information

UL ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
2649385	1005 River Road	1623	05/29/12 09:30	Client	05/31/12 09:45

Report Summary

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call Jim Vernon at (574) 233-4777.

lote: This report may not be reproduced, except in full, without written approval from UL.

Authorized Signature

Title

6-8-12
Date

Client Name: City of Wichita Falls
Report #: 280304

UL LLC
110 S. Hill St., South Bend, IN 46617-2702 USA
T: 800.332.4345 / F: 574.233.8207 / W: UL.com

Client Name: City of Wichita Falls

Report #: 280304

Sampling Point: 1005 River Road

PWS ID: TX2430001

Microbiology									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
---	Giardia	1623	---	0.370	**22.963**	cysts/L	---	06/01/12 10:00	2649385
---	Cryptosporidium	1623	---	0.370	**0.370**	oocysts/L	---	06/01/12 10:00	2649385

For method 1623: The calculated MRL value is dependant on the volume filtered and the volume analyzed for each sample.

† UL has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

Lab Definitions

Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis.

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Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

Surrogate Standard (SS) / Surrogate Analyte (SUR) - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.

22402

110 S. Hill Street
South Bend, IN 46617
T: 1.800.332.4345
F: 1.574.233.8207

Order #

Batch #

www.ul.com/water

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CHAIN OF CUSTODY RECORD

Page 1 of 1

REPORT TO:	SAMPLER (Signature)	PWS ID #	STATE (sample origin)	PROJECT NAME	PO#
City of Wichita Falls	Mack McKlem	2430001	TX	LT2 Crypto 1623	PO1202170

BILL TO:	COMPLIANCE MONITORING	Yes	No	POPULATION SERVED	SOURCE WATER
City of Wichita Falls			X	100,000+	SW

	LAB Number	COLLECTION DATE	COLLECTION TIME	AM	PM	SAMPLING SITE	TEST NAME	SAMPLE REMARKS	CHLORINATED YES	CHLORINATED NO	# OF CONTAINERS	MATRIX CODE	TURNAROUND TIME
1	2104985	05/29/12	9:30	X		1005 Rens Road	Crypto/Giardia 1623		X		1	SW	SW
2													
3													
4		05/30/12	2:10		X	Headquarters Road	Crypto/Giardia 1623			X	1	SW	SW
5													
6		Mack McKlem 05/30/12											
7		05/30/12			X	Secondary Reservoir	Crypto/Giardia 1623			X	1	SW	SW
8													
9													
10													
11													
12													
13													
14													

Cross Offs on COC by Client

RELINQUISHED BY:(Signature)	DATE	TIME	RECEIVED BY:(Signature)	DATE	TIME
Mack McKlem	05/30/12	2:40 AM PM			AM PM
RELINQUISHED BY:(Signature)	DATE	TIME	RECEIVED BY:(Signature)	DATE	TIME
		AM PM			AM PM
RELINQUISHED BY:(Signature)	DATE	TIME	RECEIVED FOR LABORATORY BY:	DATE	TIME
		AM PM	Kellie Dyer	05-31-2012	0945 AM PM

LAB RESERVES THE RIGHT TO RETURN UNUSED PORTIONS OF NON-AQUEOUS SAMPLES TO CLIENT

LAB COMMENTS

CONDITIONS UPON RECEIPT (check one): X Iced: Wet/Blue ___ Ambient 5.6 °C Upon Receipt ___ N/A

MATRIX CODES:

DW-DRINKING WATER
RW-REAGENT WATER
GW-GROUND WATER
EW-EXPOSURE WATER
SW-SURFACE WATER
PW-POOL WATER
WW-WASTE WATER

TURN-AROUND TIME (TAT) - SURCHARGES

SW = Standard Written: (15 working days)	0%	IV* = Immediate Verbal: (3 working days)	100%
RV* = Rush Verbal: (5 working days)	50%	IW* =Immediate Written: (3 working days)	125%
RW* = Rush Written: (5 working days)	75%	SP* = Weekend, Holiday	CALL
		STAT* = Less than 48 hours	CALL

* Please call, expedited service not available for all testing

06-LO-F0435 Issue 2.0 Effective Date: 01/20/2012

Samples received unannounced with less than 48 hours holding time remaining may be subject to additional charges.

Sample analysis will be provided according to the standard UL GSA/Water Services Terms, which are available upon request. Any other terms proposed by Customer are deemed material alterations and are rejected unless expressly agree to in writing by UL.

invoice#18022

Confirmation Report 280304

Verbal/Results Due To Reporting: 06/11/2012

Report Due Date: 06/14/2012

Order Number: 224070
Project: Monthly
Manager: vernon
Client Type: PWS
E-mail Report: No
E-mail Address:
Addition Report Info: No Report Additions

Sample #: 2649385
Primary Report: Generic
Secondary Report: Not Specified
Report Package: Package A
E-mail Receipt Conf: No

Logged By: depriest
Logged Date: 05/31/2012 11:12
Received By: depriest
Received Date: 05/31/2012 09:45
PO: PO1202170

Primary Contact:
Wichita Falls, City of
Mark Southard
P. O. Box 1431

Wichita Falls TX 76307
940-691-1153
940-691-4121 (fax)

Bill To:
Same as Primary Contact

RECEIVED
JUN 6 2012

Report To:
Same as Primary Contact

Ship To:
Wichita Falls, City of
Mark Southard
Cypress Water Plant
4801 Big Ed Neal Drive
Wichita Falls TX 76310

HG RP 6-1-12

QC Criteria & Pricing Information

Qty	Type	Matrix	Chl	Status	Test	Origin	QC Criteria	Unit Price	Discount	Net Price
1	FS	SW	N	Valid	Giardia/Crypto F / 1623 ✓	TX	Non-Compliance	450.00	0.00	450.00

Pricing Summary

Net Total	450.00
Order Total	450.00

Anomalies Legend:
C = Client provided sample containers
P = Preservation anomaly
H = Holding time anomaly
T = Temperature anomaly
O = Other anomaly
# = NELAP

LogBook Verification

Sample	Type	Collection Date	Test	PWSID	Flags	Sample Site	Location
2649385	FS	05/29/2012 09:30	Giardia/Crypto F / 1623	TX2430001		1005 River Road	

Order Comments

********** END **********

UL Drinking Water Laboratory
Result Record Sheet

Run Number: 169241 | Instrument: Microscope DB | Method(s): 1623
PC File Name: | Analyst: A. Crocker | Submitted By: A. Crocker
Order #/Proj Mgr: 224070/vernon | Receipt Batch: 280304 | Today's Date: 06/05/2012

Client: Wichita Falls, City of / Mark Southard | Generated By: A. Crocker

Sample ID: 2649385 | Type: Field Sample | Site: 1005 River Road
Extracted: N/A | Analyzed: 06/01/2012 10:00

CAS Number	Parameter	MRL	Amount	Report	Units
N/A	Giardia	0.370	22.9630	22.963	cysts/L
N/A	Cryptosporidium	0.370	0.3704	0.370	oocysts/L

NOTE: Do not report parameters not present on this sheet. See run for comments.

Version 1.1.0.0

Laboratory Report

Client: City of Wichita Falls

Attn: Karen Menard
P. O. Box 1431
Wichita Falls, TX 76307

Report: 279955
Priority: Standard Written
Status: Final
PWS ID: TX2430001

Copies to: None

Sample Information

UL ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
2644673	1005 River Road	1623	05/21/12 10:00	Client	05/22/12 09:30

Report Summary

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call Jim Vernon at (574) 233-4777.

ote: This report may not be reproduced, except in full, without written approval from UL.

Authorized Signature

Title

6.4.12
Date

Client Name: City of Wichita Falls
Report #: 279955

UL LLC
110 S. Hill St., South Bend, IN 46617-2702 USA
T: 800.332.4345 / F: 574.233.8207 / W: UL.com

Client Name: City of Wichita Falls

Report #: 279955

Sampling Point: 1005 River Road

PWS ID: TX2430001

Microbiology									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
---	Giardia	1623	---	0.067	**34.815**	cysts/L	---	05/24/12 09:15	2644673
---	Cryptosporidium	1623	---	0.067	**0.202**	oocysts/L	---	05/24/12 09:15	2644673

For method 1623: The calculated MRL value is dependant on the volume filtered and the volume analyzed for each sample.

† UL has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

LABORATORY REPORT

This report contains 5 pages.
(including the cover page)

If you have any questions concerning this report, please do not hesitate to call us at (800) 332-4345 or (574) 233-4777.

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UL LLC
110 S. Hill St., South Bend, IN 46617-2702 USA
T: 800.332.4345 / F: 574.233.8207 / W: UL.com

Laboratory Report

Client: City of Wichita Falls

Attn: Karen Menard
P. O. Box 1431
Wichita Falls, TX 76307

Report: 279201
Priority: Rush Verbal
Status: Final
PWS ID: TX2430001

Copies to: None

Sample Information

UL ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
2637852	1005 River Road	1623	05/08/12 00:00	Client	05/09/12 09:45
2637853	50/50 W/W Eff. / Raw	1623	05/08/12 00:00	Client	05/09/12 09:45

Report Summary

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call Jim Vernon at (574) 233-4777.

Note: This report may not be reproduced, except in full, without written approval from UL.

Authorized Signature

Title

5.17.12
Date

Client Name: City of Wichita Falls
Report #: 279201

UL LLC
110 S. Hill St., South Bend, IN 46617-2702 USA
T: 800.332.4345 / F: 574.233.8207 / W: UL.com

Client Name: City of Wichita Falls Report #: 279201

Sampling Point: 1005 River Road PWS ID: TX2430001

Microbiology									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
---	Giardia	1623	---	0.038	**4.151**	cysts/L	---	05/10/12 08:30	2637852
---	Cryptosporidium	1623	---	0.038	< 0.038	oocysts/L	---	05/10/12 08:30	2637852

For method 1623: The calculated MRL value is dependant on the volume filtered and the volume analyzed for each sample.

Sampling Point: 50/50 W/W Eff. / Raw PWS ID: TX2430001

Microbiology									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
---	Giardia	1623	---	0.091	**0.909**	cysts/L	---	05/10/12 08:30	2637853
---	Cryptosporidium	1623	---	0.091	< 0.091	oocysts/L	---	05/10/12 08:30	2637853

For method 1623: The calculated MRL value is dependant on the volume filtered and the volume analyzed for each sample.

† UL has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

Lab Definitions

Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis.

Internal Standards (IS) - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

Laboratory Duplicate (LD) - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

Laboratory Fortified Blank (LFB) / Laboratory Control Sample (LCS) - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control.

Laboratory Method Blank (LMB) / Laboratory Reagent Blank (LRB) - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

Laboratory Trip Blank (LTB) / Field Reagent Blank (FRB) - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD) - is a sample aliquot taken from the same field sample source as the Matrix Spike Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix.

Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM) - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results.

Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV) - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the calibration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

Surrogate Standard (SS) / Surrogate Analyte (SUR) - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.

22332

110 S. Hill Street
South Bend, IN 46617
T: 1.800.332.4345
F: 1.574.233.8207

Order #

Batch #

www.ul.com/water

Shaded area for UL use only

CHAIN OF CUSTODY RECORD

Page ____ of ____

REPORT TO:	SAMPLER (Signature)	PWS ID #	STATE (sample origin)	PROJECT NAME	PO#
City of Wichita Falls	Mack McPherson	2430001	TX	L+2 Crypto 1623	P1202170

BILL TO:	COMPLIANCE MONITORING Yes	No	POPULATION SERVED	SOURCE WATER
City of Wichita Falls		X	100,000+	SW

	LAB Number	COLLECTION DATE	TIME	AM	PM	SAMPLING SITE	TEST NAME	SAMPLE REMARKS	CHLORINATED YES	CHLORINATED NO	# OF CONTAINERS	MATRIX CODE	TURNAROUND TIME
1	2637852	05/08/12				1005 River Road	Crypto/Giardia 1623		✓	X	1	SW	SW
2													
3													
4													
5	853	05/08/12				50/50 W/W Eff. / RAW	Crypto/Giardia 1623			X	1	SW	SW
6													
7													
8													
9													
10													
11													
12													
13													
14													

RUSH

RUSH VERBAL

RELINQUISHED BY:(Signature)	DATE	TIME	RECEIVED BY:(Signature)	DATE	TIME
Mack McPherson	05/08/12	2:00 AM PM			AM PM
RELINQUISHED BY:(Signature)	DATE	TIME	RECEIVED BY:(Signature)	DATE	TIME
		AM PM			AM PM
RELINQUISHED BY:(Signature)	DATE	TIME	RECEIVED FOR LABORATORY BY:	DATE	TIME
		AM PM	dmartis	5/9/12	0945 AM PM

LAB RESERVES THE RIGHT TO RETURN UNUSED PORTIONS OF NON-AQUEOUS SAMPLES TO CLIENT

LAB COMMENTS RV – FOR Both Pr Client 5-9-12 JL

CONDITIONS UPON RECEIPT (check one): ✓ Iced: Wet/Blue 0 ___ Ambient 3.6 °C Upon Receipt ___ N/A

MATRIX CODES:

DW-DRINKING WATER
RW-REAGENT WATER
GW-GROUND WATER
EW-EXPOSURE WATER
SW-SURFACE WATER
PW-POOL WATER
WW-WASTE WATER

TURN-AROUND TIME (TAT) - SURCHARGES

SW = Standard Written: (15 working days)	0%	IV* = Immediate Verbal: (3 working days)	100%
RV* = Rush Verbal: (5 working days)	50%	IW* = Immediate Written: (3 working days)	125%
RW* = Rush Written: (5 working days)	75%	SP* = Weekend, Holiday	CALL
		STAT* = Less than 48 hours	CALL

* Please call, expedited service not available for all testing

06-LO-F0435 Issue 2.0 Effective Date: 01/20/2012

Samples received unannounced with less than 48 hours holding time remaining may be subject to additional charges.

Sample analysis will be provided according to the standard UL GSA/Water Services Terms, which are available upon request. Any other terms proposed by Customer are deemed material alterations and are rejected unless expressly agree to in writing by UL.

Confirmation Report 279201

Verbal/Results Due To Reporting: 05/16/2012

Report Due Date: 05/23/2012

Order Number:	223308	**Sample #:**	2637852, 2637853	**Logged By:**	martis
Project:	Monthly	**Primary Report:**	Generic	**Logged Date:**	05/09/2012 10:31
Manager:	vernon	**Secondary Report:**	Not Specified	**Received By:**	martis
Client Type:	PWS	**Report Package:**	Package A	**Received Date:**	05/09/2012 09:45
E-mail Report:	Yes	**E-mail Receipt Conf:**	No	**PO:**	P1202170
E-mail Address:	karen.menard@wichitafallstx.gov				
Addition Report Info:					

Primary Contact:
Wichita Falls, City of
Karen Menard
P. O. Box 1431

Wichita Falls TX 76307
940-691-1153
null (fax)

Bill To:
Same as Primary Contact

Ship To:
Wichita Falls, City of
Karen Menard
Cypress Water Plant
4801 Big Ed Neal Drive
Wichita Falls TX 76310

Report To:
Same as Primary Contact

RUSH VERBAL

Verbal emailed 5/16/12

AEHG May 09, 12

MAY 16

5/17/12

5/17/2012

QC Criteria & Pricing Information

Qty	Type	Matrix	Chl	Status	Test	Origin	QC Criteria	Unit Price	Discount	Net Price
2	FS	SW	N	Valid	Giardia/Crypto F / 1623	TX	Non-Compliance	450.00	0.00	1,350.00

Pricing Summary

Net Total	900.00
TAT Surcharge	450.00
Order Total	1,350.00

Anomalies Legend:
C = Client provided sample containers
P = Preservation anomaly
H = Holding time anomaly
T = Temperature anomaly
O = Other anomaly
# = NELAP

LogBook Verification

Sample	Type	Collection Date	Test	PWSID	Flags	Sample Site	Location
2637852	FS	05/08/2012 00:00	Giardia/Crypto F / 1623	TX2430001		1005 River Road	
2637853	FS	05/08/2012 00:00	Giardia/Crypto F / 1623	TX2430001		50/50 W/W Eff. / Raw	

Order Comments

********** END **********

UL Drinking Water Laboratory
Result Record Sheet

Run Number: 168573 | Instrument: Microscope DB | Method(s): 1623
PC File Name: | Analyst: S. Fradenburg | Submitted By: S. Fradenburg
Order #/Proj Mgr: 223308/vernon | Receipt Batch: 279201 | Today's Date: 05/15/2012

Client: Wichita Falls, City of / Karen Menard | Generated By: S. Fradenburg

Sample ID: 2637852 | Type: Field Sample | Site: 1005 River Road
Extracted: N/A | Analyzed: 05/10/2012 08:30

CAS Number	Parameter	MRL	Amount	Report	Units
N/A	Giardia	0.038	4.1509	4.151	cysts/L
N/A	Cryptosporidium	0.038	0.0000	< 0.038	oocysts/L

Sample ID: 2637853 | Type: Field Sample | Site: 50/50 W/W Eff. / Raw
Extracted: N/A | Analyzed: 05/10/2012 08:30

CAS Number	Parameter	MRL	Amount	Report	Units
N/A	Giardia	0.091	0.9091	0.909	cysts/L
N/A	Cryptosporidium	0.091	0.0000	< 0.091	oocysts/L

NOTE: Do not report parameters not present on this sheet. See run for comments.

Version 1.1.0.0

LABORATORY REPORT

This report contains 5 pages.
(including the cover page)

If you have any questions concerning this report, please do not hesitate to call us at (800) 332-4345 or (574) 233-4777.

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UL LLC
110 S. Hill St., South Bend, IN 46617-2702 USA
T: 800.332.4345 / F: 574.233.8207 / W: UL.com

Laboratory Report

Client: City of Wichita Falls

Attn: Karen Menard
P. O. Box 1431
Wichita Falls, TX 76307

Report: 278411
Priority: Standard Written
Status: Final
PWS ID: TX2430001

Copies to: None

Sample Information

UL ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
2628939	1005 River Road	1623	04/23/12 10:40	Client	04/24/12 09:45

Report Summary

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call Jim Vernon at (574) 233-4777.

ote: This report may not be reproduced, except in full, without written approval from UL.

Authorized Signature

Title

5-7-12
Date

Client Name: City of Wichita Falls
Report #: 278411

UL LLC
110 S. Hill St., South Bend, IN 46617-2702 USA
T: 800.332.4345 / F: 574.233.8207 / W: UL.com

Client Name: City of Wichita Falls Report #: 278411

Sampling Point: 1005 River Road PWS ID: TX2430001

Microbiology									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
---	Giardia	1623	---	0.097	2.959	cysts/L	---	04/26/12 08:30	2628939
---	Cryptosporidium	1623	---	0.097	< 0.097	oocysts/L	---	04/26/12 08:30	2628939

For method 1623: The calculated MRL value is dependant on the volume filtered and the volume analyzed for each sample.

† UL has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

Lab Definitions

Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis.

Internal Standards (IS) - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

Laboratory Duplicate (LD) - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

Laboratory Fortified Blank (LFB) / Laboratory Control Sample (LCS) - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control.

Laboratory Method Blank (LMB) / Laboratory Reagent Blank (LRB) - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

Laboratory Trip Blank (LTB) / Field Reagent Blank (FRB) - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD) - is a sample aliquot taken from the same field sample source as the Matrix Spike Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix.

Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM) - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results.

Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV) - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the calibration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

Surrogate Standard (SS) / Surrogate Analyte (SUR) - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.

110 S. Hill Street
South Bend, IN 46617
T: 1.800.332.4345
F: 1.574.233.8207

Order #

Batch #

www.ul.com/water

Shaded area for UL use only

CHAIN OF CUSTODY RECORD

215798

Page 1 of 1

REPORT TO:	SAMPLER (Signature)	PWS ID #	STATE (sample origin)	PROJECT NAME	PO#
City of Wichita Falls	Mack McPherson	2430001	TX	L+2 Crypto 1623	P1202170

BILL TO:	COMPLIANCE MONITORING	Yes	No	POPULATION SERVED	SOURCE WATER
City of Wichita Falls			X	100,000+	SW

	LAB Number	COLLECTION DATE	COLLECTION TIME	AM	PM	SAMPLING SITE	TEST NAME	SAMPLE REMARKS	CHLORINATED YES	CHLORINATED NO	# OF CONTAINERS	MATRIX CODE	TURNAROUND TIME
1	2628939	01/23/12	10:10	X		1005 Reiner Road	Crypto/Giardia		X		1	SW	SW
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													
13													
14													

RELINQUISHED BY:(Signature)	DATE	TIME	RECEIVED BY:(Signature)	DATE	TIME
Mack McPherson	01/23/12	1:15 AM PM			AM PM
RELINQUISHED BY:(Signature)	DATE	TIME	RECEIVED BY:(Signature)	DATE	TIME
		AM PM			AM PM
RELINQUISHED BY:(Signature)	DATE	TIME	RECEIVED FOR LABORATORY BY:	DATE	TIME
		AM PM	Keeler Depew	1-24-12	0945 AM PM

LAB RESERVES THE RIGHT TO RETURN UNUSED PORTIONS OF NON-AQUEOUS SAMPLES TO CLIENT

LAB COMMENTS: Client used white out on the COC. KD

CONDITIONS UPON RECEIPT (check one): 3.2

L Iced: Wet/Blue ___ Ambient ___ °C Upon Receipt ___ N/A

MATRIX CODES:

DW-DRINKING WATER
RW-REAGENT WATER
GW-GROUND WATER
EW-EXPOSURE WATER
SW-SURFACE WATER
PW-POOL WATER
WW-WASTE WATER

TURN-AROUND TIME (TAT) - SURCHARGES

SW = Standard Written: (15 working days)	0%	IV* = Immediate Verbal: (3 working days)	100%
RV* = Rush Verbal: (5 working days)	50%	IW* = Immediate Written: (3 working days)	125%
RW* = Rush Written: (5 working days)	75%	SP* = Weekend, Holiday	CALL
		STAT* = Less than 48 hours	CALL

* Please call, expedited service not available for all testing

06-LO-F0435 Issue 2.0 Effective Date: 01/20/2012

Samples received unannounced with less than 48 hours holding time remaining may be subject to additional charges.

Sample analysis will be provided according to the standard UL GSA/Water Services Terms, which are available upon request. Any other terms proposed by Customer are deemed material alterations and are rejected unless expressly agree to in writing by UL.

Confirmation Report 278411

Verbal/Results Due To Reporting: 05/04/2012

Report Due Date: 05/08/2012

Order Number: 215798
Project: Monthly
Manager: vernon
Client Type: PWS
E-mail Report: No
E-mail Address:
Addition Report Info: No Report Additions

Sample #: 2628939
Primary Report: Generic
Secondary Report: Not Specified
Report Package: Package A
E-mail Receipt Conf: No

Logged By: depriest
Logged Date: 04/24/2012 09:59
Received By: depriest
Received Date: 04/24/2012 09:45
PO: see coc
P1202170 BULK ORDER

Primary Contact:
Wichita Falls, City of
Karen Menard
P. O. Box 1431

Wichita Falls TX 76307
940-691-1153
null (fax)

Bill To:
Same as Primary Contact

MAY - 2 2012

Report To:
Same as Primary Contact

Ship To:
Wichita Falls, City of
Karen Menard
Cypress Water Plant
4801 Big Ed Neal Drive
Wichita Falls TX 76310
AC HG 04-04-12

QC Criteria & Pricing Information

Qty	Type	Matrix	Chl	Status	Test	Origin	QC Criteria	Unit Price	Discount	Net Price
1	FS	SW	N	Valid	Giardia/Crypto F / 1623	TX	Non-Compliance	450.00	0.00	450.00

Pricing Summary

Net Total	450.00
Order Total	450.00

Anomalies Legend:
C = Client provided sample containers
H = Holding time anomaly
O = Other anomaly
P = Preservation anomaly
T = Temperature anomaly
# = NELAP

LogBook Verification

Sample	Type	Collection Date	Test	PWSID	Flags	Sample Site	Location
2628939	FS	04/23/2012 10:40	Giardia/Crypto F / 1623	TX2430001		1005 River Road	

past mb RP 5.3.12

Order Comments

********** END **********

UL Drinking Water Laboratory
Result Record Sheet

Run Number: 168066
PC File Name:
Order #/Proj Mgr: 215798/vernon

Instrument: Microscope DB
Analyst: A. Castelucci
Receipt Batch: 278411

Method(s): 1623
Submitted By: A. Castelucci
Today's Date: 05/01/2012

Client: Wichita Falls, City of / Karen Menard

Generated By: A. Castelucci

Sample ID: 2628939
Extracted: N/A

Type: Field Sample
Analyzed: 04/26/2012 08:30

Site: 1005 River Road

CAS Number	Parameter	MRL	Amount	Report	Units
N/A	Giardia	0.097	2.9594	2.959	cysts/L
N/A	Cryptosporidium	0.097	0.0000	< 0.097	oocysts/L

NOTE: Do not report parameters not present on this sheet. See run for comments.

Version 1.1.0.0

LABORATORY REPORT

This report contains 5 pages.
(including the cover page)

If you have any questions concerning this report, please do not hesitate to call us at (800) 332-4345 or (574) 233-4777.

This report may not be reproduced, except in full, without written approval from UL.

Laboratory Report

Client: City of Wichita Falls

Attn: Karen Menard
P. O. Box 1431
Wichita Falls, TX 76307

Report: 277738
Priority: Standard Written
Status: Final
PWS ID: TX2430001

Copies to: None

Sample Information

UL ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
2621168	1005 River Road	1623	04/09/12 10:15	Client	04/10/12 09:15

Report Summary

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call Jim Vernon at (574) 233-4777.

Note: This report may not be reproduced, except in full, without written approval from UL.

Authorized Signature

Title

4-20-12
Date

Client Name: City of Wichita Falls
Report #: 277738

UL LLC
110 S. Hill St., South Bend, IN 46617-2702 USA
T: 800.332.4345 / F: 574.233.8207 / W: UL.com

Client Name: City of Wichita Falls

Report #: 277738

Sampling Point: 1005 River Road

PWS ID: TX2430001

Microbiology									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
---	Giardia	1623	---	0.148	4.444	cysts/L	---	04/13/12 08:30	2621168
---	Cryptosporidium	1623	---	0.148	0.148	oocysts/L	---	04/13/12 08:30	2621168

For method 1623: The calculated MRL value is dependant on the volume filtered and the volume analyzed for each sample.

† UL has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

Lab Definitions

Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis.

Internal Standards (IS) - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

Laboratory Duplicate (LD) - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

Laboratory Fortified Blank (LFB) / Laboratory Control Sample (LCS) - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control.

Laboratory Method Blank (LMB) / Laboratory Reagent Blank (LRB) - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

Laboratory Trip Blank (LTB) / Field Reagent Blank (FRB) - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD) - is a sample aliquot taken from the same field sample source as the Matrix Spike Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix.

Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM) - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results.

Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV) - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the calibration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

Surrogate Standard (SS) / Surrogate Analyte (SUR) - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.

215798

110 S. Hill Street
South Bend, IN 46617
T: 1.800.332.4345
F: 1.574.233.8207

Order #

Batch #

www.ul.com/water

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CHAIN OF CUSTODY RECORD

Page 1 of 1

REPORT TO:	SAMPLER (Signature)	PWS ID #	STATE (sample origin)	PROJECT NAME	PO#
City of Wichita Falls	Mack McPherson	2430001	TX	LT2 Crypto 1623	P1202170

BILL TO:	COMPLIANCE MONITORING	Yes	No	POPULATION SERVED	SOURCE WATER
City of Wichita Falls			X	100,000+	SW

	LAB Number	COLLECTION DATE	COLLECTION TIME	AM	PM	SAMPLING SITE	TEST NAME	SAMPLE REMARKS	CHLORINATED YES	CHLORINATED NO	# OF CONTAINERS	MATRIX CODE	TURNAROUND TIME
1	2621168	04/06/12	10:15	X		1005 River Road	Crypto/Giardia 1623		X		1	SW	SW
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													
13													
14													

RELINQUISHED BY:(Signature)	DATE	TIME	RECEIVED BY:(Signature)	DATE	TIME
Mack McPherson	04/06/12	1:20 AM PM			AM PM
RELINQUISHED BY:(Signature)	DATE	TIME	RECEIVED BY:(Signature)	DATE	TIME
		AM PM			AM PM
RELINQUISHED BY:(Signature)	DATE	TIME	RECEIVED FOR LABORATORY BY:	DATE	TIME
		AM PM		41012	0915 AM PM

LAB RESERVES THE RIGHT TO RETURN UNUSED PORTIONS OF NON-AQUEOUS SAMPLES TO CLIENT

LAB COMMENTS

CONDITIONS UPON RECEIPT (check one): X Iced: Wet/Blue ___ Ambient 1.2 °C Upon Receipt ___ N/A

MATRIX CODES:

DW-DRINKING WATER
RW-REAGENT WATER
GW-GROUND WATER
EW-EXPOSURE WATER
SW-SURFACE WATER
PW-POOL WATER
WW-WASTE WATER

TURN-AROUND TIME (TAT) - SURCHARGES

SW = Standard Written: (15 working days)	0%	IV* = Immediate Verbal: (3 working days)	100%
RV* = Rush Verbal: (5 working days)	50%	IW* = Immediate Written: (3 working days)	125%
RW* = Rush Written: (5 working days)	75%	SP* = Weekend, Holiday	CALL
		STAT* = Less than 48 hours	CALL

* Please call, expedited service not available for all testing

06-LO-F0435 Issue 2.0 Effective Date: 01/20/2012

Samples received unannounced with less than 48 hours holding time remaining may be subject to additional charges.

Sample analysis will be provided according to the standard UL GSA/Water Services Terms, which are available upon request. Any other terms proposed by Customer are deemed material alterations and are rejected unless expressly agree to in writing by UL.

Confirmation Report 277738

Verbal/Results Due To Reporting: 04/20/2012

Report Due Date: 04/24/2012

Order Number: 215798
Project: Monthly
Manager: vernon
Client Type: PWS
E-mail Report: No
E-mail Address:
Addition Report Info: No Report Additions

Sample #: 2621168
Primary Report: Generic
Secondary Report: Not Specified
Report Package: Package A
E-mail Receipt Conf: No

Logged By: spurgeon
Logged Date: 04/10/2012 10:10
Received By: spurgeon
Received Date: 04/10/2012 09:15
PO: see coc P1202170 Bulk

Primary Contact:
Wichita Falls, City of
Karen Menard
P. O. Box 1431

Wichita Falls TX 76307
940-691-1153
null (fax)

Bill To:
Same as Primary Contact

Ship To:
Wichita Falls, City of
Karen Menard
Cypress Water Plant
4801 Big Ed Neal Drive
Wichita Falls TX 76310
ACHG 4-11-12

Report To:
Same as Primary Contact

REC'D APR 19 4/24/12

QC Criteria & Pricing Information

Qty	Type	Matrix	Chl	Status	Test	Origin	QC Criteria	Unit Price	Discount	Net Price
1	FS	SW	Y	Valid	Giardia/Crypto F / 1623	TX	Non-Compliance	450.00	0.00	450.00

Pricing Summary

Net Total	450.00
Order Total	450.00

Anomalies Legend:
C = Client provided sample containers
H = Holding time anomaly
O = Other anomaly
P = Preservation anomaly
T = Temperature anomaly
# = NELAP

LogBook Verification

Sample	Type	Collection Date	Test	PWSID	Flags	Sample Site	Location
2621168	FS	04/09/2012 10:15	Giardia/Crypto F / 1623	TX2430001		1005 River Road	

Order Comments

********** END **********

UL Drinking Water Laboratory
Result Record Sheet

Run Number: 167665
PC File Name:
Order #/Proj Mgr: 215798/vernon

Instrument: Microscope DB
Analyst: H. Wiseman
Receipt Batch: 277738

Method(s): 1623
Submitted By: S. Fradenburg
Today's Date: 04/18/2012

Client: Wichita Falls, City of / Karen Menard

Generated By: S. Fradenburg

Sample ID: 2621168
Extracted: N/A

Type: Field Sample
Analyzed: 04/13/2012 08:30

Site: 1005 River Road

CAS Number	Parameter	MRL	Amount	Report	Units
N/A	Giardia	0.148	4.4444	4.444	cysts/L
N/A	Cryptosporidium	0.148	0.1481	0.148	oocysts/L

NOTE: Do not report parameters not present on this sheet. See run for comments.

Version 1.1.0.0

LABORATORY REPORT

This report contains 5 pages.
(including the cover page)

If you have any questions concerning this report, please do not hesitate to call us at (800) 332-4345 or (574) 233-4777.

This report may not be reproduced, except in full, without written approval from UL.

UL LLC
110 S. Hill St., South Bend, IN 46617-2702 USA
T: 800.332.4345 / F: 574.233.8207 / W: UL.com

Laboratory Report

Client: City of Wichita Falls

Attn: Karen Menard
P. O. Box 1431
Wichita Falls, TX 76307

Report: 277578
Priority: Standard Written
Status: Final
PWS ID: TX2430001

Copies to: None

Sample Information

UL ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
2619531	River Road Effluent	521	04/04/12 09:05	Client	04/05/12 09:45

Report Summary

Project: 221820

Note: The sample submitted for analysis was received at a temperature of 11.6°C.

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call Jim Vernon at (574) 233-4777.

Note: This report may not be reproduced, except in full, without written approval from UL.

Authorized Signature Title 4.20.12 Date

Client Name: City of Wichita Falls
Report #: 277578

UL LLC
110 S. Hill St., South Bend, IN 46617-2702 USA
T: 800.332.4345 / F: 574.233.8207 / W: UL.com

Client Name: City of Wichita Falls Report #: 277578

Sampling Point: River Road Effluent PWS ID: TX2430001

Semi-volatile Organic Chemicals

Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed	UL ID #
930-55-2	N-Nitrosopyrrolidine (NPYR)	521	---	2.0	< 2.0	ng/L	04/09/12 09:30	04/18/12 00:24	2619531
924-16-3	N-Nitrosodi-N-butylamine (NDBA)	521	---	4.0	< 4.0	ng/L	04/09/12 09:30	04/18/12 00:24	2619531
55-18-5	N-Nitrosodiethylamine (NDEA)	521	---	5.0	< 5.0	ng/L	04/09/12 09:30	04/18/12 00:24	2619531
62-75-9	N-Nitrosodimethylamine (NDMA)	521	---	2.0	< 2.0	ng/L	04/09/12 09:30	04/18/12 00:24	2619531
621-64-7	N-Nitrosodi-N-propylamine (NDPA)	521	---	7.0	< 7.0	ng/L	04/09/12 09:30	04/18/12 00:24	2619531
10595-95-6	N-Nitrosomethylethylamine (NMEA)	521	---	3.0	< 3.0	ng/L	04/09/12 09:30	04/18/12 00:24	2619531
100-75-4	N-Nitrosopiperidine (NPIP)	521	---	2.0	< 2.0	ng/L	04/09/12 09:30	04/18/12 00:24	2619531

† UL has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

Lab Definitions

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Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV) - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the calibration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

Surrogate Standard (SS) / Surrogate Analyte (SUR) - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.

110 S. Hill Street
South Bend, IN 46617
T: 1.800.332.4345
F: 1.574.233.8207

Order #
Batch #

www.ul.com/water

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CHAIN OF CUSTODY RECORD

Page 1 of 1

REPORT TO:	SAMPLER (Signature)	PWS ID #	STATE (sample origin)	PROJECT NAME	PO#
Karen Menard	Mack McPherson	24300001	TX	221820	P12028168

BILL TO:	Yes	No	POPULATION SERVED	SOURCE WATER
City of Wichita Falls		X	100,000 +	wastewater effluent

	LAB Number	COLLECTION DATE	TIME	AM	PM	SAMPLING SITE	TEST NAME	SAMPLE REMARKS	CHLORINATED YES	CHLORINATED NO	# OF CONTAINERS	MATRIX CODE	TURNAROUND TIME
1	2619531	04/04/12	9:05	X		River Road Effluent	Nitrosamine		X		1	SW	SW
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													
13													
14													

RELINQUISHED BY:(Signature)	DATE	TIME	RECEIVED BY:(Signature)	DATE	TIME
Mack McPherson	04/04/12	2:00 AM (PM)			AM PM
RELINQUISHED BY:(Signature)	DATE	TIME AM PM	RECEIVED BY:(Signature)	DATE	TIME AM PM
RELINQUISHED BY:(Signature)	DATE	TIME AM PM	RECEIVED FOR LABORATORY BY: Amartis	DATE 4/5/12	TIME 0945 AM PM

LAB RESERVES THE RIGHT TO RETURN UNUSED PORTIONS OF NON-AQUEOUS SAMPLES TO CLIENT

LAB COMMENTS OK to Run Per J.V. 4-5-12
Small ice packs only in cooler

CONDITIONS UPON RECEIPT (check one): 11.6 am 4-5-12
✓ Iced: Wet/Blue ___ Ambient ___ °C Upon Receipt N/A

MATRIX CODES:

DW-DRINKING WATER
RW-REAGENT WATER
GW-GROUND WATER
EW-EXPOSURE WATER
SW-SURFACE WATER
PW-POOL WATER
WW-WASTE WATER

TURN-AROUND TIME (TAT) - SURCHARGES

SW = Standard Written: (15 working days)	0%	IV* = Immediate Verbal: (3 working days)	100%
RV* = Rush Verbal: (5 working days)	50%	IW* =Immediate Written: (3 working days)	125%
RW* = Rush Written: (5 working days)	75%	SP* = Weekend, Holiday	CALL
		STAT* = Less than 48 hours	CALL

* Please call, expedited service not available for all testing

06-LO-F0435 Issue 2.0 Effective Date: 01/20/2012

Samples received unannounced with less than 48 hours holding time remaining may be subject to additional charges.

Sample analysis will be provided according to the standard UL GSA/Water Services Terms, which are available upon request. Any other terms proposed by Customer are deemed material alterations and are rejected unless expressly agree to in writing by UL.

Confirmation Report 277578

Verbal/Results Due To Reporting: 04/23/2012

Report Due Date: 04/26/2012

Order Number:	221820	**Sample #:**	2619531	**Logged By:**	martis
Project:	TX-PWS	**Primary Report:**	Generic	**Logged Date:**	04/05/2012 12:58
Manager:	vernon	**Secondary Report:**	Not Specified	**Received By:**	martis
Client Type:	PWS	**Report Package:**	Package A	**Received Date:**	04/05/2012 09:45
E-mail Report:	Yes	**E-mail Receipt Conf:**	No	**PO:**	P1202868 verbal
E-mail Address:	karen.menard@wichitafallstx.gov				
Addition Report Info:					

RECEIVED APR 19 2012

Primary Contact:
Wichita Falls, City of
Karen Menard
P. O. Box 1431

Wichita Falls TX 76307
940-691-1153
null (fax)

Bill To:
Same as Primary Contact

Ship To:
Wichita Falls, City of
Karen Menard
Cypress Water Plant
4801 Big Ed Neal Drive
Wichita Falls TX 76310

ACHG 04/10/12 Written RP 4.20.12

Report To:
Same as Primary Contact

QC Criteria & Pricing Information

Qty	Type	Matrix	Chl	Status	Test	Origin	QC Criteria	Unit Price	Discount	Net Price
1	FS	SW	Y	Valid	Nitrosamines / 521	TX	Non-Compliance	400.00	0.00	400.00

Pricing Summary

Net Total	400.00
Order Total	400.00

Anomalies Legend:

C = Client provided sample containers
P = Preservation anomaly
H = Holding time anomaly
T = Temperature anomaly
O = Other anomaly
# = NELAP

LogBook Verification

Sample	Type	Collection Date	Test	PWSID	Flags	Sample Site	Location
2619531	FS	04/04/2012 09:05	Nitrosamines / 521	TX2430001	T	River Road Effluent	

The temperature of sample 2619531 [11.6] is outside the required <= 10 deg C.(martis 04/05/2012)

Lab Comment: Client will accept qualified data. One sample is finished DW and the other site is treated effluent from WWTP(vernon 03/26/2012)

Order Comments

********** END **********

UL Drinking Water Laboratory
Sample Result Record Sheet

Sample Matrix: SW
Acquisition File: Not Available
Data Directory: 041712a
Instrument: GC/MS - DF
Extracted Date: 04/09/2012 09:30
Sample Number: 2619531
Dilution Factor: 1
Sample Site: River Road Effluent
Sample Location: Not Available
Sample Description: CITY OF WICHITA FALLS RIVER ROAD EFFLU
Order Number: 221820
Client: Wichita Falls, City of / Karen Menard

Method: 521
Calibration File: 521-041712-DF.mth
Analysis Date: 04/18/2012
Analysis Time: 00:24
Analyst: flores
Results Submitted By: flores
Run Number: 167653
Run Status: Completed
State of Origin: Texas
Project QC: Non-Compliance
Receipt Batch Number: 277578
Project Manager: vernon

Sample Quality Control

Internal Standards		CCC	CCC	CCC Area Limits			IC	IC	IC Area Limits			
Parameter	Area	Area	% Resp	Lwr	Upr	Pass / Fail	Avg Area	% Resp	Lwr	Upr	Pass / Fail
IS-NDPA-d14	95869	79209	121	70	130	PASS	90613	106	50	150	PASS

Surrogate Standards						Limits		
Parameter	Amount	Normalized	Units	Target	%Rec	Lower	Upper	Pass/Fail
SS-NDMA-d6	15.164	15.164	ng/L	20	76	70	130	PASS

Ordered Parameter Results

Parameter	Amount	Reported Amount	MRL	Units	MCL	SMCL	V
N-Nitrosodimethylamine (NDMA)	1.961 NS	< 2.0	2.0	ng/L			
N-Nitrosomethylethylamine (NMEA)	0.226 NS	< 3.0	3.0	ng/L			
N-Nitrosodiethylamine (NDEA)	0.741 NS	< 5.0	5.0	ng/L			
N-Nitrosodi-N-propylamine (NDPA)	0.243 NS	< 7.0	7.0	ng/L			
N-Nitrosopyrrolidine (NPYR)	1.226 NS	< 2.0	2.0	ng/L			
N-Nitrosopiperidine (NPIP)	Not Found	< 2.0	2.0	ng/L			
N-Nitrosodi-N-butylamine (NDBA)	0.816 NS	< 4.0	4.0	ng/L			

Additional Searched For Parameters

Parameter	Amount	Reported Amount	MRL	Units	MCL	SMCL	V

Tentatively Identified Compounds

Parameter	RT (min)	Area	Amount	Units	CAS Number

Comments:

NC = Not Confirmed, NS = Not Searched, J = Between MDL and MRL

Laboratory Report

Client: City of Wichita Falls

Attn: Mark Southard
P. O. Box 1431
Wichita Falls, TX 76307

Report: 275814
Priority: Rush Verbal
Status: Final
PWS ID: TX2430001

Copies to: None

Sample Information

UL ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
2598998	1005 River Road	1623	02/27/12 09:45	Client	02/28/12 09:30

Report Summary

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call Jim Vernon at (574) 233-4777.

lote: This report may not be reproduced, except in full, without written approval from UL.

Authorized Signature

Title

3-12-12
Date

Client Name: City of Wichita Falls
Report #: 275814

UL LLC
110 S. Hill St., South Bend, IN 46617-2702 USA
T: 800.332.4345 / F: 574.233.8207 / W: UL.com

Client Name: City of Wichita Falls Report #: 275814

Sampling Point: 1005 River Road PWS ID: TX2430001

Microbiology									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
---	Giardia	1623	---	1.235	**25.926**	cysts/L	---	03/02/12 08:35	2598998
---	Cryptosporidium	1623	---	1.235	**1.235**	oocysts/L	---	03/02/12 08:35	2598998

For method 1623: The calculated MRL value is dependant on the volume filtered and the volume analyzed for each sample.

† UL has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

Laboratory Report

Client: City of Wichita Falls

Attn: Mark Southard
P. O. Box 1431
Wichita Falls, TX 76307

Report: 275677
Priority: Rush Verbal
Status: Final
PWS ID: TX2430001

Copies to: None

Sample Information

UL ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
2597143	1005 River Road	1623	02/22/12 00:00	Client	02/23/12 15:30

Report Summary

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call Jim Vernon at (574) 233-4777.

ote: This report may not be reproduced, except in full, without written approval from UL.

Authorized Signature

Title

2-27-12
Date

Client Name: City of Wichita Falls
Report #: 275677

UL LLC
110 S. Hill St., South Bend, IN 46617-2702 USA
T: 800.332.4345 / F: 574.233.8207 / W: UL.com

Client Name: City of Wichita Falls Report #: 275677

Sampling Point: 1005 River Road PWS ID: TX2430001

Microbiology									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
—	Giardia	1623	—	0.067	**8.148**	cysts/L	—	02/24/12 09:45	2597143
—	Cryptosporidium	1623	—	0.067	< 0.067	oocysts/L	—	02/24/12 09:45	2597143

For method 1623: The calculated MRL value is dependant on the volume filtered and the volume analyzed for each sample.

† UL has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

Laboratory Report

Client: City of Wichita Falls

Attn: Mark Southard
P.O. Box 1431
Wichita Falls, TX 76307

Report: 275342
Priority: Rush Verbal
Status: Final .
PWS ID: TX2430001

Copies to: None

Sample Information

UL ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
2592725	1005 River Road	1623	02/15/12 13:35	Client	02/16/12 09:30

Report Summary

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call Jim Vernon at (574) 233-4777.

Note: This report may not be reproduced, except in full, without written approval from UL.

Authorized Signature Title 2-22-12 Date

Client Name: City of Wichita Falls
Report #: 275342

UL LLC
110 S. Hill St., South Bend, IN 46617-2702 USA
T: 800.332.4345 / F: 574.233.8207 / W: UL.com

Client Name: City of Wichita Falls

Report #: 275342

Sampling Point: 1005 River Road

PWS ID: TX2430001

Microbiology									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	UL ID #
—	Giardia	1623	—	0.010	**6.800**	cysts/L	—	02/17/12 09:00	2592725
—	Cryptosporidium	1623	—	0.010	**0.037**	oocysts/L	—	02/17/12 09:00	2592725

For method 1623: The calculated MRL value is dependant on the volume filtered and the volume analyzed for each sample.

† UL has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

APPENDIX I

Water and Wastewater Plant Personnel Certifications

SOP for Microscopic Examination

WATER AND WASTEWATER PLANT PERSONNEL CERTIFICATIONS

As of April 2013

CYPRESS WATER TREATMENT PLANT

			Specialty Classes						
Name	License	Date Issued	Waterborne Pathogens	Water Laboratory	Intermediate Laboratory	Advanced Water Lab	Identification of Microorganisms	Intro to Membrane Tech	Wastewater Laboratory
Tommy Langford	A Water	9/26/2006		X					
Daniel Nix	A Water	5/1/1993	X	X		X	X		X
Mark Southard	A Water	6/2/2008	X	X	X		X	X	
Luke Baker	B Surface Water	8/22/2009		X				X	
Gayland Bragg	B Surface Water	11/28/2005	X	X	X		X	X	X
Isaac DeVore	B Surface Water	3/12/2009		X				X	
Paul Fisher	B Surface Water	10/7/1988	X	X				X	
Michael Miller	B Surface Water	11/29/2005	X	X				X	
Robert Phillips	B Surface Water	4/11/2005		X					
Tony Whitley	B Surface Water	11/3/2008		X	X		X	X	
Steven Willett	B Surface Water	3/17/2003		X					
Bruce Briesemeister	C Surface Water	8/19/2011		X					
William Davis	C Surface Water	7/15/2009		X	X				
Joseph Hurt	C Surface Water	4/13/2012		X					
George Leinweber	C Surface Water	1/11/2001		X				X	
Calvin McPherson	C Surface Water	9/30/2009	X	X	X		X		
David Pace	C Surface Water	11/4/2010		X					
Rusty Park	C Surface & C Wastewater	01/24/13 06/03/11						X	
Blair Ramon	C Surface Water	9/4/2009	X						
Gerald Smith	C Surface Water	2/9/2007		X	X				
Mark Soliz	C Surface Water	9/10/2009		X					
Eric Stevens	C Surface Water	9/1/2011		X				X	
Eustacio Vela	C Surface Water	9/14/2007		X					
Misty Klein	D Water	9/12/2012		X					X

WASTEWATER TREATMENT PLANT

Employee	License	First Year	# of Years	Specialty Classes		
				Biological Treatment	Waterborne Pathogen	Identification of Micro Organisms
Harold Burris	A	6/97	15.8	Yes	No	Yes
Bill Thornton	A	11/04	8.4	Yes	Yes	Yes
Johnny Chavez	B	2/92	21.1	No	Yes	Yes
Nicki Lowery	B	11/11	1.5	Yes	No	No
Jessie Martin	B	3/79	34.1	Yes	No	No
Orville Mcilvanie	B	8/12	0.6	No	No	No
James Seigler	B	7/12	0.7	Yes	No	No
Mark Huggins	B	10/11	1.5	No	No	No
Paul Carr	B	6/11	1.8	Yes	No	No
Ian Fox	B	5/11	1.9	No	No	No
Katharine Demars	B	8/10	2.6	Yes	No	No
Paul Blackwell	B	12/05	7.3	Yes	Yes	No
Ron Kendrick	B	1/05	8.2	No	Yes	Yes
David Souilliere	B	7/99	13.8	Yes	Yes	Yes
Orville Sosebee	B	3/85	28.1	No	No	No

SOP For Microscopic Examination

Purpose: To confirm that there are no adverse affects in the aerobic system of the River road WWTP.

Procedures: The microscopic exam and the settleabilities will be done three times every day starting at Midnight at 8 hour intervals. The test will be done as soon as possible at the beginning of each eight hours.

One milliliter of sample will be taken by glass dropper from each of the aeration basin samples after the sample has been gently stirred.

Only one drop from the glass dropper will be placed on the microscopic slide. Two to three samples can be placed onto one slide. A cover slide will be placed over each sample drop. The sample drops should not cross contaminate.

The microscopic examine will be done on a magnification of 4X using the microscopic camera.

Each sample will be observed for any detrimental affects to the organisms.

A picture of the best sample for representation of the current conditions will be taken using the software to the microscopic camera. The picture will be saved by the default of the software.

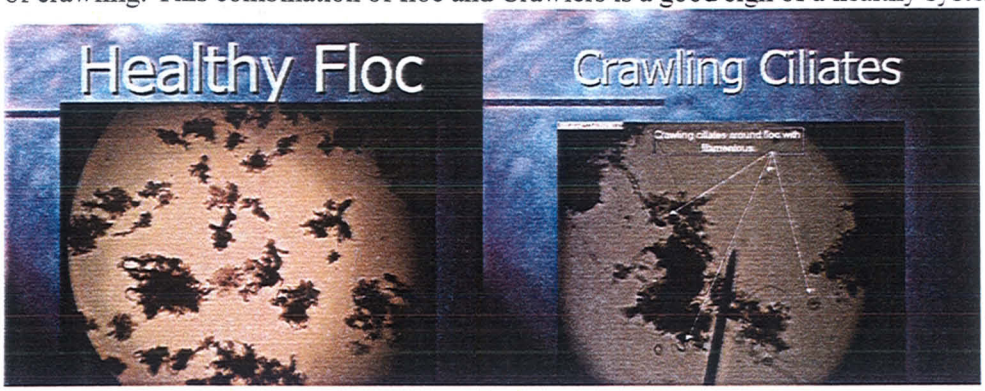
If the microscopic exam needs to be saved for follow up, another picture is to be taken and saved with a special name attached to it. Instruction for this will be shown in person.

Remember the key word in doing a microscopic exam is significant. Some situations that may produce a poor sample causing less activity in the organism are one basin has had a low Dissolved Oxygen, a rain event may reduce the amount of food, the sample is not fresh or has experienced drying out, or excessive temperatures.

The following will be the general guide lines for the microscopic exam. Not all scenarios can be anticipated so you will in addition have to rely on your experience and training.

We want to start with what is healthy floc. All healthy floc has some common denominators.

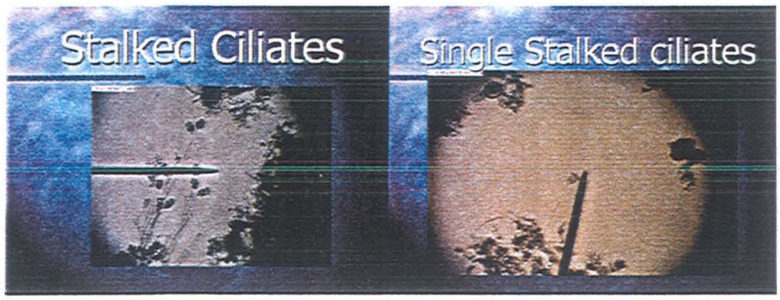
A healthy flock will be irregular and have a porous look to it as seen in the picture below. The crawling Ciliates are included because when the floc structure is growing quickly this provides food for Ciliates that eat the floc. This would be the crawling Ciliates. The cilia appear to be on only one side that is kept next to the structure or floc that they are moving on giving the appearance of crawling. This combination of floc and Crawlers is a good sign of a healthy system.



A fast settling spherical shaped flock will *produce less* surface area then a slower settling branching flock.

The Floc structure is essential to maximize the adsorptions of the nutrients in the water. The greater the surface area the greater the contact opportunities with the floc.

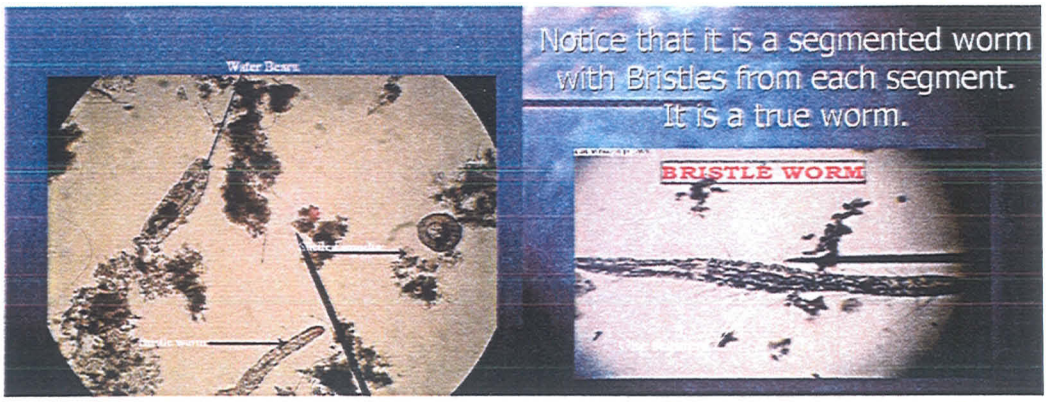
One of the easiest organisms to identify potential toxicity is the stalked Ciliates. The Stalked ciliate remains attached to a surface. In the case of wastewater, it is the floc particles. When adverse conditions are experienced, they detach from their stem and drift. This is a passive mechanism to find a better environment. If the environment is adverse, this will happen in a large percentage of the population. At any given time, there will be some that have detached to relocate. Stalked ciliates are shown below.



Rotifers are much like the Stalked Ciliates. The both feed by bringing food into their mouths by the flowing action of cilia. Rotifers receive their name because this flowing action looks

like the mouth parts are rotating. Once again, if there was a large die off of the Rotifers from one observation to another it could be a sign of toxicity. Rotifers when they die suddenly leave the harden body behind. It is a large number of dead compared to the previous number of live ones that would be an indicator.

More complex organisms, such as Water Bears and Bristle worms, are not as good of an indicator of toxicity. Water Bears reproduce clones by self fertilizing the eggs inside of them. When the eggs hatch, they break out of the parent body killing the parent. So finding dead Water Bears usually only means you found dead parents of Water Bears. Bristle worms are true worms and though they are detrimental to floc formation due to their foraging efforts they are seldom found dead. In addition, when Bristle worms have been found dead there have been no other organisms harmed.



These are the main observations for detecting toxicity. If you suspect there may be a problem look over all the data for the day and if there were any problems during the day such as taking offline or bringing online any basins.

If Toxicity is suspected, make all necessary adjustment to the plant parameters as needed. This may even include diverting water to an empty basin.

APPENDIX J

DPR CT Calculations

R/O Membrane and 2010 Plant CT Study

TCEQ April 30, 2010 Letter

DPR WTP CT CALCULATIONS

1. Reuse Pipeline:

- Pipe I.D.= 26.97"
- Flow=7.5 mgd
- Velocity= 3.0 ft/sec
- Length=65,000 feet
- T10= 361 minutes
- Monochloramines = 1.5 mg/l
- Actual CT= (361)(1.5) = 541

	7 Degrees C	30 Degrees C
Giardia	541/343 x 0.5 = 0.79	541/750 x 3.0 = 2.16
Viruses	541/771 x 2.0 = 1.4	541/373 x 4.0 = 5.8

2. MF/RO Clarifier:

- T10= 288 minutes (From Approved CT Study)
- Monochloramines = 1.5 mg/l
- Actual CT= (288)(1.5) = 432

	7 Degrees C	30 Degrees C
Giardia	432/343 x 0.5 = 0.63	432/750 x 3.0 = 1.72
Viruses	432/771 x 2.0 = 1.12	432/373 x 4.0 = 4.63

3. Microfilters:

- T10= 2.4 minutes (From CT Software)
- Monochloramines = 1.5 mg/l
- Actual CT= (2.4)(1.5) = 3.6

	7 Degrees C	30 Degrees C
Giardia	3.6/343 x 0.5 = 0.005	3.6/750 x 3.0 = 0.014
Viruses	3.6/771 x 2.0 = 0.009	3.6/373 x 4.0 = 0.038

4. 2010 Conventional Plant:

- 5 MGD Secondary Reservoir To Cypress WTP Splitter Box (D1 thru D3)
- 10 MGD Splitter Box To Distribution (Includes Reuse Water) (D4 thru D6)

Based on 2010 Approved CT Study:

D1 T10 = 8.4 minutes, CLO2 = 0.5 mg/l; CT = (8.4)(0.5) = 4.2
D2 T10 = 10.08 minutes, CLO2 = 0.4 mg/l; CT = (10.08)(0.4) = 4.03
D3 T10 = 115.92 minutes, CLO2 = 0.4 mg/l; CT = (115.92)(0.4) = 46.37

D4 T10 = 70.1 minutes, Total Chlorine = 0.3 mg/l; CT = (70.1)(0.3) = 21.03
D5 T10 = 7.8 minutes, Total Chlorine = 0.3 mg/l; CT = (7.8)(0.3) = 2.34
D6 T10 = 214.75 minutes, Total Chlorine = 0.3 mg/l; CT = (214.75)(0.3) = 64.4

7 Degrees C

Giardia (4.2/4.2 x 0.5) + (4.03/4.2 x 0.5) + (46.4/24.8 x 3.0) + (21.03/343 x 0.5)
(2.34/343 x 0.5) + (64.4/343 x 0.5) = 6.71

Viruses (4.2/5.04 x 2.0) + (4.03/5.04 x 2.0) + (46.4/30.1 x 4.0) + (21.03/771 x 2.0)
(2.34/771 x 2.0) + (64.4/771 x 2.0) = 9.62

30 Degrees C

Giardia (4.2/7.3 x 2.0) + (4.03/7.3 x 2.0) + (46.4/11.0 x 3.0) + (21.03/125 x 0.5)
(2.34/125 x 0.5) + (64.4/125 x 0.5) = 15.24

Viruses (4.2/3.2 x 3.0) + (4.03/3.2 x 3.0) + (46.4/6.25 x 4.0) + (21.03/161 x 2.0)
(2.34/161 x 2.0) + (64.4/161 x 2.0) = 38.5

CT Tables for Disinfection with ClO_2

This appendix contains the CT tables you should use when inactivating *Giardia lamblia* and viruses with chlorine dioxide. The information used to generate these tables and the associated notes was derived from Appendixes E and F of the U.S. Environmental Protection Agency's Guidance Manual for Compliance with the Filtration and Disinfection Requirements for Public Water Systems Using Surface Water Sources, Office of Drinking Water, Cincinnati, OH, AWWA Publication No. 20271 (October 1990).

Table D-2.1: CT Required for Inactivation of Giardia Cysts at pH between 6.0 and 9.49 *(1)*

	Temperature (°C)					
Inactivation	**1≤**	**5**	**10**	**15**	**20**	**25≥**
0.5-log	10.0	4.3	4.0	3.2	2.5	2.0
1.0-log	21.0	8.7	7.7	6.3	5.0	3.7
1.5-log	32.0	13.0	12.0	10.0	7.5	5.5
2.0-log	42.0	17.0	15.0	13.0	10.0	7.3
2.5-log	52.0	22.0	19.0	16.0	13.0	9.0
3.0-log	63.0	26.0	23.0	19.0	15.0	11.0

(1) No disinfection credit is allowed for pH above 9.49.

Table D-2.2: CT Required for Inactivation of Viruses at pH between 6.0 and 9.49 *(1,2)*

	Temperature (°C)					
Inactivation	**1≤**	**5**	**10**	**15**	**20**	**25**
2-log	8.4	5.6	4.2	2.8	2.1	1.4
3-log	25.6	17.1	12.8	8.6	6.4	4.3
4-log	50.1	33.4	25.1	16.7	12.5	8.4

(1) No disinfection credit is allowed for pH above 9.49.

(2) For temperatures above 25°C, $CT_{required}$ drops by a factor of two for each 10°C rise in temperature — that is, the $CT_{required}$ at 30°C is one-half the $CT_{required}$ at 20°C.

CT Tables for NH_2Cl (Chloramines)

This appendix contains the CT tables you should use when inactivating *Giardia lamblia* and viruses with chloramine. The information used to generate these tables and the associated notes was derived from Appendixes E and F of the U.S. Environmental Protection Agency's Guidance Manual for Compliance with the Filtration and Disinfection Requirements for Public Water Systems Using Surface Water Sources, Office of Drinking Water, Cincinnati, OH, AWWA Publication No. 20271 (October 1990).

Table D-4.1: CT Required for Inactivation of Giardia Cysts at pH between 6.0 and 9.49 *(1,2)*

	Temperature (°C)					
Inactivation	**1≤**	**5**	**10**	**15**	**20**	**25≥**
0.5-log	635	365	310	250	185	125
1.0-log	1270	735	615	500	370	250
1.5-log	1900	1100	930	750	550	375
2.0-log	2535	1470	1230	1000	735	500
2.5-log	3170	1830	1540	1250	915	625
3.0-log	3800	2200	1850	1500	1100	750

(1) Table D-4.1 applies only if chlorine is injected prior to ammonia in the treatment process.
(2) No disinfection credit is allowed for pH above 9.49.

Table D-4.2. CT Required for Inactivation of Viruses at pH between 6.0 and 9.49 *(1,2,3)*

	Temperature (°C)					
Inactivation	**1≤**	**5**	**10**	**15**	**20**	**25**
2-log	1245	857	643	428	321	214
3-log	2063	1423	1067	712	534	356
4-log	2883	1988	1491	994	746	497

(1) Table D-4.2 applies only if chlorine is injected prior to ammonia in the treatment process.
(2) No disinfection credit is allowed for pH above 9.49.
(3) For temperatures above 25°C, $CT_{required}$ drops by a factor of two for each 10°C rise in temperature — that is, the $CT_{required}$ at 30°C is one-half the $CT_{required}$ at 20°C.

Bryan W. Shaw, Ph.D., *Chairman*
Buddy Garcia, *Commissioner*
Carlos Rubinstein, *Commissioner*
Mark R. Vickery, P.G., *Executive Director*

PWS/2430001/CO
CN 600129316
RN 105598759

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

October 21, 2011

Mr. Tyson Traw, P.E.
Biggs & Mathews, Inc. Consulting Engineers
2500 Brook Avenue
Wichita Falls, Texas 76301-6105

Subject: Revised Contact Time Study
City of Wichita Falls – PWS ID No. 2430001
Cypress Water Treatment – RO Membrane Plant – TCEQ ID 21567
Wichita County, Texas

Dear Mr. Traw:

On April 4, 2011, the Texas Commission on Environmental Quality (TCEQ) received your letter dated April 1, 2011 requesting a revised Contact Time (CT) study for the City of Wichita Falls Cypress Reverse Osmosis Membrane Water Treatment Plant (MWTP) in order to demonstrate that the MWTP can meet applicable disinfection requirements for the modifications to the MWTP. The information in this TCEQ letter for City of Wichita Falls MWTP should replace, not supplement, all previous CT studies for this facility.

The City of Wichita Falls MWTP is a 14 million gallons per day (MGD) microfiltration (MF) treatment facility receiving raw water from Lake Kemp to the Headquarters Road Reservoir and Pump Station located at the MWTP. The MWTP consists of a rapid mix basin, a clarifier, and five racks of a U.S. Filters/Memcor Model 540S10V MF membrane system and RO unit having 504 modules per rack. Filtrate water flows from the MWTP to the 1961 Water Treatment Plant, TCEQ ID 15131, and the 2010 Water Treatment Plant, where it is combined with the filtered water in each plants 0.10-million-gallon (MG) clearwell and pump station increasing the capacity of the 1961 Water Treatment Plant to 26 MGD, and the 2010 Water Treatment Plant to 20 MGD. The combined water then flows to the combined WTPs three ground storage tanks.

The proposed disinfection protocol involves the injection of chlorine dioxide (ClO_2) downstream of the Headquarters Road Reservoir and Pump Station, and chlorine (Cl2) and liquid ammonia gas (NH4) upstream of both the 1961 WTP and 2010 WTP 0.10-MG clearwells and transfer pump stations. Chlorine residual is monitored at three locations along the 42-inch raw water pipe at 400, 900 and 6,500 linear feet downstream of the Headquarters Road Reservoir and Pump Station, prior to entering the rapid mix basin. Chloramine residual is monitored downstream of both the 0.10-MG clearwell and transfer pump stations, and downstream of the three ground storage tanks, prior to entering the distribution system.

A disinfection zone is a segment of the treatment process which begins at a disinfectant application point and ends at the subsequent disinfectant application or residual sampling point. Each disinfectant application point, regardless of the frequency of use, represents the beginning of a separate disinfection zone. However, a plant may have only one disinfectant point and choose to monitor at more than one point, creating multiple disinfection zones. Based on the information we had at the time of our review, we have identified five disinfection zones at the City of Wichita Falls Cypress MWTP. The first disinfection zone, D1, consists of 85 linear feet (LF) of 42-inch raw water pipe. The second disinfection zone, D2, consists of 2,225LF of 42-inch raw water pipe. The third disinfection zone, D3, consists of 62,690 LF of 42-inch raw water pipe. The fourth disinfection zone is divided into two treatment units, D4A and D4B. Each treatment train consists of a 0.10-MG clearwell and transfer pump station. The fifth disinfection zone, D5, is divided into three treatment units D5A, D5B and D5C for each of the three ground storage tanks. The treatment unit D5A consists of a 206-foot diameter, 10.0-MG ground storage tank. The treatment unit D5B consists of a 150-foot diameter, 5.0-MG ground storage tanks, and the treatment unit D5C consists of a 123-foot diameter, 3.0-MG ground storage tank.

CT calculations are used to evaluate the disinfection process. Since T_{10} values are required to calculate the CT for the treatment process, Table 1 was developed for the City of Wichita Falls CWTP RO MWTP. The T_{10} values are based on the information provided in your CT template dated April 4, 2011, TCEQ Comprehensive Compliance Investigation (CCI) conducted September 3, 2008, and the most recent TCEQ-approved CT Study dated January 31, 2007.

TABLE 1: T_{10} TABLE FOR CITY OF WICHITA FALLS CYPRESS WTP RO MWTP

DISINFECTION ZONE	TREATMENT UNIT	VOLUME (GAL)	FLOW RATE (MGD)	BAFFLING FACTOR	T_{10} (MIN)	
					Unit	Sum
D1	42-inch Raw Water Pipe	6,100[1]	14.00[9]	1.0[15]	0.629	0.63
D2	42-inch Raw Water Pipe	160,200[2]			16.474	16.47
D3	42-inch Raw Water Pipe	4,512,500[3]			464.15	464.15
D4A	0.10 MG Clearwell '10 Plant	109,100[4]	20.00[10]	0.5[16]	3.928	3.93
D4B	0.10 MG Clearwell '61 Plant	60,000[5]	26.00[11]	0.55[17]	1.828	1.83
D5A	10.0 MG Ground Storage Tank	4,987,000[6]	36.40[12]	0.3[18]	59.186	59.19
D5B	5.0 MG Ground Storage Tank	2,485,500[7]	6.76[13]	0.1[19]	52.951	52.95
D5C	3.0 MG Ground Storage Tank	1,493,500[8]	8.84[14]		24.33	24.33

Notes:

(1) Based on 85 linear feet (LF) of 42-inch raw water pipe, as per the CT submittal by Biggs & Mathews, Inc. Consulting Engineers (BMI) dated April 4, 2011.

(2) Based on a 2,225 LF of 42-inch raw water pipe, as per the CT submittal by BMI dated April 4, 2011.

(3) Based on 62,690 LF of 42-inch raw water pipe, as per the CT submittal by BMI dated April 4, 2011.

(4) Based on a "worst case" operating condition. In the absence of site-specific information, a minimum operating level of 50% of the nominal capacity is assumed. As per the CT submittal by BMI dated April 4, 2011, the WTP '10 Plant clearwell is 0.1 MG.

(5) Based on a "worst case" operating condition. In the absence of site-specific information, a minimum operating level of 50% of the nominal capacity is assumed. As per the CT submittal by BMI dated April 4, 2011, the WTP '61 Plant clearwell is 0.1 MG

(6) Based on a "worst case" operating condition. In the absence of site-specific information, a minimum operating level of 50% of the nominal capacity is assumed. As per the CT submittal by BMI dated April 4, 2011, the clearwell is 10.0 MG.

(7) Based on a "worst case" operating condition. In the absence of site-specific information, a minimum operating level of 50% of the nominal capacity is assumed. As per the CT submittal by BMI dated April 4, 2011, the clearwell is 5.0 MG.

(8) Based on a "worst case" operating condition. In the absence of site-specific information, a minimum operating level of 50% of the nominal capacity is assumed. As per the CT submittal by BMI dated April 4, 2011, the clearwell is 3.0 MG.

(9) Based on the design capacity of the City of Wichita Falls RO Membrane Plant, TCEQ ID 21567 (14 MGD), as per the CT submittal by BMI dated April 4, 2011.

(10) Based on the design capacity for the City of Wichita Falls '10 WTP (10 MGD) combined with the design capacity for the City of Wichita Falls RO Membrane WTP (10 MGD), for a total combined capacity of (20 MGD), as per the CT submittal by BMI dated April 4, 2011.

(11) Based on the design capacity for the City of Wichita Falls '61 WTP (16 MGD) combined with the design capacity for the City of Wichita Falls RO Membrane WTP (10 MGD), for a total combined capacity of (26 MGD), as per the CT submittal by BMI dated April 4, 2011.

(12) Based on 70% of the overall design capacity of the City of Wichita Falls Cypress Surface Water Treatment Plant (52 MGD) divided between the three ground storage tanks. 70% of the TPC for the 10.0 MG GST is equal to 36.4 MGD. As per the CT submittal by BMI dated April 4, 2011.

(13) Based on 13% of the overall design capacity of the City of Wichita Falls Cypress Surface Water Treatment Plant (52 MGD) divided between the three ground storage tanks. 13% of the TPC for the 5.0 MG GST is equal to 6.76 MGD. As per the CT submittal by BMI dated April 4, 2011.

(14) Based on 17% of the overall design capacity of the City of Wichita Falls Cypress Surface Water Treatment Plant (52 MGD) divided between the three ground storage tanks. 17% of the TPC for the 3.0 MG GST is equal to 8.84 MGD. As per the CT submittal by BMI dated April 4, 2011.

(15) Based on the assumption of "perfect" baffling characteristics for pipe.

(16) Based on the assumption of "average" baffling characteristics for basins with two internal baffles and a length to width of 30:1. As per the CT submittal by BMI dated April 4, 2011.

(17) Based on the approved TCEQ tracer study dated July 13, 1992 for the 0.1 MG clearwell.

(18) Based on the assumption of "poor" baffling characteristics for basins having two inlets, one outlet and three interior baffle walls.

(19) Based on the assumption of "unbaffled" baffling characteristics.

Below is a Disinfection Process Parameters Table to help operators at the plant complete their Surface Water Monthly Operating Report (SWMOR). In Table 2, we have characterized the T_{10} available in each of the disinfection zones based on the flow rate through the unit(s) that contributes most to the disinfection process within that zone. We have also provided the operators with the disinfection requirements that they must meet on a continual basis.

TABLE 2: DISINFECTION PROCESS PARAMETERS

APPROVED CT STUDY PARAMETERS						PERFORMANCE STANDARDS	
Parameters	Disinfection Zones					Log Inactivations	
	D1	D2	D3	D4A	D4B	Giardia	Viruses
Flow Rate (MGD)	14.00	14.00	14.00	20.00	26.00	0.5	2.0
T_{10} (minutes)	0.6	16.5	464.1	3.9	1.8		

APPROVED CT STUDY PARAMETERS						PERFORMANCE STANDARDS	
Parameters	Disinfection Zones					Log Inactivations	
	D5A	D5B	D5C	D7	D8	Giardia	Viruses
Flow Rate (MGD)	36.40	6.76	8.84	na	na	0.5	2.0
T_{10} (minutes)	59.2	53.0	24.3	na	na		

If your monitoring plan has changed as a result of this CT study, please submit an updated monitoring plan at the address below.

Monitoring Plan Coordinator (MC – 155)
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, TX 78711

Further information can be found in Regulatory Guidance (RG) 384 "How to Develop a Monitoring Plan for a Public Water System" or at TCEQ's website:

http://www.tceq.state.tx.us/permitting/water_supply/pdw/monitoring_plans/monitoring_plans.html

If you have any questions concerning our evaluation or if we may be of further assistance, please contact Ms. Rian McMorris at (512) 239-4487, by e-mail at Rian.McMorris@tceq.texas.gov or correspondence at:

Technical Review and Oversight Team (MC-159)
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, TX 78711-3087

Sincerely,

Ada Lichaa

Ada Lichaa, P.G., Manager
Plan & Groundwater Review Section
Water Supply Division
Texas Commission on Environmental Quality

AL/RM

Enclosure: CT Worksheet

cc: w/ enclosure: TCEQ Tracer Study File
TCEQ PWS File
TCEQ Region 3, Abilene
The Honorable Lanham Lyne, Mayor, City of Wichita Falls,
Attn: Mr. Mark Southard, Water Purification, P. O. Box 1431,
Wichita Falls, TX 76307-1431

CT STUDY

FOR PUBLIC WATER SYSTEMS THAT ARE USING SURFACE WATER SOURCES
OR GROUND WATER SOURCES UNDER THE INFLUENCE OF SURFACE WATER (cont.)

Description Worksheet

PUBLIC WATER SYSTEM NAME: City of Wichita Falls PWS ID No.: 2430001

PLANT NAME OR NUMBER: Cypress WTP: RO Membrane Plant

Month: October
Day: 5
Year: 2011

Enter a detailed narrative description of the plant treatment processes and disinfection protocol.

The RO Membrane Plant is a treatment train within the Cypress Water Treatment Plant which is one of two surface water treatment plants supplying the City of Wichita Falls. The Cypress WTP contains three conventional treatment trains that recieve raw water from Lake Kickapoo and/or Lake Arrowhead and one micro-filtration/reverse osmosis treatment train that receives water from Lake Kemp. The four treatment trains combined have a total capacity of 52 MGD of treated water.

The RO Membrane Plant receives raw water through an approximately 65,000 ft. long 42 in. pipeline from the Lake Kemp Headquarters Road Pump Station (HRPS). The Lake Kemp HRPS pumps water from a 12 Mgal. reservoir which is fed by the Lake Kemp watershed through Lake Diversion and the Southside Canal system. Once the raw water is delivered to the plant, treatment is completed using clarification, micro-filtration, and reverse osmosis. The finished water is moved to clearwell/transfer well of either the '10 Plant or the '61 Plant and then transferred to ground storage prior to being pumped into distribution.

Disinfection of the water through the RO Membrane Plant is accomplished using a combination of chlorine dioxide and chloramines. Chlorine dioxide is injected into the 42 in. raw water line at the Lake Kemp HRPS and sampled for residual at three locations along the pipeline with distances of 85 ft., 2,310 ft., and 65,000 ft. from the injection location. These three sampling locations define the end of the first three disinfection zones with their corresponding lengths of 42 in. pipe as follows: D1 - 85 ft., D2 – 2225 ft., and D3 62,690 ft. Chloramines are introduced at the clearwell/transfer well of either the '10 Plant or the '61 Plant while being mixed with the respective plant's finished water. Before the water is transferred to the ground storage system a sample is taken at the transfer pump discharge header for the fourth disinfection zone (D4 a or b). The ground storage system consists of three tanks: 10 Mgal., 5 Mgal., & 3 Mgal. with an approximate proportion of flow 70%, 13%, & 17%, respectively. After the ground storage system, the water is sampled a last time for the fifth disinfection zone (D5 a, b, or c) at the High Service Pump Station discharge header just prior to entering the distribution system.

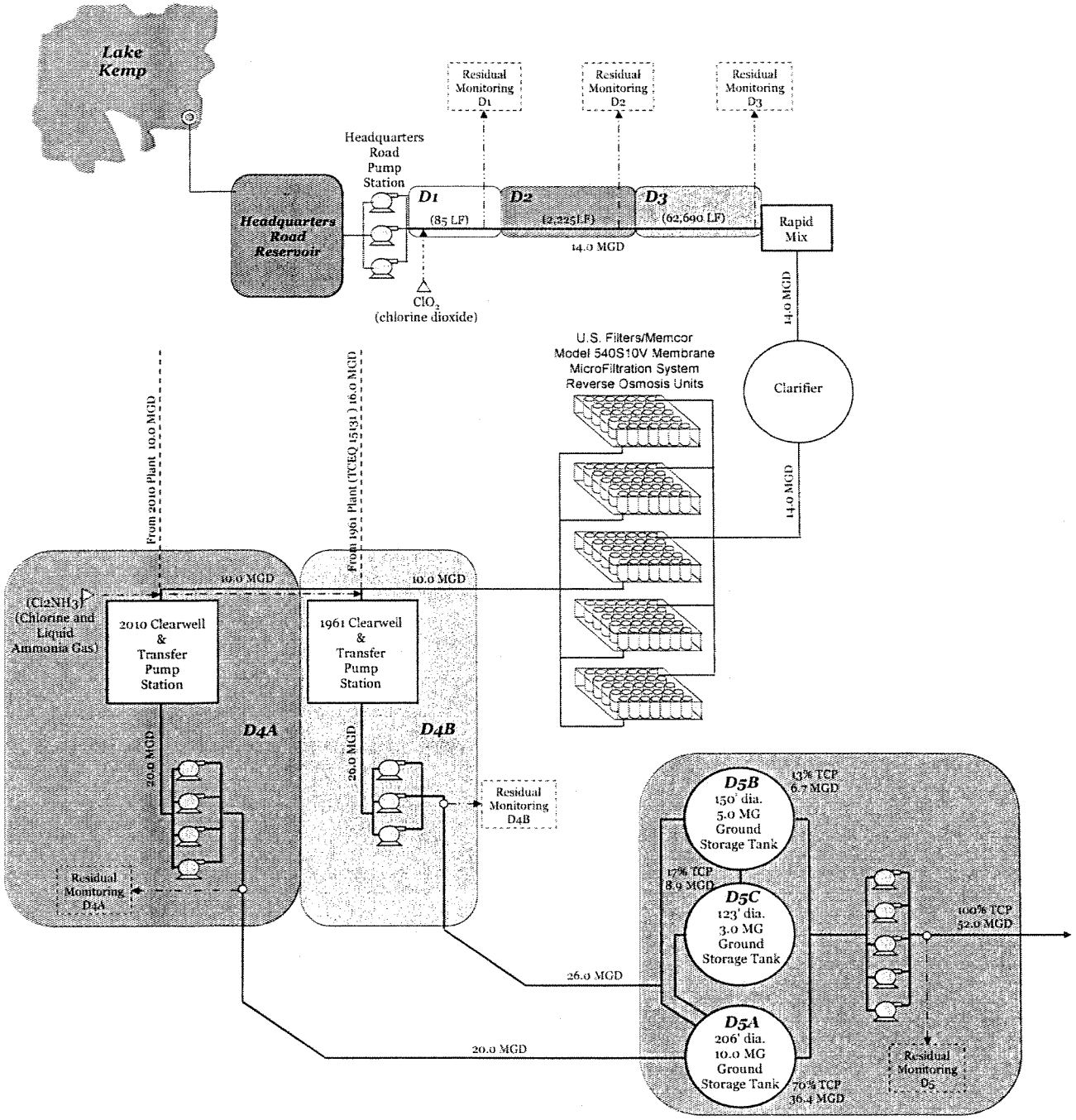
Detailed narrative description of the plant treatment processes and disinfection protocol (cont)

CT STUDY

FOR PUBLIC WATER SYSTEMS THAT ARE USING SURFACE WATER SOURCES
OR GROUND WATER SOURCES UNDER THE INFLUENCE OF SURFACE WATER (cont.)
Schematic Worksheet

PUBLIC WATER SYSTEM NAME:	City of Wichita Falls	PLANT NAME OR NUMBER:	Cypress WTP: RO Membrane Plant
PWS ID No.:	2430001	Date:	October 5, 2011

Use this worksheet to create your plant schematic with the Microsoft Drawing Tools.
If you are not familiar with the drawing tools, you may create your schematic using any other suitable medium.
Please refer to Section 3.3 of the Guidance Manual for instructions and guidance.



CT STUDY

FOR PUBLIC WATER SYSTEMS THAT ARE USING SURFACE WATER SOURCES
OR GROUND WATER SOURCES UNDER THE INFLUENCE OF SURFACE WATER (cont.)

T10 Details Worksheet

PUBLIC WATER SYSTEM NAME: City of Wichita Falls PWS ID No.: 2430001

PLANT NAME OR NUMBER: Cypress WTP: RO Membrane Plant Date: October 5, 2011

Treatment Plant Capacity 14.000 mgd
9,722 gpm

Disinfection Zone: D1 Disinfectant: Chlorine Dioxide

Unit - 1 Type: Piping Shape: Pipe

Further Description: 42-inch Raw Water Pipe

Characteristic			Comments
Number of Units	1		First Sampling Location
Diameter	42	in	As per CT Submittal dated April 4, 2011
Length	85	ft	As per CT Submittal dated April 4, 2011
Volume (each)	6,118	gal	
Flow Rate (each)	9,722	gpm	Treatment Plant Capacity
Detention Time	0.6	min	
Baffling Factor	1.0		Typical Baffling Factor for Pipe
			Baffling Characteristics: Perfect
			Approved Baffling Factor:
T_{10}	**0.6**	**min**	

D1 FLOW RATE	**14.000**	**mgd**
T10 SUM FOR D1	**0.6**	**min**

CT STUDY

FOR PUBLIC WATER SYSTEMS THAT ARE USING SURFACE WATER SOURCES
OR GROUND WATER SOURCES UNDER THE INFLUENCE OF SURFACE WATER (cont.)

T10 Details Worksheet

Disinfection Zone: D2 **Disinfectant:** Chlorine Dioxide

Unit - 1 Type: Piping Shape: Pipe

Further Description: 42-inch Raw Water Pipe

Characteristic			Comments
Number of Units	1		Second Sampling Location
Diameter	42	in	As per CT Submittal dated April 4, 2011
Length	2225	ft	As per CT Submittal dated April 4, 2011
Volume (each)	160,157	gal	
Flow Rate (each)	9,722	gpm	Treatment Plant Capacity
Detention Time	16.5	min	
Baffling Factor	1.0		Typical Baffling Factor for Pipe
			Baffling Characteristics: Perfect
			Approved Baffling Factor:
T_{10}	**16.5**	**min**	

D2 FLOW RATE	**14.000**	**mgd**
T10 SUM FOR D2	**16.5**	**min**

Disinfection Zone: D3 **Disinfectant:** Chlorine Dioxide

Unit - 1 Type: Piping Shape: Pipe

Further Description: 42-inch Raw Water Pipe

Characteristic			Comments
Number of Units	1		Third Sampling Location
Diameter	42	in	As per CT Submittal dated April 4, 2011
Length	62690	ft	As per CT Submittal dated April 4, 2011
Volume (each)	4,512,455	gal	
Flow Rate (each)	9,722	gpm	Treatment Plant Capacity
Detention Time	464.1	min	
Baffling Factor	1.0		Typical Baffling Factor for Pipe
			Baffling Characteristics: Perfect
			Approved Baffling Factor:
T_{10}	**464.1**	**min**	

D3 FLOW RATE	**14.000**	**mgd**
T10 SUM FOR D3	**464.1**	**min**

CT STUDY

FOR PUBLIC WATER SYSTEMS THAT ARE USING SURFACE WATER SOURCES
OR GROUND WATER SOURCES UNDER THE INFLUENCE OF SURFACE WATER (cont.)

T10 Details Worksheet

Disinfection Zone: D4A Disinfectant: Chloramines

Unit - 1 Type: Clearwell Shape: Rectangular

Further Description: 2010 Clearwell/Transfer Pump Station

Characteristic			Comments
Number of Units	1		
Length	98.4	ft	As per CT Submittal dated April 4, 2011
Width	26	ft	As per CT Submittal dated April 4, 2011
Side Water Depth	11.3	ft	As per CT Submittal dated April 4, 2011
Maximum Volume (each)	216,290	gal	
Minimum Operating Level	5.7	ft	
Worst Case Volume (each)	109,102	gal	
Percent of Maximum Volume	50	%	50% of total volume
Worst Case Volume (each)	109,102	gal	
Flow Rate (each)	13,888	gpm	Treatment Plant Capacity for City of Wichita Falls '10 Plant - 10 MGD (TCEQ 15134) combined with Treatment Plant Capacity from RO Membrane Plant - 10 MGD (TCEQ 21567) for a total capacity of 20 MGD
Detention Time	7.9	min	
Baffling Factor	0.5		Typical Baffling Factor for Basins with two internal baffles length to width 30:1
			Baffling Characteristics: Average
			Approved Baffling Factor:
T_{10}	**3.9**	**min**	

D4A FLOW RATE	**19.999**	**mgd**
T10 SUM FOR D4A	**3.9**	**min**

CT STUDY

FOR PUBLIC WATER SYSTEMS THAT ARE USING SURFACE WATER SOURCES
OR GROUND WATER SOURCES UNDER THE INFLUENCE OF SURFACE WATER (cont.)

T10 Details Worksheet

Disinfection Zone: D4B **Disinfectant:** Chloramines

Unit - 1 Type: Clearwell Shape: Other

Further Description: 1961 Clearwell/Transfer Pump Station

Characteristic			Comments
Number of Units	1		
Maximum Volume (each)	120,000	gal	As per CT Submittal dated April 4, 2011
Worst Case Volume (each)	60,000	gal	As per CT Submittal dated April 4, 2011
Percent of Maximum Volume	50	%	
Worst Case Volume (each)	60,000	gal	
Flow Rate (each)	18,056	gpm	Treatment Plant Capacity for City of Wichita Falls '61 Plant - 16 MGD (TCEQ 15131) combined with Treatment Plant Capacity from RO Membrane Plant - 10 MGD (TCEQ 21567) for a total capacity of 26 MGD
Detention Time	3.3	min	
Baffling Factor	0.6		As per Approved TCEQ Tracer study dated July 13, 1992
			Baffling Characteristics: Tracer Study
			Approved Baffling Factor: 0.55
T_{10}	**1.8**	**min**	

D4B FLOW RATE	**26.001**	**mgd**
T10 SUM FOR D4B	**1.8**	**min**

CT STUDY

FOR PUBLIC WATER SYSTEMS THAT ARE USING SURFACE WATER SOURCES
OR GROUND WATER SOURCES UNDER THE INFLUENCE OF SURFACE WATER (cont.)

T10 Details Worksheet

Disinfection Zone: D5A **Disinfectant:** Chloramines

Unit - 1 Type: Clearwell Shape: Circular

Further Description: 10 MG Ground Storage Tank

Characteristic			Comments
Number of Units	1		
Diameter	206	ft	As per CT Submittal dated April 4, 2011
Side Water Depth	40	ft	As per CT Submittal dated April 4, 2011
Center Water Depth	40	ft	As per CT Submittal dated April 4, 2011
Maximum Volume (each)	9,974,083	gal	
Minimum Operating Level	20	ft	assumes "worse case" operating level
Worst Case Volume (each)	4,987,042	gal	
Percent of Maximum Volume	50	%	50% of total volume
Worst Case Volume (each)	4,987,042	gal	
Flow Rate (each)	25,278	gpm	Approximately 70% of the City of Wichita Falls, Cypress SWTP (36.4 MGD)
Detention Time	197.3	min	
Baffling Factor	0.3		Typical Baffling Factor for "unbaffled" Basins
			Baffling Characteristics: Poor
			Approved Baffling Factor:
T_{10}	**59.2**	**min**	

D5A FLOW RATE	**36.400**	**mgd**
T10 SUM FOR D5A	**59.2**	**min**

CT STUDY

FOR PUBLIC WATER SYSTEMS THAT ARE USING SURFACE WATER SOURCES
OR GROUND WATER SOURCES UNDER THE INFLUENCE OF SURFACE WATER (cont.)

T10 Details Worksheet

Disinfection Zone: D5B **Disinfectant:** Chloramines

Unit - 1 Type: Clearwell Shape: Circular

Further Description: 5 MG Ground Storage Tank

Characteristic			Comments
Number of Units	1		
Diameter	150	ft	As per CT Submittal dated April 4, 2011
Side Water Depth	37.6	ft	As per CT Submittal dated April 4, 2011
Center Water Depth	37.6	ft	As per CT Submittal dated April 4, 2011
Maximum Volume (each)	4,971,059	gal	
Minimum Operating Level	18.8	ft	assumes "worse case" operating level
Worst Case Volume (each)	2,485,530	gal	
Percent of Maximum Volume	50	%	50% of total volume
Worst Case Volume (each)	2,485,530	gal	
Flow Rate (each)	4,694	gpm	Approximately 13% of the City of Wichita Falls, Cypress SWTP (6.7 MGD)
Detention Time	529.5	min	
Baffling Factor	0.1		Typical Baffling Factor for "unbaffled" Basins
			Baffling Characteristics: Unbaffled
			Approved Baffling Factor:
T_{10}	**53.0**	**min**	

D5B FLOW RATE	**6.759**	**mgd**
T10 SUM FOR D5B	**53.0**	**min**

CT STUDY

FOR PUBLIC WATER SYSTEMS THAT ARE USING SURFACE WATER SOURCES
OR GROUND WATER SOURCES UNDER THE INFLUENCE OF SURFACE WATER (cont.)

T10 Details Worksheet

Disinfection Zone: D5C **Disinfectant:** Chloramines

Unit - 1 Type: Clearwell Shape: Circular

Further Description: 3 MG Ground Storage Tank

Characteristic			Comments
Number of Units	1		
Diameter	123	ft	As per CT Submittal dated April 4, 2011
Side Water Depth	33.6	ft	As per CT Submittal dated April 4, 2011
Center Water Depth	33.6	ft	As per CT Submittal dated April 4, 2011
Maximum Volume (each)	2,986,951	gal	
Minimum Operating Level	16.8	ft	assumes "worse case" operating level
Worst Case Volume (each)	1,493,475	gal	
Percent of Maximum Volume	50	%	50% of total volume
Worst Case Volume (each)	1,493,475	gal	
Flow Rate (each)	6,139	gpm	Approximately 17% of the City of Wichita Falls, Cypress SWTP (8.9 MGD)
Detention Time	243.3	min	
Baffling Factor	0.1		Typical Baffling Factor for "unbaffled" Basins
			Baffling Characteristics: Unbaffled
			Approved Baffling Factor:
T_{10}	**24.3**	**min**	
D5C FLOW RATE	**8.840**	**mgd**	
T10 SUM FOR D5C	**24.3**	**min**	

Disinfection Zone: D6 **Disinfectant:**

Disinfection Zone: D7 **Disinfectant:**

CT STUDY

FOR PUBLIC WATER SYSTEMS THAT ARE USING SURFACE WATER SOURCES
OR GROUND WATER SOURCES UNDER THE INFLUENCE OF SURFACE WATER (cont.)

Summary Worksheet

PUBLIC WATER SYSTEM NAME: City of Wichita Falls PWS ID No.: 2430001

PLANT NAME OR NUMBER: Cypress WTP: RO Membrane Plant Date: October 5, 2011

Disinfection Zone	Treatment Unit	Volume* (each) (gal)	Flow Rate* (each) (MGD)	Baffling Factor*	T_{10}* (min)	
					Unit	Zone
D1	42-inch Raw Water Pipe (1)	6,118	14.000	1	0.629	0.63
D2	42-inch Raw Water Pipe (1)	160,157	14.000	1	16.474	16.47
D3	42-inch Raw Water Pipe (1)	4,512,455	14.000	1	464.149	464.15
D4A	2010 Clearwell/Transfer Pump Station (1)	109,102	19.999	0.5	3.928	3.93
D4B	1961 Clearwell/Transfer Pump Station (1)	60,000	26.001	0.55	1.828	1.83
D5A	10 MG Ground Storage Tank (1)	4,987,042	36.400	0.3	59.186	59.19
D5B	5 MG Ground Storage Tank (1)	2,485,530	6.759	0.1	52.951	52.95
D5C	3 MG Ground Storage Tank (1)	1,493,475	8.840	0.1	24.328	24.33

* These values are calculated on the T10 Details Sheet

CT STUDY

FOR PUBLIC WATER SYSTEMS THAT ARE USING SURFACE WATER SOURCES
OR GROUND WATER SOURCES UNDER THE INFLUENCE OF SURFACE WATER (cont.)
CT Calculator Worksheet

PUBLIC WATER SYSTEM NAME: City of Wichita Falls

PLANT NAME OR NUMBER: Cypress WTP: RO Membrane Plant

PWS ID No.: 2430001

Date: October 5, 2011

DISINFECTION PROCESS PARAMETERS

APPROVED CT STUDY PARAMETERS						PERFORMANCE STANDARDS	
Parameters	Disinfection Zones					Log Inactivations	
	D1	D2	D3	D4A	D4B	Giardia lamblia Cysts	Viruses
Flow Rate (MGD)	14.000	14.000	14.000	19.999	26.001	0.5	2.0
T_{10} (minutes)	0.6	16.5	464.1	3.9	1.8		

DISINFECTION PROCESS DATA

INDIVIDUAL DISINFECTION ZONES										PLANT TOTAL		
Disinfectant	C (mg/L)	Flow (MGD)	Temp (°C)	pH	CT_{CALC}	Giardia CT_{REQD}	Virus CT_{REQD}	Giardia Log	Virus Log	Giardia Log	Virus Log	Inact. Ratio
CLO2 *D1*	0.1	14.000	5.0	8.5	0.1	#NAME?	#NAME?	#NAME?	#NAME?			
CLO2 *D2*	0.1	14.000	5.0	8.5	1.6	#NAME?	#NAME?	#NAME?	#NAME?			
CLO2 *D3*	0.1	14.000	5.0	8.5	46.4	#NAME?	#NAME?	#NAME?	#NAME?			
CLA *D4A*	0.3	19.999	5.0	8.5	1.2	#NAME?	#NAME?	#NAME?	#NAME?			
CLA *D4B*	0.3	26.001	5.0	8.5	0.5	#NAME?	#NAME?	#NAME?	#NAME?			

SUBMITTED BY: _____ Certificate No. and Grade: _____ Date: _____

DISINFECTION PROCESS PARAMETERS

APPROVED CT STUDY PARAMETERS						PERFORMANCE STANDARDS	
Parameters	Disinfection Zones					Log Inactivations	
	D5A	D5B	D5C	D6	D7	Giardia lamblia Cysts	Viruses
Flow Rate (MGD)	36.400	6.759	8.840			0.5	2.0
T_{10} (minutes)	59.2	53.0	24.3				

DISINFECTION PROCESS DATA

INDIVIDUAL DISINFECTION ZONES										PLANT TOTAL		
Disinfectant	C (mg/L)	Flow (MGD)	Temp (°C)	pH	CT_{CALC}	Giardia CT_{REQD}	Virus CT_{REQD}	Giardia Log	Virus Log	Giardia Log	Virus Log	Inact. Ratio
CLA *D5A*	0.3	36.400	5.0	8.5	17.8	#NAME?	#NAME?	#NAME?	#NAME?			
CLA *D5B*	0.3	6.759	5.0	8.5	15.9	#NAME?	#NAME?	#NAME?	#NAME?			
CLA *D5C*	0.3	8.840	5.0	8.5	7.3	#NAME?	#NAME?	#NAME?	#NAME?	SEE	PAGE	1
D6												
D7												

SUBMITTED BY: _____ Certificate No. and Grade: _____ Date: _____

Bryan W. Shaw, Ph.D., *Chairman*
Buddy Garcia, *Commissioner*
Carlos Rubinstein, *Commissioner*
Mark R. Vickery, P.G., *Executive Director*

PWS/2430001/CO
CN 600129316
RN 105598759

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

October 3, 2011

Mr. Tyson Traw, P.E.
Biggs & Mathews, Inc. Consulting Engineers
2500 Brook Avenue
Wichita Falls, Texas 76301-6105

Subject: Revised Contact Time Study for
The City of Wichita Falls – PWS ID No. 2430001
Cypress Water Treatment – 2010 Plant
Wichita County, Texas

Dear Mr. Traw:

On April 4, 2011, the Texas Commission on Environmental Quality (TCEQ) received your letter dated April 1, 2011 requesting a revised Contact Time (CT) study for the City of Wichita Falls (CWF) Cypress Water Treatment Plant (CWTP) 2010 Water Treatment Plant (WTP) in order to demonstrate that the WTP can meet applicable disinfection requirements for the modifications to the WTP. The information in this TCEQ letter for CWF CWTP WTP should replace, not supplement, all previous CT studies for this facility.

The CWF CWTP WTP is a 10-million-gallons-per-day (MGD) conventional treatment facility receiving raw water from Lake Kickapoo and Lake Arrowhead to a secondary raw water reservoir located at the WTP. Raw water from the reservoir travels through a 42-inch raw water pipe into a splitter basin where it is divided into the three separate treatment facilities within the CWTP. The WTP consists of a rapid mix basin, a 90-foot diameter (dia.) clarifier, a re-carbonation basin, five multi-media gravity filters, a 0.20-million-gallon (MG) clearwell and pump station, and three ground storage tanks. Upstream of the 0.20-MG clearwell and pump station, finished water from the RO Membrane treatment plant, is combined with filtered water from the WTP increasing the capacity of the WTP to 20 MGD.

The proposed disinfection protocol involves the injection of chlorine dioxide (ClO_2) downstream of the secondary reservoir, and chlorine (Cl_2) and liquid ammonia gas (NH_4) downstream of the splitter basin, and upstream of the 0.20-MG clearwell and transfer pump station. Chlorine dioxide residual is monitored at three locations along the 42-inch raw water pipe at 400, 900 and 5,600 linear feet downstream of the reservoir pump station, prior to entering the splitter basin. Chloramine residual is monitored downstream of the five multi-media gravity filters, downstream of the 0.10-MG clearwell and transfer pump station, and downstream of the three ground storage tanks, prior to entering the distribution system.

A disinfection zone is a segment of the treatment process which begins at a disinfectant application point and ends at the subsequent disinfectant application or residual sampling point. Each disinfectant application point, regardless of the frequency of use, represents the beginning of a separate disinfection zone. However, a plant may have only one disinfectant point and choose to monitor at more than one point, creating multiple disinfection zones. Based on the information we had at the time of our review, we have identified six disinfection zones at the CWF CWTP WTP. The first disinfection zone, D1, consists of 400 linear feet (LF) of 42-inch raw water pipe. The second disinfection zone, D2, consists of 500 LF of 42-inch raw water pipe. The third disinfection zone, D3, consists of 5,600 LF of 42-inch raw water pipe. The fourth disinfection zone, D4, consists of 220 LF of 36-inch pipe, the rapid mix basin, 90-foot diameter clarifier, re-carbonation basin, and the five multi-media gravity filters. The fifth disinfection zone, D5, consists of the 0.10-MG clearwell and transfer pump station. The sixth disinfection zone, D6, is divided into three treatment units D6A, D6B and D6C for each of the three ground storage tanks. The treatment unit D6A consists of a 206-foot diameter, 10.0-MG ground storage tank. The treatment unit D6B consists of a 150-foot diameter, 5.0-MG ground storage tanks, and the treatment unit D6C consists of a 123-foot diameter, 3.0-MG ground storage tank.

CT calculations are used to evaluate the disinfection process. Since T_{10} values are required to calculate the CT for the treatment process, Table 1 was developed for the CWF CWTP WTP. The T_{10} values are based on the information provided in your CT template dated April 4, 2011, TCEQ Comprehensive Compliance Investigation (CCI) conducted September 3, 2008, and the most recent TCEQ-approved CT Study dated January 31, 2007.

TABLE 1: T_{10} TABLE FOR CWF CWTP WTP

DISINFECTION ZONE	TREATMENT UNIT	VOLUME (GAL)	FLOW RATE (MGD)	BAFFLING FACTOR	T_{10} (MIN)	
					Unit	Sum
D1	42-inch Raw Water Pipe	28,800[1]	42.00[14]	1.0[21]	0.987	0.99
D2	42-inch Raw Water Pipe	36,000[2]			1.234	1.23
D3	42-inch Raw Water Pipe	403,100[3]			13.82	13.82
D4	36-inch Raw Water Pipe	11,600[4]	10.00[15]	1.0[21]	1.675	70.06
	Rapid Mix Basin	4,850[5]		0.1[22]	0.07	
	30-inch Pipe	3,100[6]		1.0[21]	0.45	
	Clarifier	926,500[7]		0.3[23]	40.028	
	Re-carbonation Basin	183,000[8]		0.5[24]	13.177	
	Multi-media Filters (5)	29,100[9]	2.00[16]	0.7[25]	14.659	
D5	0.10 MG Clearwell	109,100[10]	20.00[17]	0.5[26]	3.928	3.93
D6A	10.0 MG Ground Storage Tank	4,987,000[11]	36.40[18]	0.3[27]	59.186	59.19
D6B	5.0 MG Ground Storage Tank	2,485,500[12]	6.76[19]	0.1[28]	52.951	52.95
D6C	3.0 MG Ground Storage Tank	1,493,500[13]	8.84[20]		24.328	24.33

Notes:

(1) Based on 400 linear feet (LF) of 42-inch raw water pipe, as per the CT submittal by Biggs & Mathews, Inc. Consulting Engineers (BMI) dated April 4, 2011.

(2) Based on 500 LF of 42-inch raw water pipe, as per the CT submittal by BMI dated April 4, 2011.

(3) Based on 5,600 LF of 42-inch raw water pipe, as per the CT submittal by BMI dated April 4, 2011.

(4) Based on 220 LF of 36-inch raw water pipe, as per the CT submittal by BMI dated April 4, 2011.

(5) Based on one rapid mix basin 27-feet long by 6-feet wide with a side water depth of 4-feet, as per the CT submittal by BMI dated April 4, 2011.

(6) Based on 85 LF of 30-inch pipe, as per the CT submittal by BMI dated April 4, 2011.

(7) Based on one clarifier basin having a 90-foot diameter, a side water depth of 18.9-feet and a center water depth of 20.6-feet, as per the CT submittal by BMI dated April 4, 2011.

(8) Based on one re-carbonation basin 45.5-feet long by 32-feet wide with a side water depth of 16.8-feet, as per the CT submittal by BMI dated April 4, 2011.

(9) Based on one filter, 24-feet by 15-feet each, with a media and underdrain depth of 7-feet and a minimum water depth of 6.8-feet over the media as per the approved TCEQ CT study dated January 31, 2007. An average porosity of 50% is assumed for the media.

(10) Based on a "worst case" operating condition. In the absence of site-specific information, a minimum operating level of 50% of the nominal capacity is assumed. As per the CT submittal by BMI dated April 4, 2011, the clearwell is 0.2 MG.

(11) Based on a "worst case" operating condition. In the absence of site-specific information, a minimum operating level of 50% of the nominal capacity is assumed. As per the CT submittal by BMI dated April 4, 2011, the clearwell is 10.0 MG.

(12) Based on a "worst case" operating condition. In the absence of site-specific information, a minimum operating level of 50% of the nominal capacity is assumed. As per the CT submittal by BMI dated April 4, 2011, the clearwell is 5.0 MG.

(13) Based on a "worst case" operating condition. In the absence of site-specific information, a minimum operating level of 50% of the nominal capacity is assumed. As per the CT submittal by BMI dated April 4, 2011, the clearwell is 3.0 MG.

(14) Based on the design capacity of the combined SWTP (42 MGD), this flow volume represents all flow from the secondary reservoir to the splitter basin, where flow is regulated to all three separate treatment facilities. As per the CT submittal by BMI dated April 4, 2011.

(15) Based on the design capacity of the City of Wichita Falls '10 Plant, TCEQ ID 15134 (10 MGD), as per the CT submittal by BMI dated April 4, 2011.

(16) Based on the design capacity of the City of Wichita Falls '10 Plant (10 MGD), divided equivalently between the five filtration units (2.0 MGD per filter), as per the CT submittal by BMI dated April 4, 2011.

(17) Based on the design capacity for the City of Wichita Falls '10 WTP (10 MGD) combined with the design capacity for the City of Wichita Falls RO Membrane WTP (10 MGD), for a total combined capacity of (20 MGD), as per the CT submittal by BMI dated April 4, 2011.

(18) Based on 70% of the overall design capacity of the City of Wichita Falls Cypress Surface Water Treatment Plant (52 MGD) divided between the three ground storage tanks. 70% of the TPC for the 10.0 MG GST is equal to 36.4 MGD. As per the CT submittal by BMI dated April 4, 2011.

(19) Based on 13% of the overall design capacity of the City of Wichita Falls Cypress Surface Water Treatment Plant (52 MGD) divided between the three ground storage tanks. 13% of the TPC for the 5.0 MG GST is equal to 6.76 MGD. As per the CT submittal by BMI dated April 4, 2011.

(20) Based on 17% of the overall design capacity of the City of Wichita Falls Cypress Surface Water Treatment Plant (52 MGD) divided between the three ground storage tanks. 17% of the TPC for the 3.0 MG GST is equal to 8.84 MGD. As per the CT submittal by BMI dated April 4, 2011.

(21) Based on the assumption of "perfect" baffling characteristics for pipe.
(22) Based on the assumption of "unbaffled" baffling characteristics.
(23) Based on the assumption of "poor" baffling characteristics for clarifiers.
(24) Based on the assumption of "average" baffling characteristics. The re-carbonation basin has four internal baffles and a length to width of (40:1) as per the CT submittal by BMI dated April 4, 2011.
(25) Based on the assumption of "superior" baffling characteristics for filters.
(26) Based on the assumption of "average" baffling characteristics for basins with two internal baffles and a length to width of 30:1. As per the CT submittal by BMI dated April 4, 2011.
(27) Based on the assumption of "poor" baffling characteristics for basins having two inlets, one outlet and three interior baffle walls.
(28) Based on the assumption of "unbaffled" baffling characteristics

Below is a Disinfection Process Parameters Table to help operators at the plant complete their Surface Water Monthly Operating Report (SWMOR). In Table 2, we have characterized the T_{10} available in each of the disinfection zones based on the flow rate through the unit(s) that contributes most to the disinfection process within that zone. We have also provided the operators with the disinfection requirements that they must meet on a continual basis.

TABLE 2: DISINFECTION PROCESS PARAMETERS

APPROVED CT STUDY PARAMETERS						PERFORMANCE STANDARDS	
Parameters	Disinfection Zones					Log Inactivations	
	D1	D2	D3	D4	D5	Giardia	Viruses
Flow Rate (MGD)	42.00	42.00	42.00	10.00	20.00	0.5	2.0
T_{10} (minutes)	1.0	1.2	13.8	70.1	3.9		

APPROVED CT STUDY PARAMETERS						PERFORMANCE STANDARDS	
Parameters	Disinfection Zones					Log Inactivations	
	D6A	D6B	D6C	D7	D8	Giardia	Viruses
Flow Rate (MGD)	36.40	6.76	8.84	na	na	0.5	2.0
T_{10} (minutes)	59.2	53.0	24.3	na	na		

If your monitoring plan has changed as a result of this CT study, please submit an updated monitoring plan at the address below.

Monitoring Plan Coordinator (MC – 155)
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, TX 78711

Further information can be found in Regulatory Guidance (RG) 384 "How to Develop a Monitoring Plan for a Public Water System" or at TCEQ's website:

http://www.tceq.state.tx.us/permitting/water_supply/pdw/monitoring_plans/monitoring_plans.html

If you have any questions concerning our evaluation or if we may be of further assistance, please contact Ms. Rian McMorris at (512) 239-4487, by e-mail at rian.mcmorris@tceq.texas.gov or correspondence at:

Technical Review and Oversight Team (MC-159)
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, TX 78711-3087

Sincerely,

Ada Lichaa

Ada Lichaa, P.G., Manager
Plan & Groundwater Review Section
Water Supply Division
Texas Commission on Environmental Quality

AL/RM/av

Enclosure: CT Worksheet

cc: w/ enclosure: TCEQ Tracer Study File
TCEQ PWS File
TCEQ Region 3, Abilene
The Honorable Lanham Lyne, Mayor, City of Wichita Falls,
Attn: Mr. Mark Southard, Water Purification, City of Wichita Falls,
P. O. Box 1431, Wichita Falls, TX 76307-1431

CT STUDY

FOR PUBLIC WATER SYSTEMS THAT ARE USING SURFACE WATER SOURCES
OR GROUND WATER SOURCES UNDER THE INFLUENCE OF SURFACE WATER (cont.)

Description Worksheet

PUBLIC WATER SYSTEM NAME: City of Wichita Falls PWS ID No.: 2430001

PLANT NAME OR NUMBER: Cypress Water Treatment Plant: '10 Plant

Month: May
Day: 5
Year: 2011

Enter a detailed narrative description of the plant treatment processes and disinfection protocol.

The CWF CWTP WTP is a 10-million-gallons-per-day (MGD) conventional treatment facility receiving raw water from Lake Kickapoo and Lake Arrowhead to a secondary raw water reservoir located at the WTP. Raw water from the reservoir travels through a 42-inch raw water pipe into a splitter basin where it is divided into the three separate treatment facilities within the CWTP. The WTP consists of a rapid mix basin, a 90-foot diameter (dia.) clarifier, a re-carbonation basin, five multi-media gravity filters, a 0.20-million-gallon (MG) clearwell and pump station, and three ground storage tanks. Upstream of the 0.20-MG clearwell and pump station, finished water from the RO Membrane treatment plant, is combined with filtered water from the WTP increasing the capacity of the WTP to 20 MGD.

The proposed disinfection protocol involves the injection of chlorine dioxide (ClO2) downstream of the secondary reservoir, and chlorine (Cl2) and liquid ammonia gas (NH4) downstream of the splitter basin, and upstream of the 0.20-MG clearwell and transfer pump station. Chlorine dioxide residual is monitored at three locations along the 42-inch raw water pipe at 400, 900 and 5,600 linear feet downstream of the reservoir pump station, prior to entering the splitter basin. Chloramine residual is monitored downstream of the five multi-media gravity filters, downstream of the 0.10-MG clearwell and transfer pump station, and downstream of the three ground storage tanks, prior to entering the distribution system.

Detailed narrative description of the plant treatment processes and disinfection protocol (cont)

CT STUDY

FOR PUBLIC WATER SYSTEMS THAT ARE USING SURFACE WATER SOURCES
OR GROUND WATER SOURCES UNDER THE INFLUENCE OF SURFACE WATER (cont.)

Schematic Worksheet

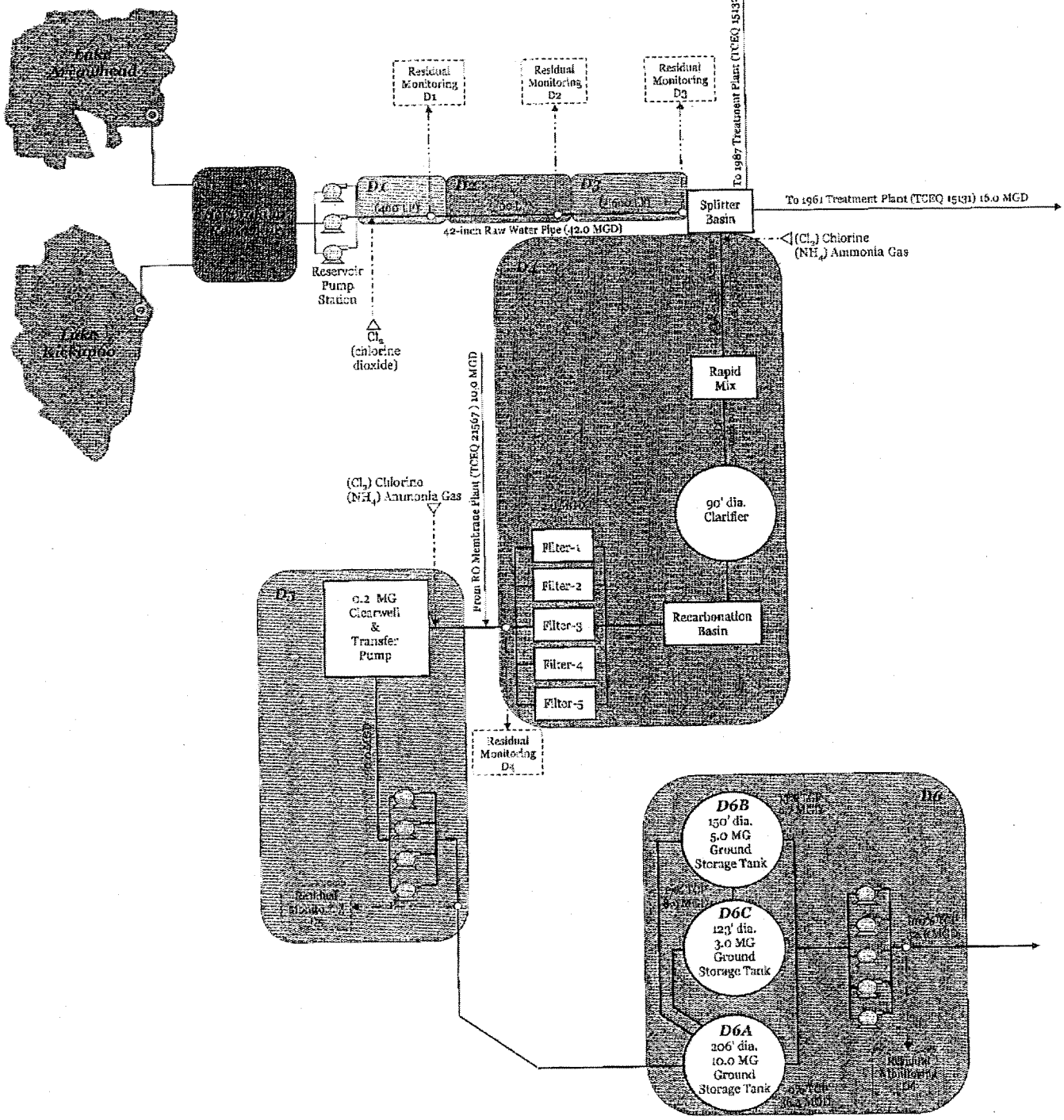
PUBLIC WATER SYSTEM NAME: City of Wichita Falls

PLANT NAME OR NUMBER: Cypress Water Treatment Plant: "10 Plant

PWS ID No.: 2430001

Date: May 5, 2011

Use this worksheet to create your plant schematic with the Microsoft Drawing Tools.
If you are not familiar with the drawing tools, you may create your schematic using any other suitable medium.
Please refer to Section 3.3 of the Guidance Manual for instructions and guidance.



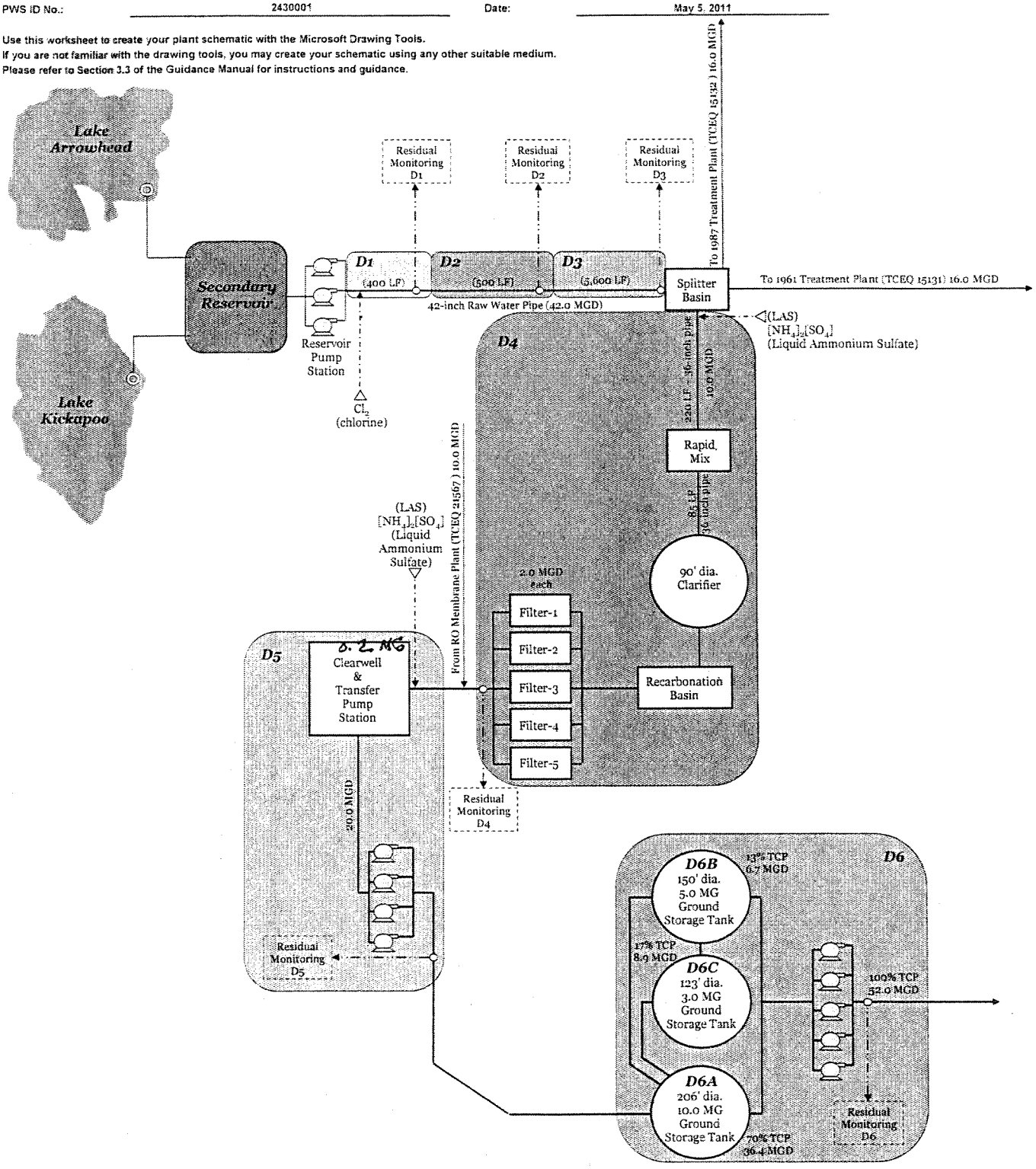
CT STUDY

FOR PUBLIC WATER SYSTEMS THAT ARE USING SURFACE WATER SOURCES
OR GROUND WATER SOURCES UNDER THE INFLUENCE OF SURFACE WATER (cont.)

Schematic Worksheet

PUBLIC WATER SYSTEM NAME:	City of Wichita Falls	PLANT NAME OR NUMBER:	Cypress Water Treatment Plant: '10 Plant
PWS ID No.:	2430001	Date:	May 5, 2011

Use this worksheet to create your plant schematic with the Microsoft Drawing Tools.
If you are not familiar with the drawing tools, you may create your schematic using any other suitable medium.
Please refer to Section 3.3 of the Guidance Manual for instructions and guidance.



CT STUDY

FOR PUBLIC WATER SYSTEMS THAT ARE USING SURFACE WATER SOURCES
OR GROUND WATER SOURCES UNDER THE INFLUENCE OF SURFACE WATER (cont.)

T10 Details Worksheet

PUBLIC WATER SYSTEM NAME: City of Wichita Falls PWS ID No.: 2430001

PLANT NAME OR NUMBER: Cypress Water Treatment Plant: '10 Plant Date: May 5, 2011

Treatment Plant Capacity 10.000 mgd
6,944 gpm

Disinfection Zone: D1 **Disinfectant:** Chlorine Dioxide

Unit - 1 Type: Piping Shape: Pipe

Further Description: 42-inch Raw Water Pipe

Characteristic			Comments
Number of Units	1		First Sampling Location
Diameter	42	in	As per CT Submittal dated April 4, 2011
Length	400	ft	As per CT Submittal dated April 4, 2011
Volume (each)	28,792	gal	
Flow Rate (each)	29,167	gpm	Combined SWTP Capacity. Flow represents all flow from Secondary Reservoir to Splitter Basin where flow is regulated to all 3 treatment plants
Detention Time	1.0	min	
Baffling Factor	1.0		Typical Baffling Factor for Pipe
			Baffling Characteristics: Perfect
			Approved Baffling Factor:
T_{10}	**1.0**	**min**	

D1 FLOW RATE	**42.000**	**mgd**
T10 SUM FOR D1	**1.0**	**min**

CT STUDY

FOR PUBLIC WATER SYSTEMS THAT ARE USING SURFACE WATER SOURCES
OR GROUND WATER SOURCES UNDER THE INFLUENCE OF SURFACE WATER (cont.)

T10 Details Worksheet

Disinfection Zone: D2 **Disinfectant:** Chlorine Dioxide

Unit - 1 Type: Piping Shape: Pipe

Further Description: 42-inch Raw Water Pipe

Characteristic			Comments
Number of Units	1		Second Sampling Location
Diameter	42	in	As per CT Submittal dated April 4, 2011
Length	500	ft	As per CT Submittal dated April 4, 2011
Volume (each)	35,990	gal	
Flow Rate (each)	29,167	gpm	Combined SWTP Capacity. Flow represents all flow from Secondary Reservoir to Splitter Basin where flow is regulated to all 3 treatment plants
Detention Time	1.2	min	
Baffling Factor	1.0		Typical Baffling Factor for Pipe
			Baffling Characteristics: Perfect
			Approved Baffling Factor:
T_{10}	**1.2**	**min**	
D2 FLOW RATE	**42.000**	**mgd**	
T10 SUM FOR D2	**1.2**	**min**	

Disinfection Zone: D3 **Disinfectant:** Chlorine Dioxide

Unit - 1 Type: Piping Shape: Pipe

Further Description: 42-inch Raw Water Pipe

Characteristic			Comments
Number of Units	1		Third Sampling Location
Diameter	42	in	As per CT Submittal dated April 4, 2011
Length	5600	ft	As per CT Submittal dated April 4, 2011
Volume (each)	403,091	gal	
Flow Rate (each)	29,167	gpm	Combined SWTP Capacity. Flow represents all flow from Secondary Reservoir to Splitter Basin where flow is regulated to all 3 treatment plants
Detention Time	13.8	min	
Baffling Factor	1.0		Typical Baffling Factor for Pipe
			Baffling Characteristics: Perfect
			Approved Baffling Factor:
T_{10}	**13.8**	**min**	

CT STUDY

FOR PUBLIC WATER SYSTEMS THAT ARE USING SURFACE WATER SOURCES
OR GROUND WATER SOURCES UNDER THE INFLUENCE OF SURFACE WATER (cont.)

T10 Details Worksheet

D3 FLOW RATE	42.000	mgd

T10 SUM FOR D3	13.8	min

CT STUDY

FOR PUBLIC WATER SYSTEMS THAT ARE USING SURFACE WATER SOURCES
OR GROUND WATER SOURCES UNDER THE INFLUENCE OF SURFACE WATER (cont.)

T10 Details Worksheet

Disinfection Zone: D4 **Disinfectant:** **Chloramines**

Unit - 1 Type: **Piping** Shape: **Pipe**

Further Description: 36-inch Raw Water Pipe

Characteristic			Comments
Number of Units	1		Splitter box to Rapid Mix
Diameter	36	in	As per CT Submittal dated April 4, 2011
Length	220	ft	As per CT Submittal dated April 4, 2011
Volume (each)	11,634	gal	
Flow Rate (each)	6,944	gpm	Treatment Plant Capacity for City of Wichita Falls '10 Plant (TCEQ 15134)
Detention Time	1.7	min	
Baffling Factor	1.0		Typical Baffling Factor for Pipe
			Baffling Characteristics: Perfect
			Approved Baffling Factor:
T_{10}	**1.7**	**min**	

Unit - 2 Type: **Rapid Mix** Shape: **Rectangular**

Further Description: Rapid Mix Basin

Characteristic			Comments
Number of Units	1		
Length	27	ft	As per CT Submittal dated April 4, 2011
Width	6	ft	As per CT Submittal dated April 4, 2011
Side Water Depth	4	ft	As per CT Submittal dated April 4, 2011
Volume (each)	4,848	gal	
Flow Rate (each)	6,944	gpm	Treatment Plant Capacity for City of Wichita Falls '10 Plant (TCEQ 15134)
Detention Time	0.7	min	
Baffling Factor	0.1		Typical Baffling Factor for an "unbaffled" Basin
			Baffling Characteristics: Unbaffled
			Approved Baffling Factor:
T_{10}	**0.1**	**min**	

CT STUDY

FOR PUBLIC WATER SYSTEMS THAT ARE USING SURFACE WATER SOURCES
OR GROUND WATER SOURCES UNDER THE INFLUENCE OF SURFACE WATER (cont.)

T10 Details Worksheet

Unit - 3 Type: **Piping** Shape: **Pipe**

Further Description: 30-inch pipe

Characteristic			Comments
Number of Units	1		Rapid Mix to Clarifier
Diameter	30	in	As per CT Submittal dated April 4, 2011
Length	85	ft	As per CT Submittal dated April 4, 2011
Volume (each)	3,122	gal	
Flow Rate (each)	6,944	gpm	Treatment Plant Capacity for City of Wichita Falls '10 Plant (TCEQ 15134)
Detention Time	0.4	min	
Baffling Factor	1.0		Typical Baffling Factor for Pipe
			Baffling Characteristics: Perfect
			Approved Baffling Factor:
T_{10}	**0.4**	**min**	

Unit - 4 Type: **Clarifier** Shape: **Circular**

Further Description: Clarifier

Characteristic			Comments
Number of Units	1		
Diameter	90	ft	As per CT Submittal dated April 4, 2011
Side Water Depth	18.9	ft	As per CT Submittal dated April 4, 2011
Center Water Depth	20.6	ft	As per CT Submittal dated April 4, 2011
Volume (each)	926,521	gal	
Flow Rate (each)	6,944	gpm	Treatment Plant Capacity for City of Wichita Falls '10 Plant (TCEQ 15134)
Detention Time	133.4	min	
Baffling Factor	0.3		Typical Baffling Factor for Clarifiers
			Baffling Characteristics: Poor
			Approved Baffling Factor:
T_{10}	**40.0**	**min**	

CT STUDY

FOR PUBLIC WATER SYSTEMS THAT ARE USING SURFACE WATER SOURCES
OR GROUND WATER SOURCES UNDER THE INFLUENCE OF SURFACE WATER (cont.)

T10 Details Worksheet

Unit - 5 Type: **Other** Shape: **Rectangular**

Further Description: Recarbonation Basin

Characteristic			Comments
Number of Units	1		
Length	45.5	ft	As per CT Submittal dated April 4, 2011
Width	32	ft	As per CT Submittal dated April 4, 2011
Side Water Depth	16.8	ft	As per CT Submittal dated April 4, 2011
Volume (each)	183,003	gal	
Flow Rate (each)	6,944	gpm	Treatment Plant Capacity for City of Wichita Falls '10 Plant (TCEQ 15134)
Detention Time	26.4	min	
Baffling Factor	0.5		Typical Baffling Factor for Basins with 4 internal baffles and length to width (40:1)
			Baffling Characteristics: Average
			Approved Baffling Factor:
T_{10}	**13.2**	**min**	

Unit - 6 Type: **Filter** Shape: **Rectangular**

Further Description: Gravity Filters

Characteristic			Comments
Number of Units	5		
Length	24	ft	As per CT Submittal dated April 4, 2011
Width	15	ft	As per CT Submittal dated April 4, 2011
Media Depth	6	ft	As per CT Submittal dated April 4, 2011
Underdrain Depth	1	ft	As per CT Submittal dated April 4, 2011
Minimum Water Depth Over Media	6.8	ft	As per CT Submittal dated April 4, 2011
Average Porosity	50	%	
Volume (each)	29,088	gal	
Flow Rate (each)	1,389	gpm	Treatment Plant Capacity for City of Wichita Falls '10 Plant (TCEQ 15134) equally divided between the five like filter units
Detention Time	20.9	min	
Baffling Factor	0.7		Typical Baffling Factor for Filters
			Baffling Characteristics: Superior
			Approved Baffling Factor:
T_{10}	**14.7**	**min**	

D4 FLOW RATE	**9.999**	**mgd**
T10 SUM FOR D4	**70.1**	**min**

CT STUDY

FOR PUBLIC WATER SYSTEMS THAT ARE USING SURFACE WATER SOURCES
OR GROUND WATER SOURCES UNDER THE INFLUENCE OF SURFACE WATER (cont.)

T10 Details Worksheet

Disinfection Zone: D5 **Disinfectant:** Chloramines

Unit - 1 Type: Clearwell Shape: Rectangular

Further Description: Clearwell/Transfer Pump Station

Characteristic			Comments
Number of Units	1		
Length	98.4	ft	As per CT Submittal dated April 4, 2011
Width	26	ft	As per CT Submittal dated April 4, 2011
Side Water Depth	11.3	ft	As per CT Submittal dated April 4, 2011
Maximum Volume (each)	216,290	gal	
Minimum Operating Level	5.7	ft	
Worst Case Volume (each)	109,102	gal	
Percent of Maximum Volume	50	%	50% of total volume
Worst Case Volume (each)	109,102	gal	
Flow Rate (each)	13,888	gpm	Treatment Plant Capacity for City of Wichita Falls '10 Plant - 10 MGD (TCEQ 15134) combined with Treatment Plant Capacity from RO Membrane Plant - 10 MGD (TCEQ 21567) for a total capacity of 20 MGD
Detention Time	7.9	min	
Baffling Factor	0.5		Typical Baffling Factor for Basins with two internal baffles length to width 30:1
			Baffling Characteristics: Average
			Approved Baffling Factor:
T_{10}	**3.9**	**min**	

D5 FLOW RATE	**19.999**	**mgd**
T10 SUM FOR D5	**3.9**	**min**

CT STUDY

FOR PUBLIC WATER SYSTEMS THAT ARE USING SURFACE WATER SOURCES
OR GROUND WATER SOURCES UNDER THE INFLUENCE OF SURFACE WATER (cont.)

T10 Details Worksheet

Disinfection Zone: D6A **Disinfectant:** Chloramines

Unit - 1 Type: Clearwell Shape: Circular

Further Description: 10 MG Ground Storage Tank

Characteristic			Comments
Number of Units	1		
Diameter	206	ft	As per CT Submittal dated April 4, 2011
Side Water Depth	40	ft	As per CT Submittal dated April 4, 2011
Center Water Depth	40	ft	As per CT Submittal dated April 4, 2011
Maximum Volume (each)	9,974,083	gal	
Minimum Operating Level	20	ft	assumes "worse case" operating level
Worst Case Volume (each)	4,987,042	gal	
Percent of Maximum Volume	50	%	50% of total volume
Worst Case Volume (each)	4,987,042	gal	
Flow Rate (each)	25,278	gpm	Approximately 70% of the City of Wichita Falls, Cypress SWTP (36.4 MGD)
Detention Time	197.3	min	
Baffling Factor	0.3		Typical Baffling Factor for Basins having 2 inlets, 1 outlet, and 3 interior baffles
			Baffling Characteristics: Poor
			Approved Baffling Factor:
T_{10}	**59.2**	**min**	

D6A FLOW RATE	**36.400**	**mgd**
T10 SUM FOR D6A	**59.2**	**min**

CT STUDY

FOR PUBLIC WATER SYSTEMS THAT ARE USING SURFACE WATER SOURCES
OR GROUND WATER SOURCES UNDER THE INFLUENCE OF SURFACE WATER (cont.)

T10 Details Worksheet

Disinfection Zone: D6B **Disinfectant:** Chloramines

Unit - 1 Type: Clearwell Shape: Circular

Further Description: 5 MG Ground Storage Tank

Characteristic			Comments
Number of Units	1		
Diameter	150	ft	As per CT Submittal dated April 4, 2011
Side Water Depth	37.6	ft	As per CT Submittal dated April 4, 2011
Center Water Depth	37.6	ft	As per CT Submittal dated April 4, 2011
Maximum Volume (each)	4,971,059	gal	
Minimum Operating Level	18.8	ft	assumes "worse case" operating level
Worst Case Volume (each)	2,485,530	gal	
Percent of Maximum Volume	50	%	50% of total volume
Worst Case Volume (each)	2,485,530	gal	
Flow Rate (each)	4,694	gpm	Approximately 13% of the City of Wichita Falls, Cypress SWTP (6.7 MGD)
Detention Time	529.5	min	
Baffling Factor	0.1		Typical Baffling Factor for "unbaffled" Basins
			Baffling Characteristics: Unbaffled
			Approved Baffling Factor:
T_{10}	**53.0**	**min**	

D6B FLOW RATE	**6.759**	**mgd**
T10 SUM FOR D6B	**53.0**	**min**

CT STUDY

FOR PUBLIC WATER SYSTEMS THAT ARE USING SURFACE WATER SOURCES
OR GROUND WATER SOURCES UNDER THE INFLUENCE OF SURFACE WATER (cont.)

T10 Details Worksheet

Disinfection Zone: D6C **Disinfectant:** Chloramines

Unit - 1 Type: Clearwell Shape: Circular

Further Description: 3 MG Ground Storage Tank

Characteristic			Comments
Number of Units	1		
Diameter	123	ft	As per CT Submittal dated April 4, 2011
Side Water Depth	33.6	ft	As per CT Submittal dated April 4, 2011
Center Water Depth	33.6	ft	As per CT Submittal dated April 4, 2011
Maximum Volume (each)	2,986,951	gal	
Minimum Operating Level	16.8	ft	asumes "worse case" operating level
Worst Case Volume (each)	1,493,475	gal	
Percent of Maximum Volume	50	%	50% of total volume
Worst Case Volume (each)	1,493,475	gal	
Flow Rate (each)	6,139	gpm	Approximately 17% of the City of Wichita Falls, Cypress SWTP (8.9 MGD)
Detention Time	243.3	min	
Baffling Factor	0.1		Typical Baffling Factor for "unbaffled" basins
			Baffling Characteristics: Unbaffled
			Approved Baffling Factor:
T_{10}	**24.3**	**min**	

D6C FLOW RATE	**8.840**	**mgd**
T10 SUM FOR D6C	**24.3**	**min**

Disinfection Zone: D7 **Disinfectant:**

Disinfection Zone: D8 **Disinfectant:**

CT STUDY

FOR PUBLIC WATER SYSTEMS THAT ARE USING SURFACE WATER SOURCES
OR GROUND WATER SOURCES UNDER THE INFLUENCE OF SURFACE WATER (cont.)
Summary Worksheet

PUBLIC WATER SYSTEM NAME: City of Wichita Falls PWS ID No.: 2430001

PLANT NAME OR NUMBER: Cypress Water Treatment Plant: '10 Plant Date: May 5, 2011

Disinfection Zone	Treatment Unit	Volume* (each) (gal)	Flow Rate* (each) (MGD)	Baffling Factor*	T_{10}* (min)	
					Unit	Zone
D1	42-inch Raw Water Pipe (1)	28,792	42.000	1	0.987	0.99
D2	42-inch Raw Water Pipe (1)	35,990	42.000	1	1.234	1.23
D3	42-inch Raw Water Pipe (1)	403,091	42.000	1	13.820	13.82
D4	36-inch Raw Water Pipe (1)	11,634	9.999	1	1.675	70.06
	Rapid Mix Basin (1)	4,848	9.999	0.1	0.070	
	30-inch pipe (1)	3,122	9.999	1	0.450	
	Clarifier (1)	926,521	9.999	0.3	40.028	
	Recarbonation Basin (1)	183,003	9.999	0.5	13.177	
	Gravity Filters (5)	29,088	2.000	0.7	14.659	
D5	Clearwell/Transfer Pump Station (1)	109,102	19.999	0.5	3.928	3.93
D6A	10 MG Ground Storage Tank (1)	4,987,042	36.400	0.3	59.186	59.19
D6B	5 MG Ground Storage Tank (1)	2,485,530	6.759	0.1	52.951	52.95
D6C	3 MG Ground Storage Tank (1)	1,493,475	8.840	0.1	24.328	24.33

* These values are calculated on the T10 Details Sheet

CT STUDY

FOR PUBLIC WATER SYSTEMS THAT ARE USING SURFACE WATER SOURCES
OR GROUND WATER SOURCES UNDER THE INFLUENCE OF SURFACE WATER (cont.)
CT Calculator Worksheet

PUBLIC WATER SYSTEM NAME: City of Wichita Falls

PLANT NAME OR NUMBER: Cypress Water Treatment Plant: '10 Plant

PWS ID No.: 2430001

Date: May 5, 2011

DISINFECTION PROCESS PARAMETERS

APPROVED CT STUDY PARAMETERS						PERFORMANCE STANDARDS	
Parameters	Disinfection Zones					Log Inactivations	
	D1	D2	D3	D4	D5	Giardia lamblia Cysts	Viruses
Flow Rate (MGD)	42.000	42.000	42.000	9.999	19.999	0.5	2.0
T_{10} (minutes)	1.0	1.2	13.8	70.1	3.9		

DISINFECTION PROCESS DATA

INDIVIDUAL DISINFECTION ZONES										PLANT TOTAL		
Disinfectant	C (mg/L)	Flow (MGD)	Temp (°C)	pH	CT_{CALC}	Giardia CT_{REQD}	Virus CT_{REQD}	Giardia Log	Virus Log	Giardia Log	Virus Log	Inact. Ratio
CLO2 *D1*	0.5	42.000	5.0	8.5	0.5	4.5	5.7	0.06	0.17			
CLO2 *D2*	0.4	42.000	5.0	8.5	0.5	4.5	5.7	0.06	0.17			
CLO2 *D3*	0.4	42.000	5.0	8.5	5.5	4.5	5.7	0.62	1.93	0.77	2.35	1.17
CLA *D4*	0.3	9.999	5.0	8.5	21.0	357.5	857.0	0.03	0.05			
CLA *D5*	0.3	19.999	5.0	8.5	1.2	357.5	857.0	0.00	0.00			

SUBMITTED BY: _____ Certificate No. and Grade: _____ Date: _____

DISINFECTION PROCESS PARAMETERS

APPROVED CT STUDY PARAMETERS						PERFORMANCE STANDARDS	
Parameters	Disinfection Zones					Log Inactivations	
	D6A	D6B	D6C	D7	D8	Giardia lamblia Cysts	Viruses
Flow Rate (MGD)	36.400	6.759	8.840			0.5	2.0
T_{10} (minutes)	59.2	53.0	24.3				

DISINFECTION PROCESS DATA

INDIVIDUAL DISINFECTION ZONES										PLANT TOTAL		
Disinfectant	C (mg/L)	Flow (MGD)	Temp (°C)	pH	CT_{CALC}	Giardia CT_{REQD}	Virus CT_{REQD}	Giardia Log	Virus Log	Giardia Log	Virus Log	Inact. Ratio
CLA *D6A*	0.3	36.400	5.0	8.5	17.8	357.5	857.0	0.02	0.04			
CLA *D6B*	0.3	6.759	5.0	8.5	15.9	357.5	857.0	0.02	0.04			
CLA *D6C*	0.3	8.840	5.0	8.5	7.3	357.5	857.0	0.01	0.02	SEE	PAGE	1
D7												
D8												

SUBMITTED BY: _____ Certificate No. and Grade: _____ Date: _____

Bryan W. Shaw, Ph.D, *Chairman*
Carlos Rubinstein, *Commissioner*
Toby Baker, *Commissioner*
Mark R. Vickery, P.G., *Executive Director*

Texas Commission on Environmental Quality

Protecting Texas by Reducing and Preventing Pollution

April 30, 2012

Mr. Mark Southard, Purification Superintendent
City of Wichita Falls
P.O. Box 1431
Wichita Falls, Texas 76307

Subject: City of Wichita Falls – PWS ID No. 2430001
Direct Integrity Test Values
Cypress 2008 RO Membrane Surface Water Treatment Plant
TCEQ Plant ID 21567
Wichita County, Texas

CN 600129316; RN 105598759

Dear Mr. Southard:

On February 14, 2011, the Texas Commission on Environmental Quality (TCEQ) received your letter regarding the Direct Integrity Test (DIT) calculations for the membrane treatment units at the City of Wichita Falls Cypress Membrane Surface Water Treatment Plant (MSWTP). To comply with TCEQ rules and federal requirements, water treatment plants that use membranes for pathogen removal credit must conduct periodic DITs to verify the removal efficiency of the membrane treatment process.

Tracking Membrane Performance

To comply with TCEQ rules and federal requirements, water treatment plants that use membranes for pathogen removal credit must conduct periodic DITs to verify the removal efficiency of the membrane treatment process. The TCEQ has released a new Surface Water Monthly Operating Report (SWMOR) spreadsheet for water treatment plants (WTPs) that use membranes and other alternative treatment technologies. This form, TCEQ Form 20356, is called the Surface Water Monthly Operating Report for Plants using Alternative Technologies (SWMOR-Alt). Operators will be notified when to begin using and submitting the new SWMOR-Alt form (TCEQ Form 0102D) in a separate letter.

In order to complete the report and claim treatment credit for the membrane units at the facility, the WTP operators must include the results of the DIT tests conducted each month. The operators will need to enter approved DIT parameters when they customize the SWMOR-Alt spreadsheet for each plant. The spreadsheet will then compare the actual test conditions with the approved conditions to determine if the membrane units are continuing to meet minimum performance requirements.

The TCEQ evaluated the design data submitted with your letter and prepared Table 1 to help the Cypress Membrane Surface Water Treatment Plant operators complete the SWMOR-Alt report.

TABLE 1: DIT PARAMETERS FOR THE GMSWTP (1)

Initial Test Pressure (P_{test}) (psi)	Upper Control Limit (UCL) (psi/min)	Log Removal Credit (LRC) (log)
16.5	1.65	3.0

(1) Based on the data and calculations shown in Attachment 1

The Cypress MSWTP meets the Bin 1 classification requirements for the source water as specified in 40 Code of Federal Regulations (CFR) Section 141.710(c). Based on this classification, the above referenced water system will be required to demonstrate removal efficiency equal to or greater than 3.0-log. As required for water systems with Bin 1 classification, the operators must conduct a DIT on each membrane unit, or rack, at least once every 7 days of membrane unit operation.

Water systems using surface water or groundwater under the influence of surface water must achieve a 3.0-log reduction of *Giardia,* a 2.0-log reduction for *Cryptosporidium*, and a 4.0-log reduction of viruses under the provision of the Surface Water Treatment Rule. A water system with a properly designed, operated, and maintained membrane system is given a 3.0-log credit for *Giardia* reduction, a 2-log credit for *Cryptosporidium* reduction and 2.0-log credit for virus reduction when coagulation, flocculation and clarification is applied upstream of the membranes. Since the Cypress Membrane Surface Water Treatment Plant provides full conventional pretreatment (coagulation, flocculation and clarification), the disinfection process must provide at least a 2.0-log inactivation of viruses.

If your monitoring plan has changed as a result of this DIT calculations, please submit an updated monitoring plan at the address below:

Monitoring Plan Coordinator (MC – 155)
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, TX 78711

Further information about monitoring plant requirements can be found in Regulatory Guidance (RG) 384 "How to Develop a Monitoring Plan for a Public Water System" or at TCEQ's website:

http://www.tceq.state.tx.us/permitting/water_supply/pdw/monitoring_plans/monitoring_plans.html

If you have additional questions or comments concerning this letter, or if we may be of further assistance, please contact Ms. Rian A. McMorris, Engineering Specialist, by email at rian.mcmorris@tceq.texas.gov, by telephone at (512) 239-4487, or by correspondence at:

Technical Review and Oversight Team (MC-159)
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, TX 78711-3087

Sincerely,

for

Ada Lichaa, P.G., Manager
Plan & Technical Review Section
Water Supply Division
Texas Commission on Environmental Quality

AL/RM

Enclosures: Enclosure 1: Direct Integrity Test Parameter Calculations
Enclosure 2: DIT Worksheet

cc w/ enclosure: TCEQ Tracer Study File
TCEQ PWS File
TCEQ Region (R-3), Abilene Regional Office
The Honorable Glen Barham, Mayor, City of Wichita Falls,
P.O. Box 1431, Wichita Falls, TX 76307-1431
Mr. Dennis Patterson, Operator, City of Wichita Falls,
P.O. Box 1431, Wichita Falls, TX 76307-1431

Enclosure 1:
Direct Integrity Test Parameter Calculations for the City Of Wichita Falls Cypress Membrane Surface Water Treatment Plant

Direct Integrity Test (DIT) Resolution and Sensitivity Calculations:
Title 30 of Texas Administrative Code (TAC) §290.42(G)(3)(B) was amended in January 2008 to require removal credit awarded to a membrane filtration system to be based on the lower of either the log removal value (LRV) proven by a direct integrity test (LRV_{DIT}) or the log removal value proven by a challenge study ($LRV_{C\text{-}Test}$). The regulations describe the resolution and sensitivity requirements for the Direct Integrity Test (DIT). The values used in these calculations are required for the TCEQ to approve removal credits for the Siemens Memcor S10V membranes, which include 5 units containing 504 modules each, located at the Cypress Membrane Surface Water Treatment Plant.

In accordance with the requirements in 30 TAC §290.42(G)(3)(B), detailed descriptions of the calculation methods and values for the DIT performed during the pilot study were provided. All formulas and methods of calculation are from the US EPA *Membrane Filtration Guidance Manual* and are in accordance with the DIT requirements of 40 Code of Federal Regulations (CFR) §141.719(b)(3). **Based on our review of the submitted calculations for determining the necessary values to verify a DIT test pressure resolution of 3 microns and sensitivity for the log removal credit (LRC) required, the following are TCEQ accepted values:**

Approved Minimum Test Pressure for DIT
To receive removal credit for *Cryptosporidim parvum*, the DIT procedure must be conducted at a pressure high enough to detect a 3-micron breach in the membrane.

1. **The TCEQ accepts the use of 16.5 psi for the Minimum Test Pressure (P_{test}).** The minimum required P_{test} of **16.5** psi is based on the following equation:

   Equation 4.1 (for a 3.0 micron defect): $P_{test} = (0.193 * \kappa * \sigma * \cos(\theta) + BP_{max})$

   where: the membrane specific pore shape correction factor (κ) = 1.0,
   the surface tension at the air-liquid interface (σ) = 74.9 dynes/centimeter(cm),
   the liquid-membrane contact angle (θ) = 0 degrees, and
   the maximum back pressure (BP_{max}) on the system = 2.0 psi.

   The TCEQ accepts the use of the most conservative values for κ, σ, and θ (as described above) and the $BP_{(max)}$ provided by the membrane vendor.

   Please note that the plant may conduct its DIT's at any pressure that is greater than or equal to the approved minimum test pressure shown above.

Approved Log Removal Credit (LRC) for the Membrane Unit

2. **The TCEQ accepts the volume of pressurized air in the system during the test (V_{sys}) of 3,122 liters (L) for the full-scale Hollow Fiber (HF) membrane unit.**

V_{sys} is used in equation 4.9 of the US EPA's Membrane Filtration Guidance Manual to verify the sensitivity of the DIT conducted during the pilot study is equal to or greater than the required Log Removal Credit (LRV)of 3.0-log.

Equation 4.9: $LRV_{DIT} = \log [(Q_p \times ALCR \times P_{atm}) \div (\Delta P_{test} \times V_{sys} \times VCF)]$

Where Q_p is the design capacity filtrate flow, ALCR is air-liquid conversion ratio, P_{atm} is atmospheric pressure, VCF is the volumetric concentration factor, and ΔP_{test} is the smallest rate of pressure decay that can be reliably measured during the integrity test.

3. **The TCEQ accepts the use of 40.23 for the ALCR;**

Equation C.4: $ALCR = 170 \times Y \times \{(P_{test} - BP) \times (P_{test} + P_{atm}) / (460 + T) \times TMP\}^{1/2}$

Using the following values:

- P_{test} = 16.5 psi;
- P_{atm} = 14.7 psia;
- BP = 2.0 psi;
- Temperature (T) = 95°F (35°C);
- Transmembrane pressure (TMP) = 12.0 psi maximum (per manufacturer)
- Net expansion factor for compressible flow through pipe to a larger area (Y) = 0.910 (from Appendix C Equation C.5 Membrane Filtration Guidance)

The above equation, Eq. C.4, is based on the Darcy Pipe Flow Model assuming turbulent flow such as from a broken hollow fiber (as defined in the US EPA Membrane Filtration Guidance Manual).

4. **The TCEQ accepts the use of 8,696.65 Liters per minute (L/min)) as the design capacity Q_p,** based on information provided by the approved TCEQ pilot study dated .

5. **A VCF of 1.0 for the full scale HF membrane units is acceptable.**

6. The smallest verifiable decay rate of 0.1 psi/min (ΔP_{test}) was provided by the manufacturer. Using this ΔP_{test} and Equation 4.9, a LRV_{DIT} of 4.22-log was calculated.

7. **For a 3.0 log removal credit (LRC), the TCEQ accepts the use of an upper control limit UCL of 1.65 psi/min**

Equation 4.17: Upper control limit (UCL) = $(Q_p \times ALCR \times P_{atm}) / (10^{LRC} \times V_{sys} \times VCF)$

Where:

- Q_p = 8,696.65 L/min;
- ALCR = 40.23;
- P_{atm} = 14.7 psia;
- LRC = 3;
- V_{sys} = 3,122 L; and,
- VCF = 1.0

Challenge Study

Based on the requirements of the US EPA's Long Term 2 Enhanced Surface Water Treatment Rule (LT2) and TCEQ's 2008 revised rules, each Texas public water system installing or replacing membranes that are used for microbiological treatment **after April 1, 2012**, can only continue to receive removal credit for *Cryptosporidium* oocysts and *Giardia lamblia* cysts if they meet the specifications in 30 TAC §290.42(g)(3)(A) and §290.111. This will include providing data for TCEQ review and approval to verify their membrane's Challenge Test Log Removal Value (LRV_{CT}), Non-Destructive Performance Testing (NDPT) method, corresponding Quality Control Release Value (QCRV) and method for the Direct Integrity Test Log Removal Value (LRV_{DIT}) as specified in the US EPA's LT2ESWTR and *Membrane Filtration Guidance Manual*.

Prior to any membrane replacement, challenge study data must be submitted and approved by the TCEQ for all HF MF/UF membranes replaced after April 1, 2012.

APPENDIX K

Verification Testing Protocol

TCEQ March 4, 2013 E-Mail

Cost For 45 Day Verification Testing

Proposed Verification Protocol

City of Wichita Falls Emergency DPR Project

WWTP Effluent (Pre-Disinfection) ✦1

	Frequency							
	Every 5 Min	Every 15 Min	Every 4 Hrs	Once per Day	Once per Week	Twice per Week	Startup/ 30 Days/ End	Comments (see footnote listed)
Flow Rate (gpm)		X						
Daily Flow Rate (gpd)				X				
Temperature (°C)		X						
Total Alkalinity (mg/L as $CaCO_3$)					X			
Total Suspended Solids (mg/L)				X				
5-day Carbonaceous Biochemical Oxygen Demand (mg/L)				X				
§290.118(b) Secondary Constituents							X	
Total Dissolved Solids (mg/L)					X			
§290.106(b) Inorganic Chemicals							X	
Turbidity (NTU)		X						
Metal Scan (mg/L) (As, Ba, Cd, Cr, Cu, Pb, Mn, Hg, Ni, Se, Ag, Zn)					X			
Lead							X	
Nitrate (mg/L)				X				
Bromide (mg/L)						X	X	
§290.107(b) Organic Chemicals							X	
Total Trihalomethanes (ug/L) (TTHM, Chloroform, Dibromochloromethane, Dichlorobromomethane, Bromoform)						X	X	
Haloacetic Acids (ug/L) (HAA5, Monochloroacetic Acid, Dichloroacetic Acid, Trichloracetic Acid, Monobromoacetic Acid, Dibromoacetic Acid)						X	X	

Total Organic Carbon (mg/L)					X			
Dissolved Organic Carbon (mg/L)					X			
§290.108(b)(1) Radiological (Ra-226, Ra-228, Uranium, Gross Alpha Activity)							X	
§290.108(b)(2) & 40CFR §141.66(d) Radiological (Gross Beta Particle & Photon Radioactivity, Tritium, Strontium-90)							X	
Algae Counts (cells/L)							X	
Escherichia coli (E. coli) enumeration (CFU/L)							X	
Giardia (cysts.L)							X	
Crypotsporidium (oocysts/L)							X	
Enterovirus (CFU/L)							X	
Norovirus (CFU/L)							X	
Nitroso-dimethylamine (NDMA) (ng/L)							X	
Notroso-pyrolidine (NPYR) (ng/L)							X	
Pharmaceuticals (ug/L)							X	
Hormones (ng/L)							X	
Personal Care Products (ng/L)							X	
Fluorodated Alkyl-Acids (ng/L) (PFOS, PFOA, PFNA, PFHxS, PFHpA, & PFBS)							X	
Sucralose (ug/L)							X	
Perchlorate (ug/L)							X	

Beginning of Effluent Transmission Pipeline Disinfection Zone ✦2

(@2.9 MGD = 1,140 minute detention time)

	Frequency							
	Every 5 Min	Every 15 Min	Every 4 Hrs	Once per Day	Once per Week	Twice per Week	Startup/ 30 Days/ End	Comments (see footnote listed)
pH			X					

Temperature (°C)			X					
Total Chlorine Residual (mg/L)			X					
Monochloramine Residual (mg/L)			X					
Free Chlorine Residual (mg/L)			X					
Free Ammonia (mg/L)			X					
Bromide (mg/L)					X			
Quantity of Chlorine used (ppd)				X				

Note: The City of Wichita Falls will be utilizing the Ammonia that pre-exists in the Wastewater Stream for combination with Chlorine to form Chloramines. Therefore, the City has removed the "Ammonia Feed Pump Dosage Rate" and the "Quantity of Ammonia Used" from the TCEQ recommended monitoring.

Note: "Total Trihalomethanes" and "Haloacetic Acids" were dropped from the TCEQ recommended monitoring at this point, since it is the same value that was monitored at the "WWTP Effluent (Pre-Disinfection)". "Total Trihalomethanes" and "Haloacetic Acids" will be monitored again at the end of the transmission pipeline.

End of Effluent Transmission Pipeline Disinfection Zone (at Flow Control Vault) ✦3

	Frequency							
	Every 5 Min	Every 15 Min	Every 4 Hrs	Once per Day	Once per Week	Twice per Week	Startup/ 30 Days/ End	Comments (see footnote listed)
pH		X						
Temperature (°C)		X						
Total Chlorine Residual (mg/L)		X						
Monochloramine Residual (mg/L)		X						
Free Chlorine Residual (mg/L)		X						
Free Ammonia (mg/L)		X						

Beginning of MF/RO Clarifier Disinfection Zone (inside Clarifier Mix Zone) ✦4

(@2.9 MGD = 2,504 min detention time to end of DZ)

	Frequency							
	Every 5 Min	Every 15 Min	Every 4 Hrs	Once per Day	Once per Week	Twice per Week	Startup/ 30 Days/ End	Comments (see footnote listed)
Flow Rate (gpm)		X						
pH			X					
Temperature (°C)			X					
Total Chlorine Residual after NH_3 addition (mg/L)			X					
Monochloramine Residual after NH_3 addition (mg/L)			X					
Free Chlorine Residual after NH_3 addition (mg/L)			X					
Free Ammonia after NH_3 addition (mg/L)			X					
Chlorine Dosage (mg/L)			X					
Quantity of Chlorine Used (ppd)				X				
Ammonia Dosage (mg/L)			X					
Quantity of Ammonia Used (ppd)				X				

MF/RO Clarifier #5

	Frequency							
	Every 5 Min	Every 15 Min	Every 4 Hrs	Once per Day	Once per Week	Twice per Week	Startup/ 30 Days/ End	Comments (see footnote listed)
pH			X					
Temperature (°C)			X					
Total Alkalinity (mg/L)			X					
Coagulant Dose (mg/L)			X					
Quantity of Coagulant Used (gpd)				X				
Effluent Turbidity (NTU)			X					1
Effluent TOC (mg/L)					X			
Effluent DOC (mg/L)					X			

Calculated Flocculator Hydraulic Detention Time (mins)							X	2
Calculated Surface Overflow Rate (gpm/sq.ft.)							X	2

1 The Hydraulic Detention Time through the MF/RO Clarifier at 2.9 MGD (Full Scale Verification Flow Rate) is 2,483 minutes (41 hours 23 minutes). However, the City of Wichita Falls as a standard practice samples the Effluent Turbidity from all of its Clarifiers every 2 hours and is recommending this frequency for the Verification phase.

2 Since the Full Scale Verification will be run at a constant flow, the City does not see the need to calculate these values every 4 hours. Therefore, we are recommending they be calculated once, at startup.

Note: Flow Rate was dropped from the TCEQ recommended monitoring at this point, since it is the same value that was monitored at the "Beginning of MF/RO Clarifier Disinfection Zone".

Feed Water of Selected MF Membrane Unit (MF Feed Trough) ✦6

	Frequency							
	Every 5 Min	Every 15 Min	Every 4 Hrs	Once per Day	Once per Week	Twice per Week	Startup/ 30 Days/ End	Comments (see footnote listed)
Flow Rate (gpm)		X						
Silt Density Index (SDI)				X				

Note: The City of Wichita Falls uses a MicroFiltration system (Siemens Memcor) that is not pressurized, but rather uses a vacuum. Therefore, the City removed the "Pressure" from the TCEQ recommended monitoring.

Note: The "Turbidity" that the TCEQ has recommended be monitored at this point is the same as the "Effluent Turbidity" that was monitored for at the "MF/RO Clarifier" point. Therefore, the City has elected not to monitor it again at this point.

Filtrate Water of Selected MF Membrane Unit ✦7

(@2.9 MGD = 21 min detention time)

	Frequency							
	Every	Every	Every	Once	Once per	Twice per	Startup/ 30 Days/	Comments (see footnote listed)

	5 Min	15 Min	4 Hrs	per Day	Week	Week	End	
Flow Rate (gpm)		X						
pH				X				
Total Alkalinity (mg/L as $CaCO_3$)					X			
Turbidity (mNTU)	X							
Total Organic Carbon (mg/L)					X			
Dissolved Organic Carbon (mg/L)					X			
Escherichia coli (E. coli) enumeration (CFU/L)							X	
Giardia (cysts.L)							X	
Crypotsporidium (oocysts/L)							X	
Enterovirus (CFU/L)							X	
Norovirus (CFU/L)							X	
Calculated TransMembrane Pressure (TMP, psi)			X					
Calculated Flux Rate (gal/sq.ft./day)			X					
Calculated Specific Flux Rate @ measured temperature			X					
Calculated Specific Flux normalized to 20°C			X					

Note: The City of Wichita Falls uses a MicroFiltration system (Siemens Memcor) that is not pressurized, but rather uses a vacuum. Therefore, the City removed the "Pressure" from the TCEQ recommended monitoring.

Note: The City of Wichita Falls currently monitors its Post MicroFiltration SDI after the Break Tank. Therefore, the City removed the "SDI" from this TCEQ recommended monitoring point and moved it to the "Break Tank" monitoring point.

End of MF/RO Clarifier Disinfection Zone ✦8
(@2.9 MGD = 2,504 min detention time: Clar. thru MF)

	Frequency							
	Every 5 Min	Every 15 Min	Every 4 Hrs	Once per Day	Once per Week	Twice per Week	Startup/ 30 Days/ End	Comments (see footnote listed)
pH		X						

Temperature (°C)		X						
Total Chlorine Residual (mg/L)		X						
Monochloramine Residual (mg/L)		X						
Free Chlorine Residual (mg/L)		X						
Free Ammonia (mg/L)		X						

Note: The "Flow Rate" that the TCEQ has recommended be monitored at this point is the same as the "Flow Rate" that was monitored for at the "Filtrate Water of Selected MF Membrane Unit" point. Therefore, the City has elected not to monitor it again at this point.

DeChlorination (Sodium Bisulfite Feed) ✦9

	Frequency							
	Every 5 Min	Every 15 Min	Every 4 Hrs	Once per Day	Once per Week	Twice per Week	Startup/ 30 Days/ End	Comments (see footnote listed)
Sodium Bisulfite Dosage (mg/L)			X					
Quantity of Sodium Bisulfite Used (gpd)				X				

Break Tank (RO Feed Tank) ✦10

	Frequency							
	Every 5 Min	Every 15 Min	Every 4 Hrs	Once per Day	Once per Week	Twice per Week	Startup/ 30 Days/ End	Comments (see footnote listed)
Flow Rate (gpm)		X						
Water Level (ft)			X					

Silt Density Index				X				
Effluent Free Chlorine Residual (mg/L)			X					
Effluent Total Chlorine Residual (mg/L)			X					
Calculated Hydraulic Detention Time (mins)			X					

Sulfuric Acid Feed ✦11

	Frequency							
	Every 5 Min	Every 15 Min	Every 4 Hrs	Once per Day	Once per Week	Twice per Week	Startup/ 30 Days/ End	Comments (see footnote listed)
Sulfuric Acid Dosage (mg/L)			X					
Quantity of Sulfuric Acid Used (gpd)				X				
pH after Sulfuric Acid Injection			X					

Antiscalant Feed) ✦12

	Frequency							
	Every 5 Min	Every 15 Min	Every 4 Hrs	Once per Day	Once per Week	Twice per Week	Startup/ 30 Days/ End	Comments (see footnote listed)
Antiscalant Dosage (mg/L)			X					
Quantity of Antiacalant Used (gpd)				X				

Feed Water of Selected RO Membrane Unit ✦13

	Frequency							
	Every 5 Min	Every 15 Min	Every 4 Hrs	Once per Day	Once per Week	Twice per Week	Startup/ 30 Days/ End	Comments (see footnote listed)
Flow Rate (gpm)		X						
Inlet Pressure (psi)			X					
Temperature (°C)			X					
Turbidity (NTU)		X						
Total Alkalinity (mg/L as $CaCO_3$)				X				
Total Hardness (mg/L as $CaCO_3$)				X				
Total Organic Carbon (mg/L)					X			
Dissolved Organic Carbon (mg/L)					X			
Total Suspended Solids (mg/L)				X				
Total Dissolved Solids (mg/L)				X				
Nitrate (mg/L)				X				
Nitrite (mg/L)							X	
Silica (mg/L)							X	

Note: The "pH" and "Silt Density Index" that the TCEQ has recommended be monitored at this point is the same as the "pH" and "Silt Density Index" that was monitored for at the "Sulfuric Acid Feed" and "Break Tank" points, respectively. Therefore, the City has elected not to monitor them again at this point.

First Stage Filtrate Water of Selected RO Membrane Unit ✦14

	Frequency							
	Every 5 Min	Every 15 Min	Every 4 Hrs	Once per Day	Once per Week	Twice per Week	Startup/ 30 Days/ End	Comments (see footnote listed)
Flow Rate (gpm)				X				
Calculated Flux Rate (gal/sq.ft./day) at measured temperature				X				
Calculated Specific Flux (gfd/psi) normalized to 20°C				X				

Calculated net driving pressure (psi)				X				

Second Stage Filtrate Water of Selected RO Membrane Unit ✦15

	Frequency							
	Every 5 Min	Every 15 Min	Every 4 Hrs	Once per Day	Once per Week	Twice per Week	Startup/ 30 Days/ End	Comments (see footnote listed)
Flow Rate (gpm)				X				
Calculated Flux Rate (gal/sq.ft./day) at measured temperature				X				
Calculated Specific Flux (gfd/psi) normalized to 20°C				X				
Calculated net driving pressure (psi)				X				

Reject (Concentrate) Water of Selected RO Membrane Unit ✦16

	Frequency							
	Every 5 Min	Every 15 Min	Every 4 Hrs	Once per Day	Once per Week	Twice per Week	Startup/ 30 Days/ End	Comments (see footnote listed)
Flow Rate (gpm)		X						
Pressure (psi)		X						
pH						X		
Temperature (°C)						X		
Turbidity (NTU)						X		
Total Dissolved Solids (mg/L)				X				
Nitrate (mg/L)				X				
Free Ammonia (mg/L)				X				
5-day Carbonaceous Biochemical Oxygen Demand (mg/L)						X		

Metal Scan (mg/L) (As, Ba, Cd, Cr, Cu, Pb, Mn, Hg, Ni, Se, Ag, Zn)						X		

Filtrate Water of Selected RO Membrane Unit ✦17

	Frequency							
	Every 5 Min	Every 15 Min	Every 4 Hrs	Once per Day	Once per Week	Twice per Week	Startup/ 30 Days/ End	Comments (see footnote listed)
Flow Rate (gpm)		X						
Effluent Pressure (psi)		X						
Temperature (°C)			X					
Calculated Net Driving Pressure (psi)			X					
Calculated Average Flux Rate (gfd) at measured temperature				X				
Calculated Average Specific Flux (gfd/psi) normalized to 20°C				X				
pH			X					
Total Alkalinity (mg/L as $CaCO_3$)					X			
§290.118(b) Secondary Constituents							X	
Total Dissolved Solids (mg/L)		X						
Maximum Daily TDS (mg/L)				X				
§290.106(b) Inorganic Chemicals							X	
Nitrate (mg/L)				X				
Nitrite (mg/L) if Nitrite is detected in RO Feed Water				X				
Bromide (mg/L)					X			
§290.107(b) Organic Chemicals							X	
Total Trihalomethanes (ug/L) (TTHM, Chloroform, Dibromochloromethane, Dichlorobromomethane, Bromoform)					X			
Haloacetic Acids (ug/L) (HAA5, Monochloroacetic Acid, Dichloroacetic Acid, Trichloracetic Acid, Monobromoacetic Acid, Dibromoacetic Acid)					X			

Total Organic Carbon (mg/L)					X			
Dissolved Organic Carbon (mg/L)					X			
§290.108(b)(1) Radiological (Ra-226, Ra-228, Uranium, Gross Alpha Activity)							X	
§290.108(b)(2) & 40CFR §141.66(d) Radiological (Gross Beta Particle & Photon Radioactivity, Tritium, Strontium-90)							X	
Nitroso-dimethylamine (NDMA) (ng/L)							X	
Notroso-pyrolidine (NPYR) (ng/L)							X	
Pharmaceuticals (ug/L)							X	
Hormones (ng/L)							X	
Personal Care Products (ng/L)							X	
Fluorodated Alkyl-Acids (ng/L) (PFOS, PFOA, PFNA, PFHxS, PFHpA, & PFBS)							X	
Sucralose (							X	
Perchlorate (ug/L)							X	

Calculated %-Removal (Based on Reported WWTP Effluent & RO Permeate Concentrations)

	Frequency							
	Every 5 Min	Every 15 Min	Every 4 Hrs	Once per Day	Once per Week	Twice per Week	Startup/ 30 Days/ End	Comments (see footnote listed)
Removal (%) of §290.118(b) Secondary Constituents							X	
Removal (%) of Total Dissolved Solids				X				
Removal (%) of §290.106(b) Inorganic Chemicals							X	
Removal (%) of Nitrate				X				
Removal (%) of Nitrite if Nitrite is detected in RO Feed Water				X				
Removal (%) of Bromide					X			
Removal (%) of §290.107(b) Organic Chemicals							X	
Removal (%) of Total Trihalomethanes (TTHM, Chloroform, Dibromochloromethane, Dichlorobromomethane, Bromoform)					X			

Removal (%) of Haloacetic Acids (HAA5, Monochloroacetic Acid, Dichloroacetic Acid, Trichloracetic Acid, Monobromoacetic Acid, Dibromoacetic Acid)					X			
Removal (%) of Total Organic Carbon					X			
Removal (%) of Dissolved Organic Carbon					X			
Removal (%) of §290.108(b)(1) Radiological (Ra-226, Ra-228, Uranium, Gross Alpha Activity)							X	
Removal (%) of §290.108(b)(2) & 40CFR §141.66(d) Radiological (Gross Beta Particle & Photon Radioactivity, Tritium, Strontium-90)							X	

RO Permeate Lagoon Effluent (At Lagoon Pump Station) ✦18

	Frequency							
	Every 5 Min	Every 15 Min	Every 4 Hrs	Once per Day	Once per Week	Twice per Week	Startup/ 30 Days/ End	Comments (see footnote listed)
Flow Rate (gpm)		X						
pH			X					
Temperature (°C)			X					
Turbidity (NTU)			X					
Total Alkalinity (mg/L as $CaCO_3$)					X			
Total Organic Carbon (mg/L)					X			
Dissolved Organic Carbon (mg/L)					X			
Nitrate (mg/L)				X				
Free Ammonia (mg/L)				X				

Raw Secondary Reservoir Water (at Secondary Reservoir) ✦19

	Frequency							
	Every 5 Min	Every 15 Min	Every 4 Hrs	Once per Day	Once per Week	Twice per Week	Startup/ 30 Days/ End	Comments (see footnote listed)
Flow Rate (gpm)		X						
Daily Flow Rate (gpd)				X				
Temperature (°C)		X						
Total Alkalinity (mg/L as $CaCO_3$)					X			
Total Suspended Solids (mg/L)				X				
§290.118(b) Secondary Constituents							X	
Total Dissolved Solids (mg/L)				X				
§290.106(b) Inorganic Chemicals							X	
Turbidity (NTU)		X						
Nitrate (mg/L)				X				
Bromide (mg/L)					X			
§290.107(b) Organic Chemicals							X	
Total Organic Carbon (mg/L)					X			
Dissolved Organic Carbon (mg/L)					X			
§290.108(b)(1) Radiological (Ra-226, Ra-228, Uranium, Gross Alpha Activity)							X	
§290.108(b)(2) & 40CFR §141.66(d) Radiological (Gross Beta Particle & Photon Radioactivity, Tritium, Strontium-90)							X	
Escherichia coli (E. coli) enumeration (CFU/L)							X	
Giardia (cysts.L)							X	
Crypotsporidium (oocysts/L)							X	
Enterovirus (CFU/L)							X	
Norovirus (CFU/L)							X	
Nitroso-dimethylamine (NDMA) (ng/L)							X	
Notroso-pyrolidine (NPYR) (ng/L)							X	
Pharmaceuticals (ug/L)							X	

Hormones (ng/L)							X	
Personal Care Products (ng/L)							X	
Fluorodated Alkyl-Acids (ng/L) (PFOS, PFOA, PFNA, PFHxS, PFHpA, & PFBS)							X	
Sucralose (							X	
Perchlorate (ug/L)							X	

Note: The "Total Trihalomethane" and "Haloacetic Acids" that the TCEQ has recommended be monitored at this point should not exists at the "Raw Secondary Reservoir Water" since these are disinfection by-products and disinfection has not occurred at this point. Therefore, the City has elected not to monitor them at this point.

Beginning of Raw Secondary Reservoir Transmission Pipeline Disinfection Zone ✦20

	Frequency							
	Every 5 Min	Every 15 Min	Every 4 Hrs	Once per Day	Once per Week	Twice per Week	Startup/ 30 Days/ End	Comments (see footnote listed)
Flow Rate (gpm)		X						
pH			X					
Temperature (°C)			X					
Chlorine Dioxide Dosage (mg/L)			X					
Quantity of Chlorine Dioxide used (ppd)				X				

Note: The City of Wichita Falls plans on taking credit for the entire transmission pipeline, as has been the practice for the last 20 years. The only time one of the other Disinfection Zones is ever utilized, is when there is either a generator problem or an increase demand; both of which are extremely rare.

End of Raw Secondary Reservoir Transmission Pipeline Disinfection Zone (pre-Splitter Box) ✦21

(@2.0 MGD = 337 minute detention time)

Frequency

	Every 5 Min	Every 15 Min	Every 4 Hrs	Once per Day	Once per Week	Twice per Week	Startup/ 30 Days/ End	Comments (see footnote listed)
Flow Rate (gpm)		X						
pH			X					
Temperature (°C)			X					
Turbidity (NTU)			X					
Total Alkalinity (mg/L as $CaCO_3$)				X				
Nitrate (mg/L)				X				
Chlorine Dioxide Residual (mg/L)			X					

Note: The "End of Raw Secondary Reservoir Transmission Pipeline Disinfection Zone" and the "Raw Secondary Reservoir Influent to Splitter Box" have been combined, since they are monitored at the same point.

Splitter Box Effluent (Blended RO Permeate & Secondary Reservoir Raw Water) +22

	Frequency							
	Every 5 Min	Every 15 Min	Every 4 Hrs	Once per Day	Once per Week	Twice per Week	Startup/ 30 Days/ End	Comments (see footnote listed)
Combined Flow Rate (gpm)			X					
pH			X					
Temperature (°C)								
Water Color				X				
Odor (Threshold Odor Number)				X				
§290.118(b) Secondary Constituents							X	
§290.106(b) Inorganic Chemicals							X	
Turbidity (NTU)			X					
Nitrate (mg/L)				X				
Bromide (mg/L)							X	

§290.107(b) Organic Chemicals							X	
Total Trihalomethanes (ug/L) (TTHM, Chloroform, Dibromochloromethane, Dichlorobromomethane, Bromoform)							X	
Haloacetic Acids (ug/L) (HAA5, Monochloroacetic Acid, Dichloroacetic Acid, Trichloracetic Acid, Monobromoacetic Acid, Dibromoacetic Acid)							X	
Total Organic Carbon (mg/L)					X			
Dissolved Organic Carbon (mg/L)					X			
§290.108(b)(1) Radiological (Ra-226, Ra-228, Uranium, Gross Alpha Activity)							X	
§290.108(b)(2) & 40CFR §141.66(d) Radiological (Gross Beta Particle & Photon Radioactivity, Tritium, Strontium-90)							X	
Free Chlorine Dosage(mg/L)			X					
Quantity of Chlorine Used (ppd)				X				
Ammonia Dosage (mg/L)			X					
Quantity of Ammonia Used (ppd)				X				
Total Chlorine Residual after NH_3 addition (mg/L)			X					
Free Chlorine Residual after NH_3 addition (mg/L)			X					
Free Ammonia after NH_3 addition (mg/L)			X					
Escherichia coli (E. coli) enumeration (CFU/L)							X	
Giardia (cysts.L)							X	
Crypotsporidium (oocysts/L)							X	
Enterovirus (CFU/L)							X	
Norovirus (CFU/L)							X	

Note: The City of Wichita Falls has combined the "Splitter Box Effluent" and Conventional 2010 SWTP Disinfection Zone" monitoring points detailed in the TCEQ Draft Full-Scale Verification Testing Checklist received March 4, 2013, since they are sampled at the same location.

Note: The City of Wichita Falls has removed the Monochloramine monitoring from this point, since it is starting with non-disinfected Raw Waters and is utilizing the Chlorine and Ammonia in the TCEQ approved sequence. Therefore, the City will be utilizing Total Chlorine from this sampling point through the remaining portion of the plant for the calculation of CT credits.

Calculated %-Change (Based on Reported RO Permeate Lagoon Effluent Concentrations)

	Frequency							
	Every 5 Min	Every 15 Min	Every 4 Hrs	Once per Day	Once per Week	Twice per Week	Startup/ 30 Days/ End	Comments (see footnote listed)
Change (% +/-) of Nitrate				X				
Change (% +/-) of Bromide							X	
Change (% +/-) of Total Trihalomethanes (TTHM, Chloroform, Dibromochloromethane, Dichlorobromomethane, Bromoform)							X	
Change (% +/-) of Haloacetic Acids (HAA5, Monochloroacetic Acid, Dichloroacetic Acid, Trichloracetic Acid, Monobromoacetic Acid, Dibromoacetic Acid)							X	
Change (% +/-) Chlorite				X				
Change (% +/-) of Total Organic Carbon					X			

2010 SWTP Clarifier ✦23

	Frequency							
	Every 5 Min	Every 15 Min	Every 4 Hrs	Once per Day	Once per Week	Twice per Week	Startup/ 30 Days/ End	Comments (see footnote listed)
Flow Rate (gpm)		X						
Coagulant Dose (mg/L)			X					
Quantity of Coagulant Used (gpd)				X				
Effluent Turbidity (NTU)			X					1
Lime Feed Rate (gpm)			X					
Quantity of Lime Used (ppd)				X				
Effluent TOC (mg/L)					X			

Effluent DOC (mg/L)					X			
Calculated Flocculator Hydraulic Detention Time (mins)							X	2
Calculated Surface Overflow Rate (gpm/sq.ft.)							X	2

1 The Hydraulic Detention Time through the 2010 SWTP Clarifier at 4.0 MGD (Full Scale Verification Flow Rate) is 334 minutes (5 hours 34 minutes). However, the City of Wichita Falls as a standard practice samples the Effluent Turbidity from all of its Clarifiers every 2 hours and is recommending this frequency for the Verification phase.

2 Since the Full Scale Verification will be run at a constant flow, the City does not see the need to calculate these values every 4 hours. Therefore, we are recommending they be calculated once, at startup.

Note: The "Influent pH", "Influent Total Alkalinity", "Influent Temperature", "Free Chlorine Dosage" and "Ammonia Dosage" are the same as monitored at the "Splitter Box Effluent" point. Therefore, the City of Wichita Falls has not included them again for this monitoring point.

Note: The unit of measure for the "Lime Feed Rate" was changed to gallons per minute (gpm), to accommodate the current method of calculating/adjusting the lime dosage.

2010 Recarbonation Basin ✦24

	Frequency							
	Every 5 Min	Every 15 Min	Every 4 Hrs	Once per Day	Once per Week	Twice per Week	Startup/ 30 Days/ End	Comments (see footnote listed)
Effluent pH				X				
Carbon Dioxide Dose (mg/L)				X				
Quantity of Carbon Dioxide Used (ppd)				X				

Note: The "Flow Rate" that the TCEQ has recommended be monitored at this point is the same as the "Flow Rate" that was monitored for at the "2010 SWTP Clarifier" point. Therefore, the City has elected not to monitor it again at this point.

2010 SWTP Dual Media Filters ✦25

	Frequency							
	Every 5 Min	Every 15 Min	Every 4 Hrs	Once per Day	Once per Week	Twice per Week	Startup/ 30 Days/ End	Comments (see footnote listed)
Individual Filter Flow Rate (gpm)			X					
Combined Flow Rate (gpm)			X					
pH		X						
Temperature (°C)		X						
Filtered Water Turbidity (NTU)		X						
Calculated Filter Hydraulic Loading Rate (gpm/sq.ft.)			X					1
Total Chlorine Residual (mg/L)		X						
Free Chlorine Residual (mg/L)		X						
Free Ammonia (mg/L)		X						

1 Since the Full Scale Verification will be run at a constant flow, the City does not see the need to calculate this value every 4 hours. Therefore, we are recommending they be calculated once, at startup.

Note: At the Full Scale Verification Flow Rate of 4.0 MGD, the 2010 SWTP requires that 2 of the Dual Media Filters be utilized (2.0 MGD each). Therefore, the City will monitor both of the filters performance, rather than a "selected" filter.

Note: The City of Wichita Falls has combined the "2010 SWTP Dual Media Filters" and "End Conventional 2010 SWTP Disinfection Zone" monitoring points detailed in the TCEQ Draft Full-Scale Verification Testing Checklist received March 4, 2013, since they are sampled at the same location.

Note: The City of Wichita Falls has removed the Monochloramine monitoring from this point, since it has started disinfecting the Raw Waters at the Splitter Box with Chlorine and Ammonia in a TCEQ approved sequence. Therefore, the City will be utilizing Total Chlorine for the calculation of CT credits at this point.

Beginning of 2010 SWTP Clearwell Disinfection Zone ✦26

	Frequency							
	Every 5 Min	Every 15 Min	Every 4 Hrs	Once per Day	Once per Week	Twice per Week	Startup/ 30 Days/ End	Comments (see footnote listed)

pH			X					
Temperature (°C)			X					
Total Chlorine Residual after NH_3 addition (mg/L)			X					
Free Chlorine Residual after NH_3 addition (mg/L)			X					
Free Ammonia after NH_3 addition (mg/L)			X					
Chlorine Dosage (mg/L)			X					
Quantity of Chlorine Used (ppd)				X				
Ammonia Dosage (mg/L)			X					
Quantity of Ammonia Used (ppd)				X				

Note: The "Total Chlorine Residual, Pre-Injection" and the "Free Ammonia Residual, Pre-Injection" were removed from this monitoring point, as they are monitored for at the "2010 SWTP Dual Media Filters" point.
Note: The City of Wichita Falls has removed the Monochloramine monitoring from this point, since it has started disinfecting the Raw Waters at the Splitter Box with Chlorine and Ammonia in a TCEQ approved sequence. Therefore, the City will be utilizing Total Chlorine for the calculation of CT credits at this point.

Fluoride Adjustment ✦27

	Frequency							
	Every 5 Min	Every 15 Min	Every 4 Hrs	Once per Day	Once per Week	Twice per Week	Startup/ 30 Days/ End	Comments (see footnote listed)
Fluoride Concentration pre-Hydrofluosilicic Acid Injection (mg/L)				X				
Hydrofluosilicic Acid Dosage (mg/L)				X				
Quantity of Hydrofluosilicic Acid Used (gpd)				X				

Finished Water (Post 2010 Clearwell) ✦28

Frequency

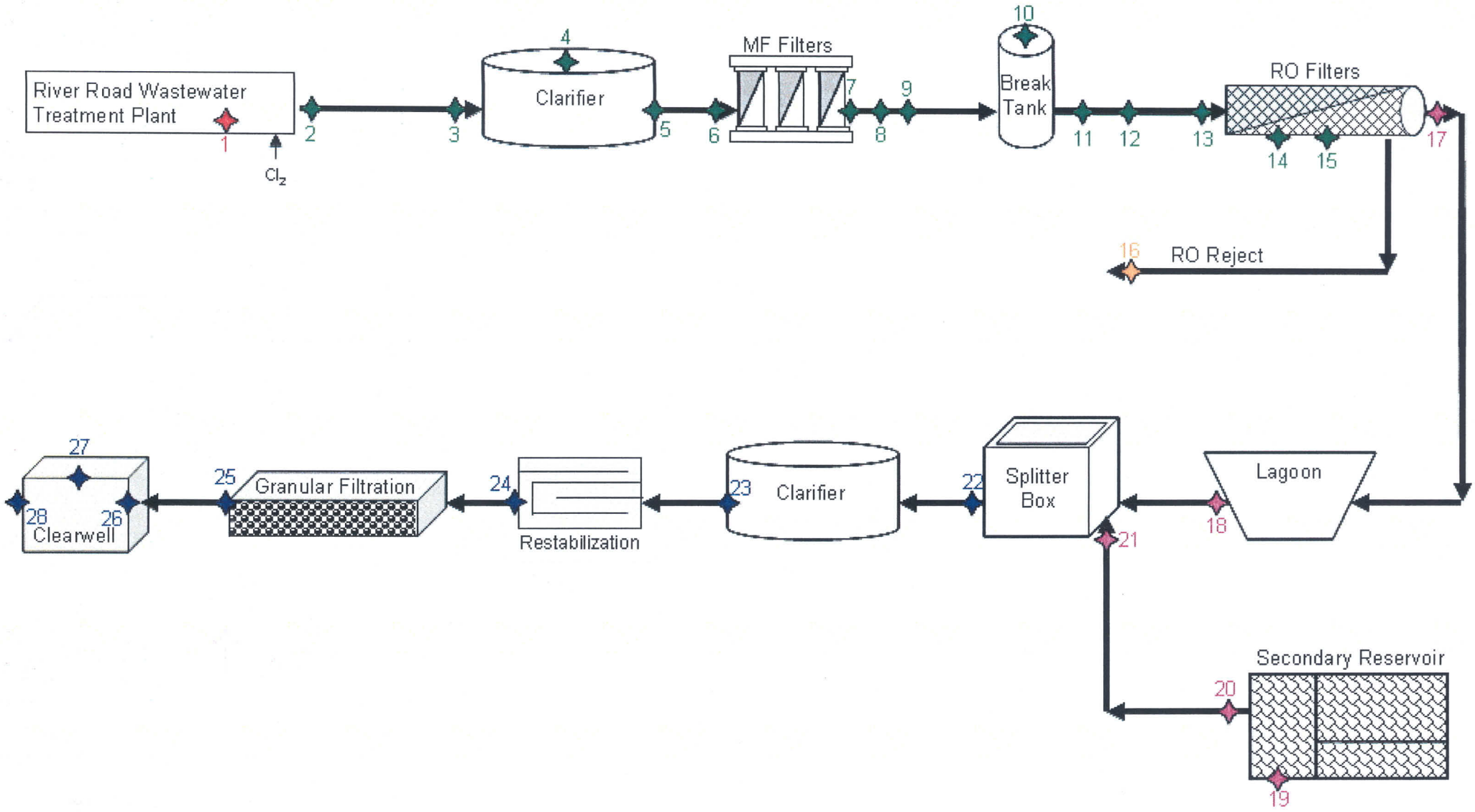
	Every 5 Min	Every 15 Min	Every 4 Hrs	Once per Day	Once per Week	Twice per Week	Startup/ 30 Days/ End	Comments (see footnote listed)
Flow Rate (gpm)		X						
Daily Total Quantity Treated (MGD)				X				
pH		X						
Temperature (^{o}C)		X						
Total Alkalinity (mg/L as $CaCO_3$)					X			
Total Hardness (mg/L as $CaCO_3$)					X			
Calculated Langlier Saturation Index (LSI)					X			
Water Color				X				
Odor (Threshold Odor Number)				X				
Total Dissolved Solids (mg/L)				X				
Fluoride (mg/L)				X				
Turbidity (NTU)		X						
Turbidity (mNTU)		X						
Lead							X	
Nitrate (mg/L)				X				
Total Trihalomethanes (ug/L) (TTHM, Chloroform, Dibromochloromethane, Dichlorobromomethane, Bromoform)					X			
Haloacetic Acids (ug/L) (HAA5, Monochloroacetic Acid, Dichloroacetic Acid, Trichloracetic Acid, Monobromoacetic Acid, Dibromoacetic Acid)					X			
Total Chlorine Residual (mg/L)		X						
Free Chlorine Residual (mg/L)		X						
Free Ammonia (mg/L)		X						
Chlorine Dioxide (mg/L)				X				
Chlorite				X				
Escherichia coli (E. coli) enumeration (CFU/L)							X	
Giardia (cysts.L)							X	
Crypotsporidium (oocysts/L)							X	
Enterovirus (CFU/L)							X	

Norovirus (CFU/L)							X	
Nitroso-dimethylamine (NDMA) (ng/L)							X	
Notroso-pyrolidine (NPYR) (ng/L)							X	
Pharmaceuticals (ug/L)							X	
Hormones (ng/L)							X	
Personal Care Products (ng/L)							X	
Fluorodated Alkyl-Acids (ng/L) (PFOS, PFOA, PFNA, PFHxS, PFHpA, & PFBS)							X	
Sucralose (							X	
Perchlorate (ug/L)							X	

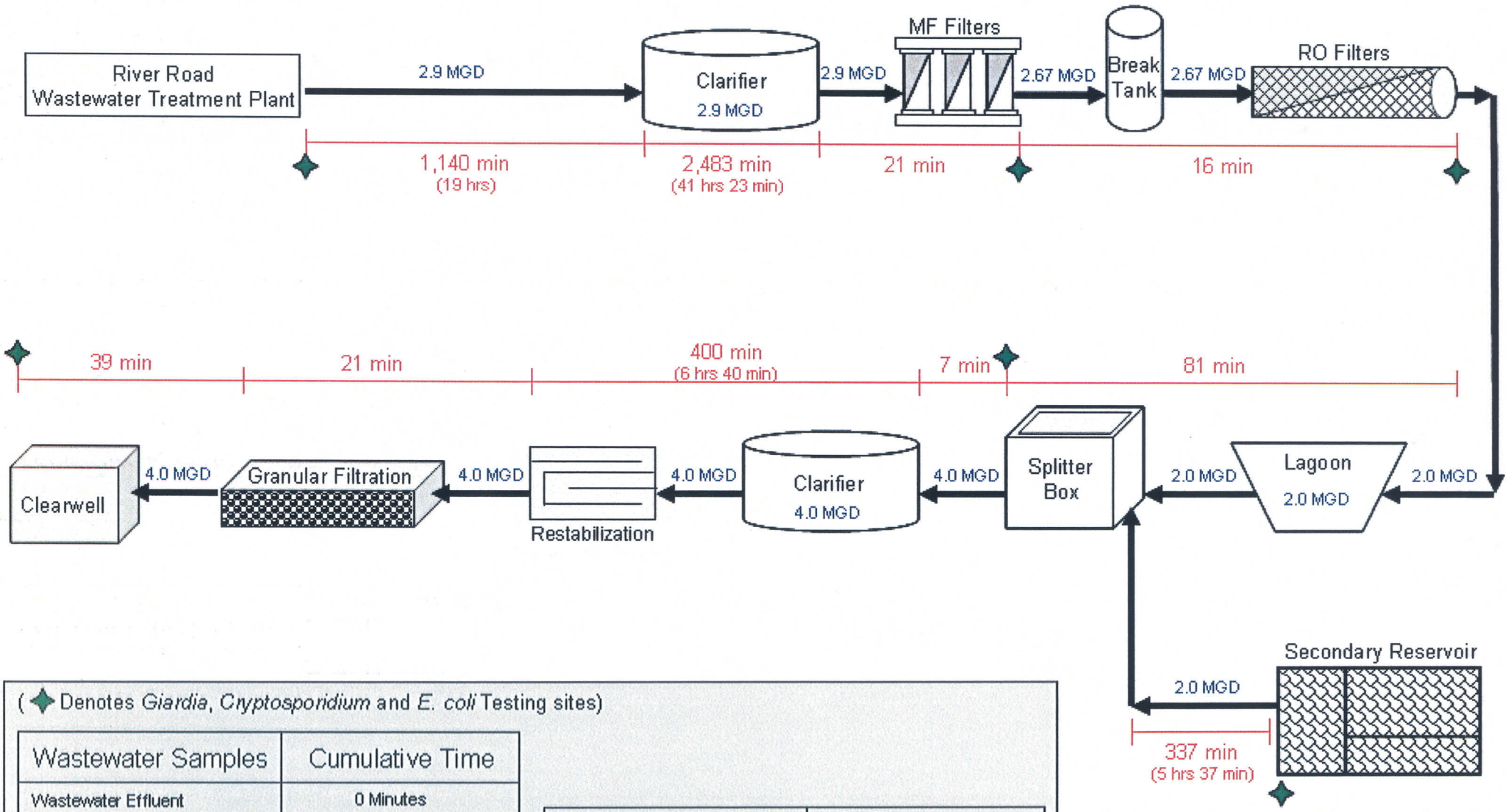
Note: The City of Wichita Falls has combined the "Finished Water" and "End 2010 SWTP Clearwell Disinfection Zone" monitoring points detailed in the TCEQ Draft Full-Scale Verification Testing Checklist received March 4, 2013, since they are sampled at the same location.

Note: The City of Wichita Falls has removed the Monochloramine monitoring from this point, since it has started disinfecting the Raw Waters at the Splitter Box with Chlorine and Ammonia in a TCEQ approved sequence. Therefore, the City will be utilizing Total Chlorine for the calculation of CT credits at this point.

Full Scale Verification Sampling Points



Hydraulic Detention Times for *Giardia*, *Cryptosporidium* and *E. coli* Testing at Verification Flow Rates



(✦ Denotes *Giardia*, *Cryptosporidium* and *E. coli* Testing sites)

Wastewater Samples	Cumulative Time
Wastewater Effluent	0 Minutes
Microfiltration Permeate	60 Hours 44 Minutes
Reverse Osmosis Permeate	61 Hours 00 Minutes
Post Splitter Box	62 Hours 21 Minutes
Post Clearwell	70 Hours 8 Minutes

Lake Water Samples	Cumulative Time
Secondary Reservoir	0 Minutes
Post Splitter Box	5 Hours 37 Minutes
Post Clearwell	13 Hours 24 Minutes

Kerry D. Maroney

From: Daniel Nix [daniel.nix@wichitafallstx.gov]
Sent: Monday, March 04, 2013 3:55 PM
To: Mark Southard; Blair Ramon; Harold Burris; Kerry D. Maroney
Subject: Fwd: Wichita Falls Draft Full-Scale Verification Monitoring Guidance
Attachments: 2430001-DRAFT-Full-Scale Verification Testing Checklist_3-04-13.docx

---------- Forwarded message ----------
From: **Joel Klumpp** <joel.klumpp@tceq.texas.gov>
Date: Mon, Mar 4, 2013 at 3:42 PM
Subject: Wichita Falls Draft Full-Scale Verification Monitoring Guidance
To: "Daniel Nix (daniel.nix@wichitafallstx.gov)" <daniel.nix@wichitafallstx.gov>
Cc: "Russell Schreiber (russell.schreiber@wichitafallstx.gov)" <russell.schreiber@wichitafallstx.gov>, Linda Brookins <linda.brookins@tceq.texas.gov>, Ada Lichaa <ada.lichaa@tceq.texas.gov>, Vera Poe <vera.poe@tceq.texas.gov>, Pritesh Tripathi <pritesh.tripathi@tceq.texas.gov>, James Weddell <james.weddell@tceq.texas.gov>, Marlo Berg <Marlo.Berg@tceq.texas.gov>, Jack Schulze <jack.schulze@tceq.texas.gov>, Alicia Diehl <Alicia.Diehl@tceq.texas.gov>

Daniel,

Please see the following guidance documents attached to this email:

- Draft Full-Scale Verification Testing Checklist
- Draft Monitoring and Reporting of Operating Processes
- Draft Information regarding Unregulated Contaminants of Concern

We hope that this information will be useful to you as you work on your Emergency DPR Project.

Please call me at 512-239-4453 or Red Weddell at 325-481-8056 if you have any questions about these documents. Please note that Red is out of the office this week to participate in an evidentiary hearing here in Austin.

Sincerely,

Joel

Joel Klumpp | Team Leader | Technical Review and Oversight Team | TCEQ

12100 Park 35 Circle, Bldg. F | Austin, Texas 78753 | ☎ 🖷 (512) 239-4453 Fax: (512) 239-6050 | ✉: Joel.Klumpp@tceq.texas.gov

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Daniel K. Nix
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Those who have the privilege to know have the duty to act. ~Albert Einstein

Minimum Monitoring and Reporting of Water Qualities and Flow Rates

Water quality monitoring for chemical and microbiological constituents and frequencies are listed and marked with a check (√) in Table A below. These monitoring parameters have been selected so that the TCEQ can verify the continuous protection of public health by the removal or inactivation of chemical and microbiological contaminants through the different proposed treatment processes at the tested flow rates and operating parameters. The PWS should customize the sampling plan for the treatment provided and the raw water quality expected.

Continuous (5-minute, 15-minute, and 4-hour) and daily monitoring are to be conducted onsite.

Samples collected at weekly (once every 7 days) and at longer frequencies should be submitted to an offsite NELAP accredited laboratory for drinking water analysis. Analyses marked for both onsite and offsite monitoring are required for quality control to verify the accuracy of the onsite monitoring equipment.

Table A

	Continuous, every			Once per day	Once per 7-days	Twice per week	Startup & End	Startup, every 30 days, & End
	5-min.	15-min.	4-hrs.					
WWTP Effluent (prior to DZ-injection point)								
Flow rate (gpm)		√						
Turbidity (NTU)		√						
Temperature (°C)		√						
Escherichia coli (E. coli) enumeration	Frequency to be based on hydraulic detention time between WWTP effluent and selected 2010 SWTP filter effluent							√
Giardia (cysts/L)	Frequency to be based on hydraulic detention time between WWTP effluent and selected 2010 SWTP filter effluent							√
Cryptosporidium (oocysts/L)	Frequency to be based on hydraulic detention time between WWTP effluent and selected 2010 SWTP filter effluent							√
Total dissolved solids (TDS, mg/L)					√			
Total suspended solids (TSS, mg/L)				√				
Daily flow rate (gpd)		√						
Nitrate (mg/L)				√				√

Minimum Monitoring and Reporting of Water Qualities and Flow Rates

	Continuous, every			Once per day	Once per 7-days	Twice per week	Startup & End	Startup, every 30 days, & End
	5-min.	15-min.	4-hrs.					
Alkalinity (mg/L)					√			
Total organic carbon (TOC, mg/L)					√			
Dissolved organic carbon (DOC, mg/L)					√			
5-day Carbonaceous biochemical oxygen demand (CBOD5, mg/L)				√				
Full metal scan (mg/L, arsenic, barium, cadium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, zinc)					√			
Algae counts (CFU/L)								√
Chemicals listed in §290.106(b) Inorganics Chemicals								√
Chemicals listed in §290.107(b) Organic Chemicals								√
Chemicals listed in §290.108(b)(1) (radium 226, radium 228, uranium, gross alpha activity)								√
Chemicals listed in §290.108(b)(2) & 40 CFR §141.66(d) (gross beta particle and photon radioactivity, tritium, strontium 90)								√
Chemicals listed in §290.118(b) Secondary Chemicals								√
Lead (ug/L)								√
Total trihalomethanes (TTHM, chloroform, dichlorobromomethane, dibromochloromethane, bromoform) (ug/L)								√
Haloacetic acids (group of 5) (HAA5, monochloroacetic acid, dichloroacetic acid, trichloroacetic acid, monobromoacetic acid, dibromoacetic acid) (ug/L)								√
Bromide								√
Begin WWTP Effluent Breakpoint Chlorination Disinfection Zone (DZ)								
Flow rate (gpm)		√						
Free ammonia residual before ammonia injection(mg/L)		√						
Oxidation reduction potential (ORP)			√					
Free chlorine dosage (mg/L)			√					
Free chlorine residual, after chlorine injection and before ammonia injection (mg/L)			√					
pH level at free chlorine residual monitoring tap			√					
Water temperature at free chlorine residual monitoring tap(°C)			√					
End WWTP Effluent Breakpoint Chlorination Disinfection Zone (DZ)								
Flow rate (gpm)		√						
Free chlorine residual (mg/L)		√						
Total chlorine residual, (mg/L)			√					

Minimum Monitoring and Reporting of Water Qualities and Flow Rates

	Continuous, every			Once per day	Once per 7-days	Twice per week	Startup & End	Startup, every 30 days, & End
	5-min.	15-min.	4-hrs.					
Monochloramine residual(mg/L)			√					
Free ammonia level (mg/L)		√						
pH level		√						
Water temperature (°C)		√						
Begin WWTP Effluent Transmission Line Disinfection Zone (DZ)								
Ammonia feed pump dosage rate (mg/L)			√					
Total chlorine residual, (mg/L)			√					
Monochloramine residual, after ammonia injection (mg/L)			√					
Free chlorine residual, after ammonia injection (mg/L)			√					
Free ammonia level, after ammonia injection (mg/L)			√					
pH level at monochloramine residual monitoring tap			√					
Water temperature at for monochloramine residual monitoring tap(°C)			√					
Total trihalomethanes (TTHM, chloroform, dichlorobromomethane, dibromochloromethane, bromoform) (ug/L)					√			
Haloacetic acids (group of 5) (HAA5, monochloroacetic acid, dichloroacetic acid, trichloroacetic acid, monobromoacetic acid, dibromoacetic acid) (ug/L)					√			
Bromide					√			
Quantity of chlorine used (pounds per day, ppd)				√				
Quantity of ammonia used (ppd)				√				
End of WWTP Effluent Transmission Line DZ								
Total chlorine residual (mg/L)		√						
Monochloramine residual (mg/L)		√						
Free chlorine residual (mg/L)		√						
Free ammonia level (mg/L)		√						
pH level		√						
Water temperature (°C)		√						
Begin MF/RO Clarifier DZ								
Flow rate (gpm)		√						
Free chlorine feed pump dosage rate (mg/L)			√					
Ammonia feed pump dosage rate (mg/L)			√					
Total chlorine residual, after ammonia injection (mg/L)			√					

Minimum Monitoring and Reporting of Water Qualities and Flow Rates

	Continuous, every			Once per day	Once per 7-days	Twice per week	Startup & End	Startup, every 30 days, & End
	5-min.	15-min.	4-hrs.					
Monochloramine residual, after ammonia injection (mg/L)			√					
Free chlorine residual, after ammonia injection (mg/L)			√					
Free ammonia level, after ammonia injection (mg/L)			√					
pH level at monchloramine residual monitoring tap			√					
Water temperature at monochloramine residual monitoring tap(°C)			√					
Quantity of chlorine used (gpd)				√				
Quantity of ammonia used (gpd)				√				
MF/RO Membrane Coagulation, Flocculation & Clarification								
Flow rate (gpm)		√						
pH level			√					
Alkalinty level (mg/L)			√					
Influent water temperature (°C)			√					
Coagulant dosage (mg/L)			√					
Calculated flocculator hydraulic detention time (mins.)			√					
Calculated surface overflow rate (gpm/sf)			√					
Effluent turbidity level (NTU)	Frequency based on hydraulic detention time of MF/RO Clarifier							
Quantity of coagulant used (gpd)				√				
Effluent TOC (mg/L)					√			
Effluent DOC (mg/L)					√			
End of MF/RO Clarifier DZ								
Total chlorine residual (mg/L)		√						
Monochloramine residual (mg/L)		√						
Free chlorine residual (mg/L)		√						
Free ammonia level (mg/L)		√						
pH level		√						
Water temperature (°C)		√						
Begin MF Membrane DZ								
Free chlorine feed pump dosage rate (mg/L)			√					
Ammonia feed pump dosage rate (mg/L)			√					
Total chlorine residual, after ammonia injection (mg/L)		√						

Minimum Monitoring and Reporting of Water Qualities and Flow Rates

	Continuous, every			Once per day	Once per 7-days	Twice per week	Startup & End	Startup, every 30 days, & End
	5-min.	15-min.	4-hrs.					
Monochloramine residual, after ammonia injection (mg/L)		√						
Free chlorine residual, after ammonia injection (mg/L)		√						
Free ammonia level, after ammonia injection (mg/L)		√						
pH level at monochloramine residual monitoring tap		√						
Water temperature at monochloramine residual monitoring tap (°C)		√						
Selected Microfiltration Prefilter								
Flow rate (gpm)		√						
Calculated hydraulic loading rate (gpm/sf)			√					
Selected MF Membrane Unit Feed Water								
Flow rate (gpm)		√						
Turbidity (NTU)		√						
Pressure (psi)		√						
Silt density index (SDI)				√				
Selected MF Membrane Unit Filtrate								
Turbidity (mNTU)	√							
Pressure (psi)		√						
Flow rate (gpm)		√						
Calculated transmembrane pressure (TMP, psi)			√					
Calculated flux rate (gallons per square-foot per day, gfd)			√					
Calculated specific flux rate (gfd/psi) at measured temperature			√					
Calculated specific flux (gfd/psi) normalized to 20° C			√					
Escherichia coli (E. coli) enumeration	Frequency based on hydraulic detention time between WWTP effluent and selected MF membrane unit effluent							√
Giardia (cysts/L)	Frequency based on hydraulic detention time between WWTP effluent and selected MF membrane unit effluent							√

Minimum Monitoring and Reporting of Water Qualities and Flow Rates

	Continuous, every			Once per day	Once per 7-days	Twice per week	Startup & End	Startup, every 30 days, & End
	5-min.	15-min.	4-hrs.					
Cryptosporidium (oocysts/L)	Frequency based on hydraulic detention time between WWTP effluent and selected MF membrane unit effluent							√
pH level				√				
SDI				√				
Alkalinity (mg/L)					√			
TOC (mg/L)					√			
DOC (mg/L)					√			
End of MF Membrane DZ								
Flow rate (gpm)		√						
Total chlorine residual (mg/L)		√						
Monochloramine residual (mg/L)		√						
Free chlorine residual (mg/L)		√						
Free ammonia level (mg/L)		√						
pH level		√						
Water temperature (°C)		√						
Sodium Bisulfite Feed								
Sodium bisulfite feed pump dosage rate (mg/L)			√					
Quantity of sodium bisulfite used (ppd)				√				
Break Tank (RO membrane feed tank)								
Flow rate (gpm)		√						
Water level (feet)			√					
Calculated hydraulic detention time (mins.)			√					
Effluent free chlorine residual (mg/L)			√					
Effluent total chlorine residual (mg/L)			√					
Sulfuric Acid Feed								
Sulfuric acid feed pump dosage rate (mg/L)			√					
pH level after injection			√					
Quantity of sulfuric acid used (gpd)				√				

Minimum Monitoring and Reporting of Water Qualities and Flow Rates

	Continuous, every			Once per day	Once per 7-days	Twice per week	Startup & End	Startup, every 30 days, & End
	5-min.	15-min.	4-hrs.					
Antiscalant Feed								
Antiscalant feed pump dosage rate (mg/L)			√					
Quantity of antiscalant used (gpd)				√				
Selected RO Membrane Prefilter								
Flow rate (gpm)		√						
Hydraulic loading rate (gpm/sf)			√					
Selected RO Membrane Unit Feed Water								
Flow rate (gpm)		√						
Turbidity (NTU)		√						
Inlet pressure (psi)			√					
Temperature (° C)			√					
Nitrate (mg/L)			√					√
TDS (mg/L)			√					
TSS (mg/L)			√					
SDI				√				
pH level				√				
Hardness as calcium carbonate (mg/L)				√				
Alkalinity (mg/L)				√				
TOC (mg/L)					√			
DOC (mg/L)					√			
Nitrite (mg/L)								√
Silica (mg/L)								√
Selected RO Membrane Unit Reject								
Flow rate (gpm)		√						
Pressure (psi)		√						
Temperature (°C)						√		
TDS (mg/L)				√				
pH level						√		
Turbidity (NTU)						√		
Free ammonia (mg/L)				√				
Nitrate (mg/L)				√				

Minimum Monitoring and Reporting of Water Qualities and Flow Rates

	Continuous, every			Once per day	Once per 7-days	Twice per week	Startup & End	Startup, every 30 days, & End
	5-min.	15-min.	4-hrs.					
CBOD5 (mg/L)						√		
Full metal scan (mg/L, arsenic, barium, cadium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, zinc)						√		
Selected RO Membrane Unit Permeate								
Total flow rate per unit (gpm)		√						
TDS (mg/L)		√						
Effluent pressure (psi)		√						
Temperature (°C)			√					
Calcualted net driving pressure (psi)			√					
pH level			√					
Maximum daily TDS (mg/L)				√				
Calculated average flux rate (gfd) at measured temperature				√				
Calculated average specific flux rate (gfd/psi) normalized to 20° C				√				
Nitrate (mg/L)				√				√
Nitrite (mg/L) *if nitrite is detected in RO membrane feed water*				√				√
Alkalinity (mg/L)					√			
TOC (mg/L)					√			
DOC (mg/L)					√			
Chemical listed in §290.106(b) Inorganics Chemicals								√
Chemicals listed in §290.107(b) Organic Chemicals								√
Chemicals listed in §290.108(b)(1) and §290.108(b)(2) & 40 CFR §141.66(d)								√
Chemicals listed in §290.118(b) Secondary Chemicals								√
TTHM (ug/L)					√			
HAA5 (ug/L)					√			
Bromide (mg/L)					√			
First Stage								
Flow rate (gpm)				√				
Calculated flux rate (gfd) at measured temperature				√				
Calculated net driving pressure (psi)				√				
Calculated specific flux rate (gfd/psi) normalized to 20° C				√				

Minimum Monitoring and Reporting of Water Qualities and Flow Rates

	Continuous, every			Once per day	Once per 7-days	Twice per week	Startup & End	Startup, every 30 days, & End
	5-min.	15-min.	4-hrs.					
Second Stage								
Flow rate (gpm)				√				
Calculated flux rate (gfd) at measured temperature				√				
Calculated net driving pressure (psi)				√				
Calculated specific flux rate (gfd/psi) normalized to 20° C				√				
Calculated %-Removal Based on Reported WWTP Effluent and RO Permeate Levels								
Nitrate removal (%)				√				
TDS removal (%)				√				
TOC removal (%)					√			
DOC removal (%)					√			
Removal of inorganics (%)								√
Removal of organics (%)								√
Removal of all radionuclides (%)								√
Removal of secondary chemicals (%)								√
TTHM removal (%)								√
HAA5s removal (%)								√
Bromide removal (%)								√
RO Permeate Lagoon Effluent								
Flow rate (gpm)		√						
Turbidity (NTU)			√					
pH level			√					
Temperature (°C)			√					
Nitrate (mg/L)				√				√
Free ammonia level (mg/L)				√				
Alkalinity (mg/L)					√			
TOC (mg/L)					√			
DOC (mg/L)					√			
Raw Secondary Reservoir Water								
Flow rate (gpm)		√						
Turbidity (NTU)		√						
Temperature (°C)		√						

Minimum Monitoring and Reporting of Water Qualities and Flow Rates

	Continuous, every			Once per day	Once per 7-days	Twice per week	Startup & End	Startup, every 30 days, & End
	5-min.	15-min.	4-hrs.					
E. coli enumeration	Frequency based on hydraulic detention time between Secondary Reservoir raw water pumps and splitter box effluent							√
Giardia (cysts/L)	Frequency based on hydraulic detention time between Secondary Reservoir raw water pumps and splitter box effluent							√
Cryptosporidium (oocysts/L)	Frequency based on hydraulic detention time between Secondary Reservoir raw water pumps and splitter box							√
TDS (mg/L)				√				
TSS (mg/L)				√				
Daily flow rate (gpd)				√				
Nitrate (mg/L)				√				√
Alkalinity (mg/L)					√			
TOC (mg/L)					√			
DOC (mg/L)					√			
Chemical listed in §290.106(b) Inorganics Chemicals								√
Chemicals listed in §290.107(b) Organic Chemicals								√
Chemicals listed in §290.108(b)(1) and §290.108(b)(2) & 40 CFR §141.66(d)								√
Chemicals listed in §290.118(b), Secondary Chemicals								√
TTHM (mg/L)					√			
HAA5 (mg/L)					√			
Bromide (mg/L)					√			
Begin Raw Secondary Reservoir Transmission Pipe: First DZ								
Flow rate (gpm)		√						
Chlorine dioxide dosage (mg/L)			√					
pH level			√					

Minimum Monitoring and Reporting of Water Qualities and Flow Rates

	Continuous, every			Once per day	Once per 7-days	Twice per week	Startup & End	Startup, every 30 days, & End
	5-min.	15-min.	4-hrs.					
Temperature (°C)			√					
Quantity of chlorine dioxide used (ppd)				√				
Raw Secondary Reservoir Transmission Pipe: First DZ Monitoring Point								
Flow rate (gpm)		√						
Chlorine dioxide residual (mg/L)			√					
pH level			√					
Temperature (°C)			√					
Raw Secondary Reservoir Transmission Pipe: Second DZ Monitoring Point								
Flow rate (gpm)		√						
Chlorine dioxide residual (mg/L)			√					
pH level			√					
Temperature (°C)			√					
Raw Secondary Reservoir Transmission Pipe: Third DZ Monitoring Point								
Flow rate (gpm)		√						
Chlorine dioxide residual (mg/L)			√					
pH level			√					
Temperature (°C)			√					
Raw Secondary Reservoir Influent to Splitter Box								
Flow rate (gpm)		√						
Turbidity (NTU)			√					
Alkalinity (mg/L)				√				
Nitrate (mg/L)				√				√
Splitter Box Effluent (blended RO Permeate & Secondary Reservoir Raw Water)								
Combined flow rate (gpm)			√					
pH level			√					
Turbidity (NTU)			√					
E. coli enumeration	Frequency based on hydraulic detention time between Splitter box effluent and selected 2010 SWTP filter effluent							√

Minimum Monitoring and Reporting of Water Qualities and Flow Rates

	Continuous, every			Once per day	Once per 7-days	Twice per week	Startup & End	Startup, every 30 days, & End
	5-min.	15-min.	4-hrs.					
Giardia (cysts/L)	Frequency based on hydraulic detention time between Splitter box effluent and selected 2010 SWTP filter effluent							√
Cryptosporidium (oocysts/L)	Frequency based on hydraulic detention time between Splitter box effluent and selected 2010 SWTP filter effluent							√
Nitrate				√				√
Water color				√				
Odor (threshold odor number)				√				
TOC (mg/L)					√			
DOC (mg/L)					√			
TTHM (mg/L)								√
HAA5 (mg/L)								√
Bromide (mg/L)								√
Chemical listed in §290.106(b) Inorganics Chemicals								√
Chemicals listed in §290.107(b) Organic Chemicals								√
Chemicals listed in §290.108(b)(1) radionuclides								√
Chemicals listed in §290.108(b)(2) & 40 CFR §141.66(d) manmade radionuclides								√
Chemicals listed in §290.118(b) Secondary Chemicals								√
Calculated % Change Based on Reported RO Permeate Effluent Levels								
Nitrate change as % reduction (-) or % increase (+)				√				√
TOC change as % reduction (-) or % increase (+)					√			
TTHM change as % reduction (-) or % increase (+)								√
HAA5 change as % reduction (-) or % increase (+)								√
Bromide change as % reduction (-) or % increase (+)								√
Begin Conventional 2010 SWTP DZ								
Flow rate (gpm)		√						
Free chlorine feed pump dosage rate (mg/L)			√					

Minimum Monitoring and Reporting of Water Qualities and Flow Rates

	Continuous, every			Once per day	Once per 7-days	Twice per week	Startup & End	Startup, every 30 days, & End
	5-min.	15-min.	4-hrs.					
Ammonia feed pump dosage rate (mg/L)			√					
Total chlorine residual, after ammonia injection (mg/L)			√					
Monochloramine residual, after ammonia injection (mg/L)			√					
Free chlorine residual, after ammonia injection (mg/L)			√					
Free ammonia residual, after ammonia injection (mg/L)			√					
pH level at monochloramine residual monitoring tap			√					
Water temperature atmonochloramine monitoring tap (°C)			√					
Quantity of chlorine used (ppd)				√				
Quantity of ammonia used (ppd)				√				
Conventional 2010 SWTP Coagulation, Flocculation & Clarification								
Flow rate (gpm)		√						
Influent pH level			√					
Influent alkalinity level (mg/L)			√					
Influent water temperature (°C)			√					
Coagulant feed pump dosage rate (mg/L)			√					
Free chlorine feed pump dosage rate (mg/L)			√					
Ammonia feed pump dosage rate (mg/L)			√					
Calcualted flocculator hydraulic detention time (mins.)			√					
Lime feed rate (ppd)			√					
Calcualted clarifier surface overflow rate (gpm/sf)			√					
Settled water turbidity (NTU)	Frequency based on hydraulic detention time of 2010 SWTp Clarifier							√
Quantity of coagulant used (gpd)				√				
Quantity of lime used (ppd)				√				
Effluent TOC (mg/L)					√			
Effluent DOC (mg/L)					√			
2010 SWTP Recarbonation Basin								
Flow rate (gpm)		√						
Carbon dioxide feed pump dosage rate (mg/L)				√				
pH level				√				
Quantity of carbon dioxide used (ppd)				√				

Minimum Monitoring and Reporting of Water Qualities and Flow Rates

	Continuous, every			Once per day	Once per 7-days	Twice per week	Startup & End	Startup, every 30 days, & End
	5-min.	15-min.	4-hrs.					
Selected 2010 SWTP Gravity Media Filter								
Filtered water turbidity level (NTU)		√						
Flow rate (gpm)			√					
Calculated filter hydraulic loading rate (gpm/sf)			√					
End Conventional 2010 SWTP DZ								
Flow rate		√						
Total chlorine residual (mg/L)		√						
Monochloramine residual (mg/L)		√						
Free chlorine residual (mg/L)		√						
Free ammonia level (mg/L)		√						
pH level		√						
Water temperature (°C)		√						
Begin 2010 SWTP Clearwell DZ								
Free chlorine residual, pre-injection (mg/L)		√						
Free chlorine feed pump dosage rate (mg/L)			√					
Free ammonia residual, pre-injection (mg/L)			√					
Ammonia feed pump dosage rate (mg/L)			√					
Free chlorine residual, after ammonia injection (mg/L)			√					
Free ammonia level, after ammonia injection (mg/L)			√					
Total chlorine residual, after ammonia injection (mg/L)			√					
Monochloramine residual, after ammonia injection (mg/L)			√					
pH level at monochloramine residual monitoring tap			√					
Water temperature at monochloramine residual monitoring tap (°C)			√					
Quantity of chlorine used (ppd)				√				
Quantity of ammonia used (ppd)				√				
Fluoride Adjustment								
Fluoride level, pre-fluosilicic injection (mg/L)				√				
Fluosilicic acid feed pump dosage rate (mg/L)				√				
Quantity of fluosilicic acid used (gpd)				√				

Minimum Monitoring and Reporting of Water Qualities and Flow Rates

	Continuous, every			Once per day	Once per 7-days	Twice per week	Startup & End	Startup, every 30 days, & End
	5-min.	15-min.	4-hrs.					
Finished Water								
Flow rate (gpm)		√						
Turbidity (NTU)		√*						
Turbidity (mNTU)		√*						
Nitrate (mg/L)		√						√
TDS (mg/L)		√						√
E. coli enumeration	Two sample sets with frequencies based on hydraulic detention times between: **1)** WWTP effluent and 2010 Clearwell effluent **2)** Secondary Reservoir raw water pumps and 2010 Clearwell effluent							√
Giardia (cysts/L)	Two sample sets with frequencies based on hydraulic detention times between: **1)** WWTP effluent and 2010 Clearwell effluent **2)** Secondary Reservoir raw water pumps and 2010 Clearwell effluent							√
Cryptosporidium (oocysts/L)	Two sample sets with frequencies based on hydraulic detention times between: **1)** WWTP effluent and 2010 Clearwell effluent **2)** Secondary Reservoir raw water pumps and 2010 Clearwell effluent							√
Daily quantity of water treated (gpd)				√				
Chlorine dioxide (mg/L)				√				
Chlorite (mg/L)				√				
Color (color units)				√				
Odor (threshold odor number)				√				

Minimum Monitoring and Reporting of Water Qualities and Flow Rates

	Continuous, every			Once per day	Once per 7-days	Twice per week	Startup & End	Startup, every 30 days, & End
	5-min.	15-min.	4-hrs.					
Fluoride (mg/L)				√				√
Alkalinity (mg/L)					√			
Hardness as calcium carbonate (mg/L)					√			
Calculated Langelier saturation index (LSI)					√			
TTHM (ug/L)					√			
HAA5 (ug/L)					√			
Lead (mg/L)								√
End 2010 Clearwell DZ								
Total chlorine residual (mg/L)		√						
Monochloramine residual (mg/L)		√						
Free chlorine residual (mg/L)		√						
Free ammonia level (mg/L)		√						
pH level		√						
Water temperature (°C)		√						

* Either a Hach Model 1720E (or TCEQ approved equivalent) or Model 660 FilterTrak turbidimeter may be used for the 15-minute finished water turbidity level monitoring and reporting.

Monitoring and Reporting of Operating Processes

The operating processes marked with a check (√) for monitoring and reporting in Table B below have been included by the TCEQ for the full-scale verification testing of the proposed temporary DPR WTP. This will allow the TCEQ to have a more complete understanding of operating parameters that can interfere with the DPR WTP's ability to continuously produce a safe quality of water.

Table B

Procedures	Each Event
MF/RO Clarifier	
Blowdown duration (mins.)	√
Quantity of water wasted (gals.)	√
MF Membrane Pre-filter	
Selected Unit No. for testing	√
Time since last cleaning (hrs.)	√
Cleaning duration (mins.)	√
Cleaning flow rate (gpm)	√
Cleaning water source	√
Quantity of water used (gals.)	√
MF Membranes Unit	
Selected Unit No. for Testing	√
1) Backwash (BW)	
BW frequency (mins.)	√
BW duration (mins.)	√
BW flow rate (gpm)	√
BW supply pH	√
BW supply temperature (° C)	√
Quantity filtrate used (gals.)	√
2) Chemical Maintenance Clean (MC)	
MC frequency (mins.)	√
MC solution flow rates (gpm)	√
MC soak duration (mins.)	√
MC air flow rate (cfs)	√
MC air flow duration (mins.)	√
MC chemicals used	√
MC chemical concentrations (mg/L)	√
MC solution temperature (° C)	√
MC solution pH	√
MC flush flow rate (gpm)	√
MC flush duration (mins.)	√
Total CEB duration (mins.)	√
Quantity of filtrate used (gals.)	√
Filtrate pH after MC	√

Procedures	Each Event
3) Clean-In-Place (CIP)	
CIP frequency (mins.)	√
CIP solution flow rate (gpm)	√
CIP soak duration (mins.)	√
CIP air flow rate (cfs)	√
CIP air flow duration (mins.)	√
CIP chemicals used	√
CIP chemical concentrations (mg/L)	√
CIP solution temperature (° C)	√
CIP solution pH	√
CIP flush flow rate (gpm)	√
CIP flush duration (mins.)	√
Total CIP duration (mins.)	√
Quantity filtrate used (gals.)	√
Filtrate pH after CIP	√
CIP chemicals used	√
CIP chemical concentrations (mg/L)	√
CIP solution temperature (° C)	√
CIP solution pH	√
CIP flush flow rate (gpm)	√
CIP flush duration (mins.)	√
Total CIP duration (mins.)	√
Quantity filtrate used (gals.)	√
Filtrate pH after CIP	√
4) All Direct Integrity Tests (DIT)	
Starting test pressure (psi)	√
Duration (mins.)	√
Ending test pressure (psi)	√
Deterioration rate (psi/min)	√
Calculated log removal value (LRV_{DIT})	√
5) Repairs & Replacements	√
Module No.	√
Type of repair or replacement	√
Date	√

Monitoring and Reporting of Operating Processes

Procedures	Each Event
RO Membrane Pre-filter	
Selected Unit No. for Testing	√
Duration between cleans (hrs.)	√
Cleaning duration (mins.)	√
Cleaning flow rate (gpm)	√
Cleaning water source	√
Quantity of water used (gals.)	√
RO Membrane Unit	
Selected Unit No. for Testing	√
1) Clean-In-Place (CIP)	
CIP frequency (hrs.)	√
CIP solution flow rate (gpm)	√
CIP soak duration (mins.)	√
CIP air flow rate (cfs)	√
Quantity of water used (gals.)	√
2) RO Membrane Molecular DIT (if applicable)	
Molecular indicator selected	√
Target log removal value (LRV)	√
Required feed solution volume (gals.)	√
Required dosage rate (mg/L)	√
Duration for equilibrium to occur (mins.)	√
Sample size (liters)	√
No. of samples collected	√
Sample frequencies (mins.)	√
Feed sample concentrations (mg/L)	√
Permeate sample concentrations (mg/L)	√
All Calculated LRV_{DIT} Values	√
Quantity of permeate wasted (gals.)	√
3) Repairs & Replacements	
Stage No.	√
Pressure Vessel No.	√
Module No.	√
Type of repair or replacement	√
Date	√

Procedures	Each Event
Conventional SWTP Clarifier	
Blowdown duration (mins.)	√
Quantity of water wasted (gals.)	√
Conventional Media Filters	
Selected Filter No. for Testing	√
BW trigger (time, loss-of-head, turbidity, other)	√
Filter run time (hrs.)	√
BW duration (mins.)	√
BW flow rate (gpm/sf)	√
Quantity of filtered water used (gals.)	√
Filter-to-waste duration (mins.)	√
Filter ripening duration (hrs.)	√
Unit filter run volumes (gals./day)	√

Unregulated Contaminants of Concern

Tables D and E contain are currently unregulated chemical and microbiological contaminants of concern that the TCEQ recommends the system monitor for during the full-scale verification testing.

For monitoring of unregulated contaminants – Table D: Microbials and Table E: Chemicals– the system should identify the analytical methods that they wish to use, and propose those to the TCEQ. If you have any questions concerning this enclosure, please contact Ms. Alicia Diehl by email at Alicia.Diehl @tceq.texas.gov or by telephone at (210) 403-4053.

Table D: Microbials

MICROBIALS	Analytical Methods[1]	Regulated
Viruses[2]		
*Enterovirus	1615	UCMR3[3]
*Norovirus		
Rotavirus	[1]	No[2]
Poliovirus	[1]	No[2]
Echoviruses	[1]	No[2]
Coxsackie viruses group A and B	[1]	No[2]
Adenovirus	[1]	No[2]
Hepatitis A	[1]	No[2]
Protozoans		
Naegleria fowleri	[4]	No
Cyclospora	[4]	No
Microsporidia (fungus)	[4]	No
Bacteria		
Enterococci	1600, 1106	No
Salmonella (and / or Shigella, Campylobacter, Pseudomonas[5])	1200	No
Aeromonas	1605	UCMR1
Heterotrophic plate count (indicator)	9215	No

* Highly recommended for sampling

1 Method listed is an EPA method unless otherwise noted. List of methods is not exhaustive, but is included for reference only. If a method is not listed, the City will need to research and propose a method to TCEQ.

2 Viruses are regulated as a group through treatment technique requirements at treatment plants for the EPA's Surface Water Treatment Rules and Ground Water Rule

3 Unregulated Contaminant Monitoring Rule (UCMR) 3. Regulations cover distribution levels and removal requirements. Regulatory monitoring required, but not an individual health-based standard set.

4 Methods are in development.

Unregulated Contaminants of Concern

Table E: Chemicals

CHEMICALS	Method[1]	Regulated
Disinfection byproducts		
*Nitroso-dimethylamine (NDMA)	521	UCMR3[3]
*Nitroso-pyrolidine (NPYR)		
Organic chemicals		
***Pharmaceutical indicators:** 17-α-ethynylestradiol (ethinyl estradiol), 16-α-hydroxyestradiol (estriol), equilin, estrone, testosterone, 4-androstene-3,17-dione	539	UCMR3[3]
***Chemicals of human origin:** Perfluorooctanesulfonic sulfonate (PFOS), perfluorooctanoic acid (PFOA) perfluorononanoic acid (PFNA) perfluorohexanesulfonic acid (PFHxS) perfluoroheptanoic acid (PFHpA) perfluorobutanesulfonic acid (PFBS)	537	UCMR3[3]
*Sucralose	[2]	No
1,4 dioxane	522	No
Caffeine	1694	No
N,N-Diethyl-meta-toluamide (DEET)	633	No
Gemfibrozil	1694	No
Iopromide	1694	No
Inorganic chemicals		
Perchlorate[4]	314	UCMR2[3]

* Highly recommended for sampling.

1 Method listed is an EPA method unless otherwise noted. List of methods is not exhaustive, but is included for reference only.

2 Acceptable methods exist but have not yet been approved by the EPA. A PWS should propose the method they plan to use.

3 Regulatory monitoring required, but not a health-based standard set.

4 The EPA has indicated that a maximum contaminant level will be promulgated for perchlorate. EPA will be working with stakeholders to develop a maximum contaminant level.

COSTS FOR 45 DAY VERIFICATION TESTING

WWTP Effluent (Pre-Disinfection)				
Test	Frequency	Total Samples	Cost/ Sample	Total Cost
Bromide	Twice/Wk	14	$100	$1,400
HAA	Twice/Wk	14	$180	$2,520
THM	Twice/Wk	14	$90	$1,260
Lead	S/B/E	3	$168	$504
Crypto/Giardia	S/B/E	3	$450	$1,350
Metals	Weekly	7	$213	$1,491
Inorganics *	S/B/E	3	$383	$1,149
Organics *	S/B/E	3	$2,050	$6,150
Secondary Chems	S/B/E	3	$275	$825
290.108(b)(1)&(2)&40 CFR 141.66(d)	S/B/E	3	$417	$1,251
Viruses	S/B/E	3	$2,095	$6,285
PPCP/EDC/Hormones	S/B/E	3	$1,450	$4,350
Fluoridated Alkyl Acids	S/B/E	3	$400	$1,200
Sucralose	S/B/E	3	$250	$750
Perchlorate	S/B/E	3	$200	$600
TOTAL				**$31,085**

Beginning of Effluent Transmission Pipeline Disinfection Zone				
Test	Frequency	Total Samples	Cost/ Sample	Total Cost
Bromide	Weekly	7	$100	$700
TOTAL				**$700**

Filtrate Water of Selected MF Membrane Unit				
Test	Frequency	Total Samples	Cost/ Sample	Total Cost
Crypto/Giardia	S/B/E	3	$450	$1,350
Viruses	S/B/E	3	$2,095	$6,285
TOTAL				**$7,635**

Feed Water of Selected RO Membrane Unit				
Test	Frequency	Total Samples	Cost/ Sample	Total Cost
Silica	S/B/E	3	$15	$45
TOTAL				**$45**

Reject (Concentrate) Water of Selected RO Membrane Unit				
Test	Frequency	Total Samples	Cost/ Sample	Total Cost
Metals	Twice/Wk	14	$213	$2,982
TOTAL				**$2,982**

Filtrate Water of Selected RO Membrane Unit				
Test	Frequency	Total Samples	Cost/ Sample	Total Cost
Bromide	S/B/E	3	$100	$300
HAA	Weekly	7	$180	$1,260
THM	Weekly	7	$90	$630
Crypto/Giardia	S/B/E	3	$450	$1,350
Metals	Weekly	7	$213	$1,491
Inorganics *	S/B/E	3	$383	$1,149
Organics *	S/B/E	3	$2,050	$6,150
Secondary Chems	S/B/E	3	$275	$825
290.108(b)(1)&(2)&40 CFR	S/B/E	3	$417	$1,251
Nitrosamines	S/B/E	3	$400	$1,200
PPCP/EDC/Hormones	S/B/E	3	$1,450	$4,350
Fluoridated Alkyl Acids	S/B/E	3	$400	$1,200
Sucralose	S/B/E	3	$250	$750
Perchlorate	S/B/E	3	$200	$600
Viruses	S/B/E	3	$2,095	$6,285
TOTAL				**$28,791**

Online Testing Equipment				
Test		Total Sites	Cost/ Site	Total Cost
Mono, Free, FAA Analyzer		4	$17,500	$70,000
Total Cl2 Analyzer		4	$4,600	$18,400
Turbidimeter		3	$2,700	$8,100
pH Meter		4	$750	$3,000
Temperature		5	$750	$3,750
TOTAL				**$103,250**

Raw Secondary Reservoir Water (at Secondary Reservoir)				
Test	Frequency	Total Samples	Cost/ Sample	Total Cost
Bromide	Weekly	7	$100	$700
Crypto/Giardia	S/B/E	3	$450	$1,350
Inorganics *	S/B/E	3	$383	$1,149
Organics *	S/B/E	3	$2,050	$6,150
Secondary Chems	S/B/E	3	$275	$825
290.108(b)(1)&(2)&40 CFR 141.66(d)	S/B/E	3	$417	$1,251
PPCP/EDC/Hormones	S/B/E	3	$1,450	$4,350
Fluoridated Alkyl Acids	S/B/E	3	$400	$1,200
Sucralose	S/B/E	3	$250	$750
Perchlorate	S/B/E	3	$200	$600
Viruses	S/B/E	3	$2,095	$6,285
TOTAL				**$24,610**

Splitter Box Effluent (Blended RO Permeate & Secondary Reservoir Raw Water)				
Test	Frequency	Total Samples	Cost/ Sample	Total Cost
Bromide	S/B/E	3	$100	$300
HAA	Weekly	3	$180	$540
THM	Weekly	3	$90	$270
Crypto/Giardia	S/B/E	3	$450	$1,350
Inorganics *	S/B/E	3	$383	$1,149
Organics *	S/B/E	3	$2,050	$6,150
Secondary Chems	S/B/E	3	$275	$825
290.108(b)(1)&(2)&40 CFR 141.66(d)	S/B/E	3	$417	$1,251
Viruses	S/B/E	3	$2,095	$6,285
TOTAL				**$18,120**

Finished Water (Post 2010 Clearwell)				
Test	Frequency	Total Samples	Cost/ Sample	Total Cost
Bromide	S/B/E	3	$100	$300
HAA	Weekly	7	$180	$1,260
THM	Weekly	7	$90	$630
Crypto/Giardia	S/B/E	3	$450	$1,350
Lead	S/B/E	3	$168	$504
Nitrate	S/B/E	3	$100	$300
Viruses	S/B/E	3	$2,095	$6,285
Nitrosamines	S/B/E	3	$400	$1,200
PPCP/EDC/Hormones	S/B/E	3	$1,450	$4,350
Fluoridated Alkyl Acids	S/B/E	3	$400	$1,200
Sucralose	S/B/E	3	$250	$750
Perchlorate	S/B/E	3	$200	$600
TOTAL				**$18,729**

Grand Total for All Testing	**$132,697**

APPENDIX L

Wholesale Water Customers Meeting

Temporary Direct Potable Reuse Project

City of Wichita Falls Texas

Wholesale Customer Meeting

March 28, 2013 10:00 am

Room 500 City Hall

Agenda

Introductions:

Historical Information:

Lake Level Projections:

TCEQ Regulations for IPR, DPR:

Temporary DPR Project:

- Process Flow Diagram:
- Testing Required:
- Public Outreach:
  - Health Board Approval:
  - Health / Safety Coalition Approval:

Timeline:

Questions / Discussion:

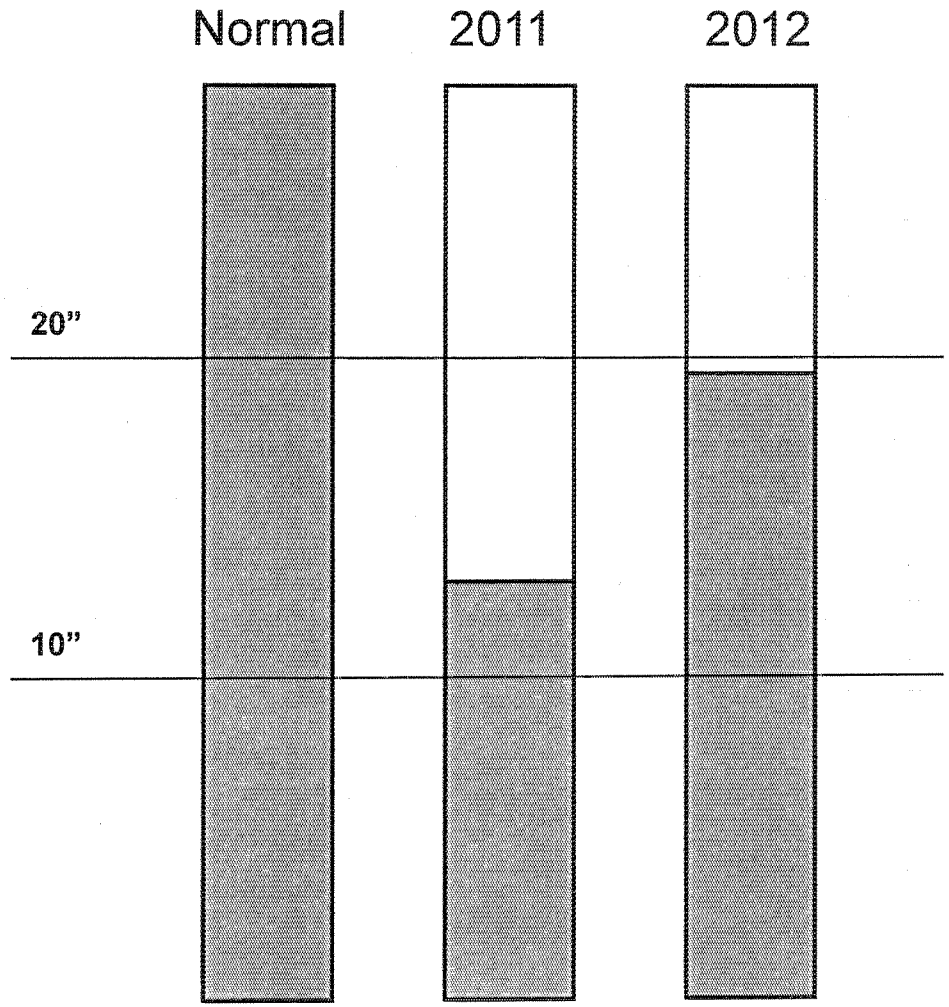
The Current Problem

Loss of Rainfall

The annual average rainfall for the Wichita Falls area is 28.5 inches

In 2011 we were 15.5 inches below normal.

In 2012 we were 8.75 inches below normal.



The Current Problem

Record Temperatures

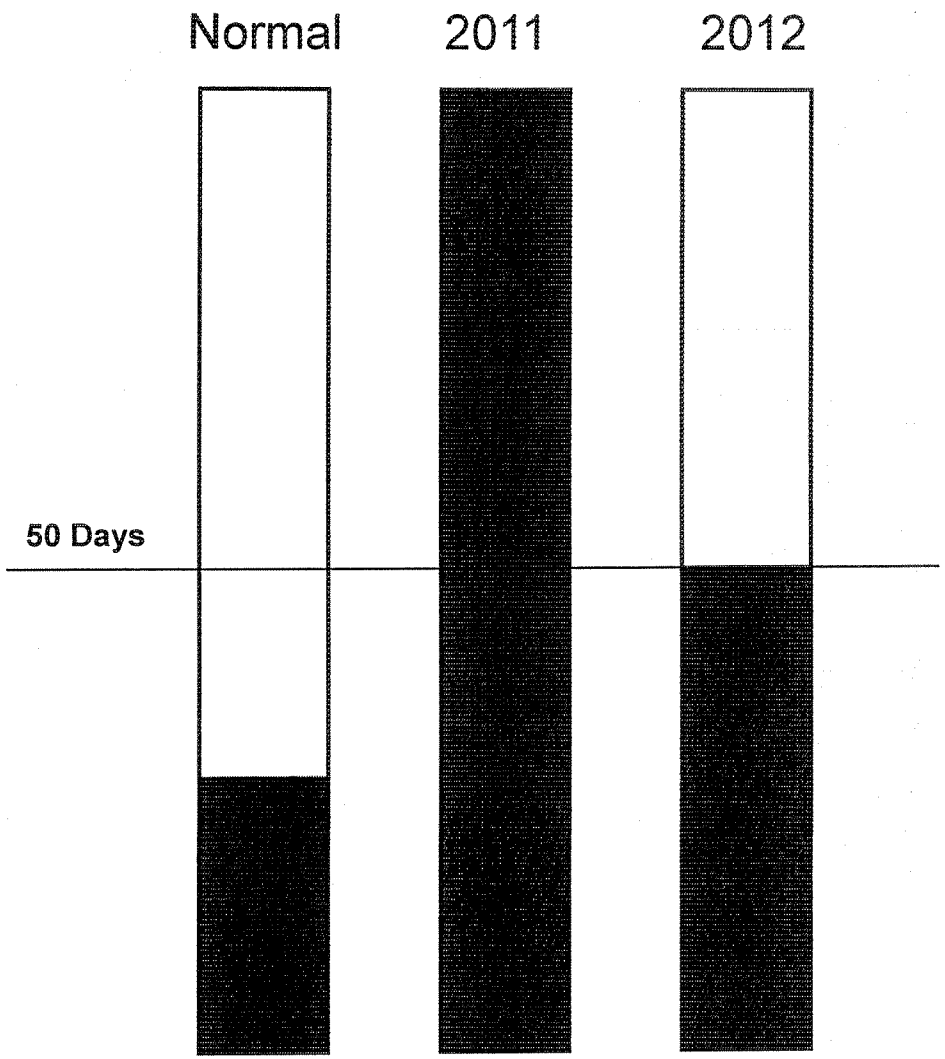
Wichita Falls typically averages 28 days over 100 degrees

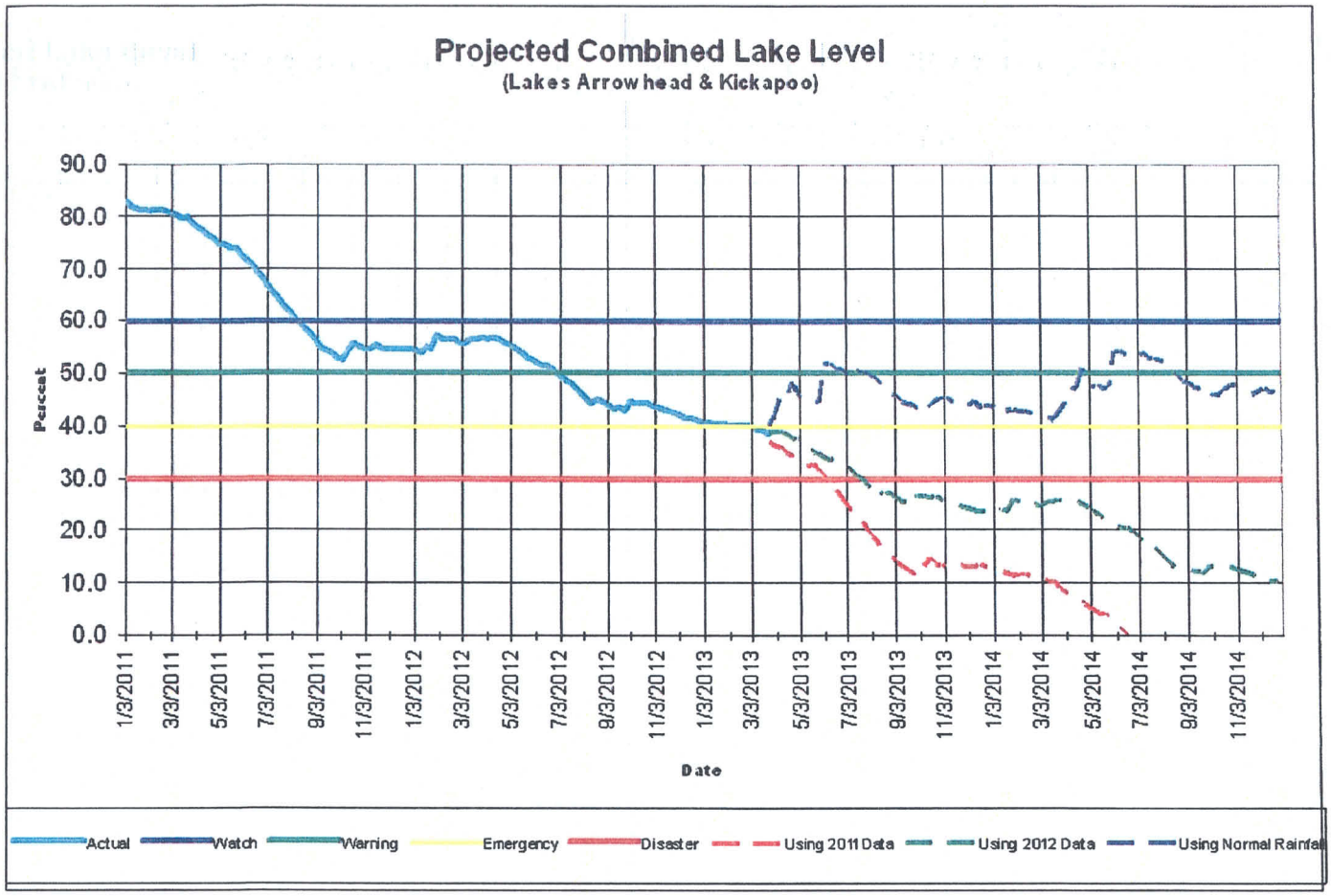
In 2011 we had 100 days.

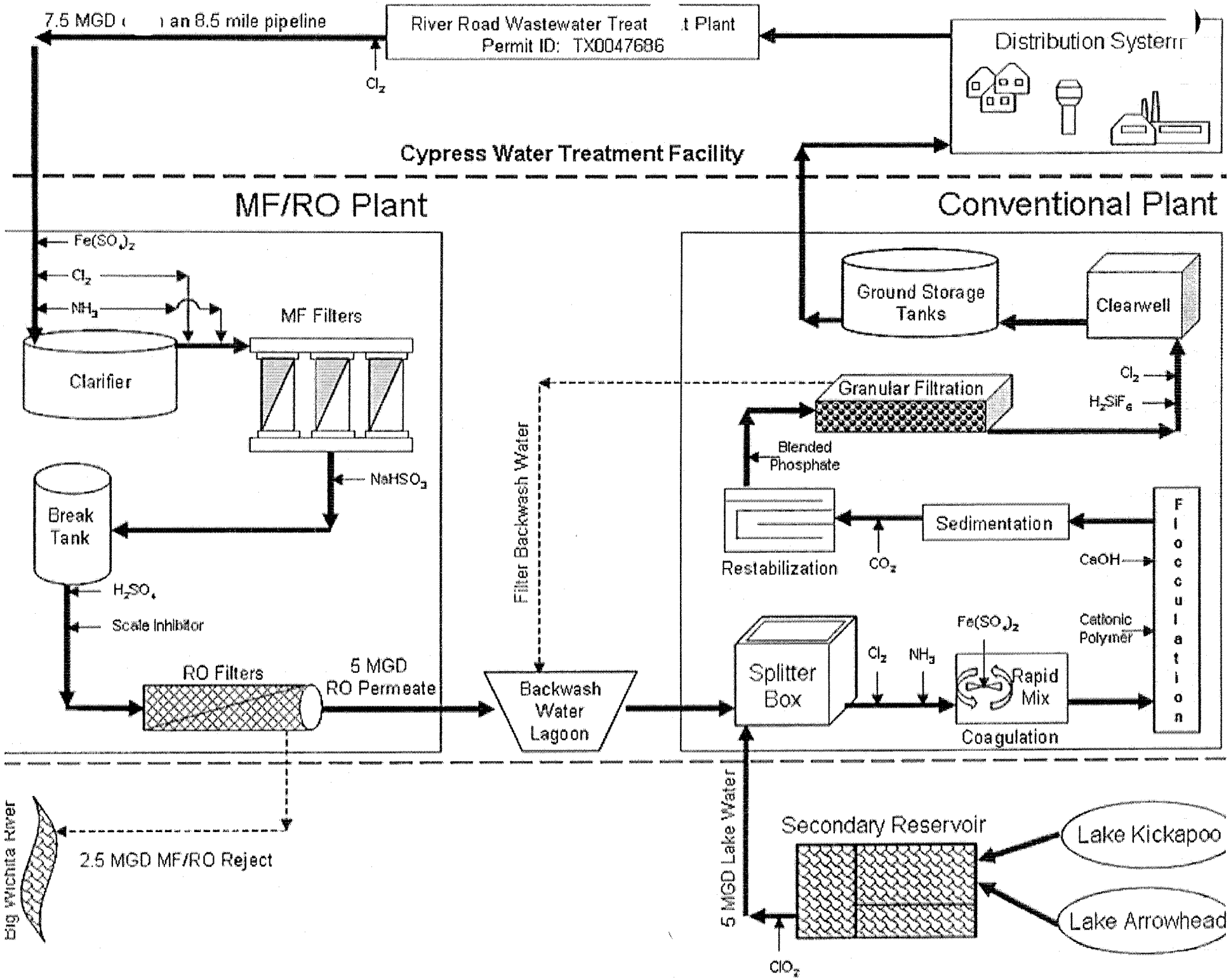
First 100 degree day April 6th, last one was Sept 13th.

The Weather Channel ranked Wichita Falls the #1 Worst Summer anywhere in the U.S. for 2011.

In 2012 we had 50 days.




Projected Combined Lake Level
(Lakes Arrowhead & Kickapoo)
Percent
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
1/3/2011
3/3/2011
5/3/2011
7/3/2011
9/3/2011
11/3/2011
1/3/2012
3/3/2012
5/3/2012
7/3/2012
9/3/2012
11/3/2012
1/3/2013
3/3/2013
5/3/2013
7/3/2013
9/3/2013
11/3/2013
1/3/2014
3/3/2014
5/3/2014
7/3/2014
9/3/2014
11/3/2014
Date
Actual
Watch
Warning
Emergency
Disaster
Using 2011 Data
Using 2012 Data
Using Normal Rainfall


7.5 MGD ( ) an 8.5 mile pipeline
River Road Wastewater Treat t Plant
Permit ID: TX0047686
Cl2
Distribution System
Cypress Water Treatment Facility
MF/RO Plant
Conventional Plant
Fe(SO4)2
Cl2
NH3
MF Filters
Clarifier
NaHSO3
Break Tank
H2SO4
Scale Inhibitor
RO Filters
5 MGD RO Permeate
Filter Backwash Water
Backwash Water Lagoon
Ground Storage Tanks
Clearwell
Granular Filtration
Cl2
H2SiF6
Blended Phosphate
Restabilization
CO2
Sedimentation
CaOH
Flocculation
Splitter Box
Cl2
NH3
Fe(SO4)2
Cationic Polymer
Rapid Mix
Coagulation
Big Wichita River
2.5 MGD MF/RO Reject
5 MGD Lake Water
ClO2
Secondary Reservoir
Lake Kickapoo
Lake Arrowhead

City of Wichita Falls Temporary DPR Project

March 28, 2013

Wholesale Water Customer Meeting

Name	Organization	Phone
Russell Schreiber	City of WF	761-7477
Daniel K. Nix	City of WF	691-1153
Kerry D. Maroney	Biggs & Mathews	940-766-0156
Norm Hodges	Pleasant Valley	851-8518
Sam Bounds	city of Lakeside	691-6603
Jonil Brown	Friberg Cooper	631-9493
Debra Carr	Friberg Cooper Archer County Mud #1	940 733-9758
Sharolyn Link	Friberg-Cooper WSC	940-631-6606
Mike Price	City of Iowa Park	940-631-9121
Marshall Leemann	Council, City of Olney	940.564.5616 (Air Tractor)
DANNY C. PARKER	OLNEY CITY ADMINISTRATOR	940-564-2102

APPENDIX M

Disease Surveillance and Response Program

Wichita Falls-Wichita County Public Health District

Disease Surveillance and Response Program

March 2013

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Disease Surveillance Program Overview 2
Other Surveillance Sources 8

Attachments
Attachment 1: Syndromic Definitions
Attachment 2: Notifiables Conditions Reporting Policy
Attachment 3: Standard Operating Protocol for Managing and Monitoring Data in the NEDSS Base System (NBS)
Attachment 4: Protocol to Evaluate and Respond to Aberration in Normal Data Patterns
Attachment 5: 2013 Texas Notifiable Conditions

Wichita Falls-Wichita County Public Health District
Disease Surveillance Program

Executive Summary

The Wichita Falls-Wichita County Public Health District's (Health District) Nursing Division is the lead unit in managing the jurisdiction's Disease Surveillance Program and works in close collaboration with the Public Health Emergency Preparedness (PHEP) Program. The Disease Surveillance Program uses the following reporting sources for disease surveillance:

- Electronic Syndromic Disease Surveillance,
- Health Care Provider Disease Reporting, and
- Web-based School Influenza Surveillance.

The PHEP program's Public Health Preparedness Specialist (PHPS) monitors the web-based Electronic Syndromic Disease Surveillance system on a daily basis. This surveillance system receives emergency room chief complaint data from local emergency rooms. The system issues alerts when the baseline syndromic thresholds are exceeded. These syndrome categories are respiratory, gastrointestinal, hemorrhagic, botulinic, neurological, and constitutional. All alerts are sent to the Epidemiological Charge Nurse for review and to determine required action. An inquiry to the hospital's Infection Control Practioners (ICPs) is initiated when the alert suggests an unusual expression of disease (for example, a large number of gastrointestinal complaints involving a specific age group). Further action is determined based on the information provided by the ICPs, the syndrome's characteristics (do the symptoms correspond with seasonal trends or is it an unusual expression?), and other factors. Further action may occur if it is determined that the alert is indicating an unusual expression of disease. These measures may include increased surveillance, querying of local health care providers, and coordination/communication with other Health District Divisions or City Departments (to determine further action, such as an integrated response).

Another source of information for the Health District's Disease Surveillance Program is the disease reporting by local health care providers and laboratories. These providers report disease conditions as required under the Texas Notifiable Conditions Reporting program. All of these local disease reports are investigated by the Epidemiological Charge Nurse. The level of response is determined based on the specific disease reported and its characteristics (i.e., mode of transmission, infectivity), number of people involved, etc.

The web-based school influenza surveillance is conducted using a web-based survey program. The program is used by the Health District to gather weekly student absentee data from local school districts in Wichita Falls and Wichita County. This is currently used to monitor influenza and influenza-like illness trends in the local community. However, the survey can be modified to monitor other syndromes (e.g., gastrointestinal), or diseases that require exclusion from childcare facilities and schools. The program is limited by the fact that the reporting is for the previous week and is not occurring in real-time.

The Health District's Disease Surveillance Program brings together several components/tools to ensure the best possible disease surveillance takes place in our jurisdiction. The following information provides a more detailed look at the Disease Surveillance Program.

Disease Surveillance Program Overview

The Health District Disease Surveillance Program uses both passive and active disease surveillance methods. Passive surveillance is a provider-initiated disease reporting method of data collection. Health care providers, as well as laboratories, send reports to the Health District. Active surveillance occurs when select reporting entities are contacted at regular intervals and specifically asked about the occurrence of the diseases under surveillance or for purposes of assessing the occurrence of disease(s) in a community/geographic area. The Health District predominantly uses passive surveillance, but initiates active procedures when investigating or responding to the occurrence of an infectious disease. Active surveillance will take place in the event of a disease outbreak or presence of a condition of public health concern.

Specifically, the Health District Disease Surveillance Program is composed of several components. These pieces include

- Electronic Syndromic Disease Surveillance,
- Health Care Provider Disease Reporting,
- National Electronic Disease Surveillance System (NEDSS), and
- Web-based School Influenza Surveillance.

The disease surveillance components listed above are tools used to monitor for disease outbreaks, unusual expressions of disease and bioterrorism. The Health District's Nursing Division is the lead unit in managing these programs and works in close collaboration with the Public Health Emergency Preparedness (PHEP) Program. The PHEP program staff monitors the web-based electronic syndromic disease surveillance on a daily basis.

The following is a description of each piece of the disease surveillance program.

Electronic Syndromic Disease Surveillance

Electronic syndromic disease surveillance is early disease outbreak detection through the timely collection, analysis, and investigation of health-related data that precedes diagnosis (chief complaints). The premise of syndromic surveillance is that the first sign of serious acute illness in a community might be an unusual number of people seeking care for non-specific symptoms/signs. A "syndrome" is a cluster of signs and symptoms. For example, influenza is characterized by the sudden onset of fever, shivering, chills, dry (non-productive) cough, general malaise, body aches, and sometimes nausea. These symptoms could be caused by influenza or by any number of other upper respiratory tract infections, including the common cold, although flu symptoms tend to be more severe. This type of surveillance is facilitated by using advanced computer/web-based programs that collect real-time data from hospital emergency departments.

The three electronic syndromic surveillance systems monitored by the Health District are the

- Real-time Outbreak and Disease Surveillance (RODS),
- Electronic Surveillance System for Early Notification of Community-based Epidemics (ESSENCE), and
- BioSense 2.0.

These programs are fielded and maintained in our region by the Southwest Center for Advanced Public Health Practice (Tarrant County). The RODS and ESSENCE surveillance network receives data from local public health departments and participating hospitals. The

region also participates in, and provides information to, the Center for Disease Control and Preventions' (CDC) BioSense 2.0 program.

When patients visit hospital emergency departments their chief complaints are recorded electronically. This information is sent immediately to the RODS and ESSENCE surveillance programs through a secure line.

As the information is received, the programs assess and organize the complaints into categories/syndromes (See Attachment 1 for detailed syndrome descriptions). These syndrome categories are

- Respiratory,
- Gastrointestinal,
- Hemorrhagic,
- Botulinic,
- Neurological, and
- Constitutional.

The programs run specific algorithms on the data. This step looks for anomalies by comparing the complaints with the reporting hospitals' baseline data. An alert is issued by ESSENCE and RODS when visits exceed a syndrome's predetermined threshold. These alerts are directly investigated by the Nursing Division's Epidemiology Charge Nurse. The Epidemiology Charge Nurse responds immediately to all alerts by analyzing the data and determining if the alert warrants further investigation. The Epidemiology Charge Nurse looks at alert data details, such as type of syndrome, age groups affected, and the extent of the deviation from the baseline. Infection Control Practitioners (ICPs) from the reporting hospitals are notified to the alert and investigate further if warranted. After the initial investigation is complete, it is determined if further actions are necessary. The ESSENCE program also allows the user to set queries in order to monitor specific chief complaints over a select time period.

The RODS program also collects over-the-counter sales data from participating pharmacies. This feature provides additional information useful in determining if a public health threat exists. The RODS program monitors the following over-the-counter medication sales:

- Antidiarrheal
- Antifever Adult
- Antifever Pediatric
- Baby/Child Electrolytes
- Bronchial Remedies
- Chest Rubs
- Cold Relief Adult Liquid
- Cold Relief Adult Tablet
- Cold Relief Pediatric Liquid
- Cold Relief Pediatric Tablet
- Cough Syrup Adult Liquid
- Cough Adult Tablet
- Cough Syrup Pediatric Liquid
- Cough/Cold
- Nasal Product, Internal
- Rash
- Thermometers
- Throat Lozenges

The RODS program also provides the user with the ability to use different algorithms in analyzing trends. These algorithms are as follows:

- Moving Average

  This is used for detecting sharp spikes in time series that have only mild trends. Moving Average has an alert threshold of 4.08.

- Recursive Least Square

  Ideal for detecting spikes of cases when there is little historical data. RLS has an alert threshold of 4.0.

- Wavelet

  This is useful when there are long term trends in the historical data and there are abrupt changes in the time series. Wavelet has an alert threshold of 4.0.

- CuSum with Exponentially Weighted Moving Average

  This is well-suited for detecting gradual changes in the time series (i.e., slowly developing outbreaks). CuSUM has an alert threshold of 4.08.

As useful as the RODS, ESSENCE, and BioSense 2.0 programs are, they are no substitute for direct disease reporting. The Health District also relies on local health care providers and laboratories to notify us of unusual expressions of disease.

Healthcare Provider Disease Reporting

Several Texas laws (Health and Safety Code) require specific information regarding notifiable conditions be provided to local health departments and the Texas Department of State Health Services (DSHS).

Health care providers, hospitals, laboratories, schools, and others are required to report patients who are suspected of having or have a confirmed notifiable condition (Chapter 97, Title 25 Texas Administrative Code).

State and local public health officials rely on healthcare providers, laboratories, and public health personnel to report the occurrence of notifiable diseases to state and local health departments. Without this data, unusual occurrences of diseases may not be detected, trends can not be accurately monitored, and the effectiveness of intervention activities can not be easily evaluated.

National Electronic Disease Surveillance System

Along with the Texas Department of State Health Services (DSHS), the Health District is an active participant in the National Electronic Disease Surveillance System (NEDSS). Developed by the Centers for Disease Control and Prevention (CDC), NEDSS is a system to improve the public health monitoring of diseases. NEDSS is simply a set of specifications about software, computers, databases, and data and an Internet framework that allows users (e.g., doctors, infection control personnel, local health departments) to report communicable diseases to the DSHS efficiently. With NEDSS, users can quickly discover facts about diseases as they occur and can analyze those facts in detail. NEDSS allows public health professionals to rapidly recognize and respond to disease outbreaks. The CDC intends for all state and local health departments to use NEDSS standards.

The scope of the NEDSS project includes public health disease surveillance data for those conditions on the list of national and state notifiable diseases (see Attachment 4). Some case management data that specifically support public health surveillance activities is also included.

Functions or activities included in NEDSS are:

- Case and disease data collection functions;
- Case detection through the collection of reported health data, including laboratory reports;
- Case verification that a report meets criteria of a new case within the system;
- Data quality assurance and completeness;
- Case investigation data as needed to determine case morbidity status;
- Analysis of thresholds and patterns, including such things as calculation of rates, analyses of trends, assessment of risks and patterns by person, place and time;
- Routine reporting and messaging functions; and
- Data security.

The NEDSS Based System (NBS) is a web-enabled software application, and is secured and protected for use only by pre-authorized personnel.

Notifiable Conditions Reporting and NEDSS Base System Procedures

1. All reports received by telephone, mail, email, in person, or in-house are to be forwarded to the Epidemiology Charge Nurse.
2. An after-hours (24/7/365 basis) on-call system is available to take immediate reports of notifiable conditions. The Health District provides a phone number for anyone reporting a notifiable disease condition. The all-hours phone number is 940.761.7800. During the hours that the Health District is closed, an answering service will immediately notify the Epidemiology Charge Nurse via the on-call cell phone (940.636.7148).
3. The Epidemiology Charge Nurse or designee will be available to answer a disease report call.
4. The Epidemiology Charge Nurse or designee, will identify causes, risk factors, and appropriate interventions for those affected by threats to the public's health; epidemiological investigation shall be initiated within 1 hour of determining that the event is of urgent public health consequence.
5. The Epidemiology Charge Nurse or designee will notify the Nursing Administrator to initiate an investigation. The Nursing Administrator will coordinate with the Director of Health and appropriate division head(s) (i.e., Environmental Health, Laboratory).
6. Provide countermeasures and health guidance to those affected by threats to the public's health.
7. The Epidemiology Charge Nurse or designee will notify the HSR 2/3 Epidemiology Department.
8. All outbreaks or significant investigations will be conducted using an incident command structure.
9. After verifying that a reportable disease is present, the Epidemiology Charge Nurse will enter the information into NEDSS in accordance with NEDSS data entry procedures found in the DSHS Texas NEDSS Procedures Manual.

10. All significant event responses and investigations will result in a written summary and briefing to the Director of Health, Assistant Director of Health, and Nursing Administrator.

Epidemiology Investigation Data Protocols

Epidemiology investigation data protocols can be found in the following:

- Nursing Division's Notifiable Conditions Reporting Policy (see Attachment 1)
- Wichita Falls-Wichita County Public Health District Standard Operating Protocol: Manage and Monitoring Data in NBS (see Attachment 2)
- Wichita Falls-Wichita County Public Health District Protocol to Evaluate and Respond to Aberration in Normal Data Patterns (see Attachment 3)
- Wichita Falls-Wichita County Public Health District Epidemiology Services Quality Assurance Process (see Attachment 4)
- RODS (Retail Over-the-Counter Drug Surveillance)
- Bioterrorism Plan (Annex H: Health and Medical, Appendix 5)
- Pan Flu Plan (Annex H: Health and Medical, Appendix 9)
- Epidemiological Surveillance and Investigation Plan (Annex H: Health and Medical, Appendix 12)
- Isolation and Quarantine Plan (Annex H: Health and Medical, Appendix 13)

Coordination with Environmental Division

The Nursing Division will coordinate with the Environmental Division with specimen analysis, findings and interpretations of the results, interviews and investigations in the following areas:

- Arboviral
- Chemical Events
- Enterics
- Food/Waterborne Outbreaks
- Radiological
- Safe Drinking Water
- Zoonosis

Epidemiological Data (Data Sharing)

1. Data Example

   Any incoming reportable disease lab results being reported by local hospitals and providers on patients living in other surrounding counties will be mailed or faxed to appropriate counties.

   For Wichita Falls-Wichita County's incoming reports, lab will be reviewed, case report form will be filled out, patient interview will be completed and case will be entered in the NEDSS.

2. Description of how data is shared

   Emergency Notification and Communication System accomplished through:

   - Blast fax
   - Email to all or selected specialties, ICPs, health care facilities, etc.
   - Call down of all or selected specialties

Web-based School Influenza Surveillance

A web-based survey program (Survey Monkey™) is used by the Wichita Falls-Wichita County Public Health District to gather weekly student absentee data from local school districts in Wichita Falls and Wichita County. This is currently used to monitor influenza and influenza-like illness trends in the local community. However, the survey can be modified to monitor other syndromes (e.g., gastrointestinal), or diseases that require exclusion from childcare facilities and schools.

The program is administered by the Health District's Nursing Division. Participating school districts in Wichita Falls and Wichita County are provided with their own Survey Monkey™ log-in so they can submit absentee information on a weekly basis.

Functions or activities included in Survey Monkey™ are:

- Wichita Falls-Wichita County Public Health District sends weekly reminders containing the survey link, prompting each school district's participation.
- Each school district provides accurate information on student's absenteeism during a five day school week.
- Wichita Falls-Wichita County Public Health District submits data to Department of State Health Services (DSHS) compiled from the County's multiple school districts.
- Wichita Falls-Wichita County Public Health District provides the participating school districts with weekly data summaries in a graph format.

Supporting the project scope is a Survey Monkey™ service which resides in an external server owned by the service provider. The Survey Monkey™ program is a web-based application, and is secured and protected for use by pre-authorized personnel only.

Investigation data protocols can be found in the following:

- The data is numerical and does not contain any personal identifiers.
- Every school within its school district responds using the web-based survey program.
- Each school district count is then complied into the total for the entire county.
- This data is entered into the web-based survey program using a different link sent by DSHS.

As part of epidemiological surveillance efforts, the Nursing Division keeps the Health District Director of Health and the Assistant Director of Health informed concerning data collected, findings and interpretations of the results, and interviews and investigations. The Public Health Emergency Preparedness (PHEP) program has access to the Survey Monkey™ to monitor trends as part of epidemiological surveillance.

Other Surveillance Sources

The Health District's Divisions and PHEP Program also subscribe to and monitor other information sources. This includes the CDC's Epi-X website. This information exchange is a secure site that provides information on national outbreaks, product recalls, alerts, etc. Another tool is the Texas Public Health Information Network (TXPHIN). This web-based system can be used by all levels to issue advisories or alerts to subscribers. This system has been used to receive advisories or alerts from the CDC and DSHS that are then sent out to local health care providers.

Attachment 1
Syndromic Definitions

GASTROINTESTINAL

Pain or cramps anywhere in the abdomen, nausea, vomiting, diarrhea, and abdominal distension or swelling.

CONSTITUTIONAL

Non-localized, systemic problems including fever, chills, body aches, flu symptoms (viral syndrome), weakness, fatigue, anorexia, malaise, lethargy, sweating (diaphoresis), light headedness, faintness and fussiness.

RESPIRATORY

Problems of the nose (coryza) and throat (pharyngitis), as well as the lungs. Examples of Respiratory include congestion, sore throat, tonsillitis, sinusitis, cold symptoms, bronchitis, cough, shortness of breath, asthma, chronic obstructive pulmonary disease (COPD), and pneumonia. The presence of both cold and flu symptoms is counted in this category, not constitutional.

RASH

Any rash, such as macular, papular, vesicular, petechial, purpuric, or hives. Ulcerations are not counted as Rash unless consistent with cutaneous anthrax (an ulcer with a black eschar).

HEMORRHAGIC

Bleeding from any site, e.g., vomiting blood (hematemesis), nose bleed (epistaxis), hematuria, gastrointestinal bleeding (site unspecified), rectal bleeding, and vaginal bleeding.

BOTULINIC

Ocular abnormalities (diplopia, blurred vision, photophobia), difficulty speaking (dysphonia, dysarthria, slurred speech), and difficulty swallowing (dysphagia).

NEUROLOGICAL

Non-psychiatric complaints that relate to brain function. Included are headache, head pain, migraine, facial pain or numbness, seizure, tremor, convulsion, loss of consciousness, syncope, fainting, ataxia, confusion, disorientation, altered mental status, vertigo, concussion, meningitis, stiff neck, tingling and numbness.

Attachment 2
Notifiables Conditions Reporting Policy

PROGRAM: NURSING SERVICES DATE: 3/19/09

SUBJECT: NOTIFIABLE CONDITIONS REPORTING

NOTIFIABLE CONDITIONS REPORTING

Purpose

The purpose of this policy is to provide procedures for the Wichita Falls-Wichita County Public Health District to report diseases to the Department of State Health Services.

Policy

- All individual morbidity case reports received by the WFWCPHD are confidential records and are not public records.
- To implement disease control measures authorized in this policy, it may be necessary for the WFWCPHD to investigate public or private health records including patient medical records, data, and other information.
- The following notifiable conditions are public health emergencies and suspect cases shall be reported immediately by telephone to the Infectious Disease Surveillance and Epidemiology Branch, DSHS, at (800) 252-8239: anthrax; foodborne botulism; diphtheria; invasive *Haemophilus influenzae* type b infection; measles (rubeola); invasive meningococcal infection; acute paralytic poliomyelitis; plague; rabies; severe acute respiratory syndrome (SARS); smallpox; tularemia; viral hemorrhagic fever; and yellow fever. Vancomycin-intermediate resistant *Staphylococcus aureus* (VISA) and vancomycin-resistant *Staphylococcus aureus* (VRSA) shall also be reported immediately by telephone to the number listed above.
- AIDS, chancroid, *Chlamydia trachomatis* infection, gonorrhea, HIV infection and syphilis are reported to HSR 2/3 DSHS HIV/STD Control Program in Arlington, TX.
- For all other notifiable conditions (attachment 1), reports of the disease will be collected and transmitted to DSHS by telephone, mail or electronic transmission. The report will then be submitted into the NBS system and the hardcopy filed (attachment 2-4). If the report is sent by mail, the reports should be on a form provided by DSHS and placed in a sealed envelope addressed to the attention of the appropriate receiving source and marked "Confidential".
- If a case or an outbreak of a communicable disease is reported to the WFWCPHD and the case resides in another jurisdiction or there is cause to believe transmission may have occurred in another jurisdiction the information will be forwarded to HSR 2/3 or appropriate jurisdiction with all available information. WFWCPHD may assist the appropriate health authority if possible in gathering necessary information.
- WFWCPHD upon notification of a case or report of a disease shall take appropriate action and measures as necessary to reduce morbidity and mortality. This may include

disinfection, environmental sanitation, immunization, chemoprohylaxis, isolation, preventive therapy, quarantine, and education. An investigation shall be completed to verify the diagnosis, determine the source of the causative agent and locate contacts. All information collected will be confidential. Any additional laboratory specimens collected will be submitted for examination. If the reported disease was in a child attending a public or private child-care facility or school, WFWCPHD may notify the owner or operator of the child-care facility or the school administrator.

- Repetitive test results from the same patient do not need to be reported except those for mycobacterial infections.

References:

Texas Administrative Code, Title 25: Part 1, Chapter 97 - Subchapters A and F.

Attachment 3

Standard Operating Protocol for
Managing and Monitoring Data in the NEDSS Base System (NBS)

Wichita Falls-Wichita County Public Health District

Standard Operating Protocol:

Manage and Monitoring Data in NBS

- Check NEDSS for documents requiring review on daily basis.
- Print out lab reports daily from NEDSS.
- Process cases to investigate.
    - Enter into WFWCPHD disease registry
    - Obtain demographics on incomplete cases to determine jurisdiction (hospitals, medical records, providers)
    - Transfer non-WFWCPHD cases to appropriate jurisdiction
    - Verify if case is new, if so assign case to investigator
- Review and resolve requests from DSHS HSR 2/3 regarding information in NBS as soon as possible, not to exceed 10 business days.
- Perform quarterly quality assurance on data entry (data entry should be entered within 30 days of initial receipt).
- Monitor daily for disease trends, clusters and/or outbreaks by reviewing lab reports that are in NBS queue.

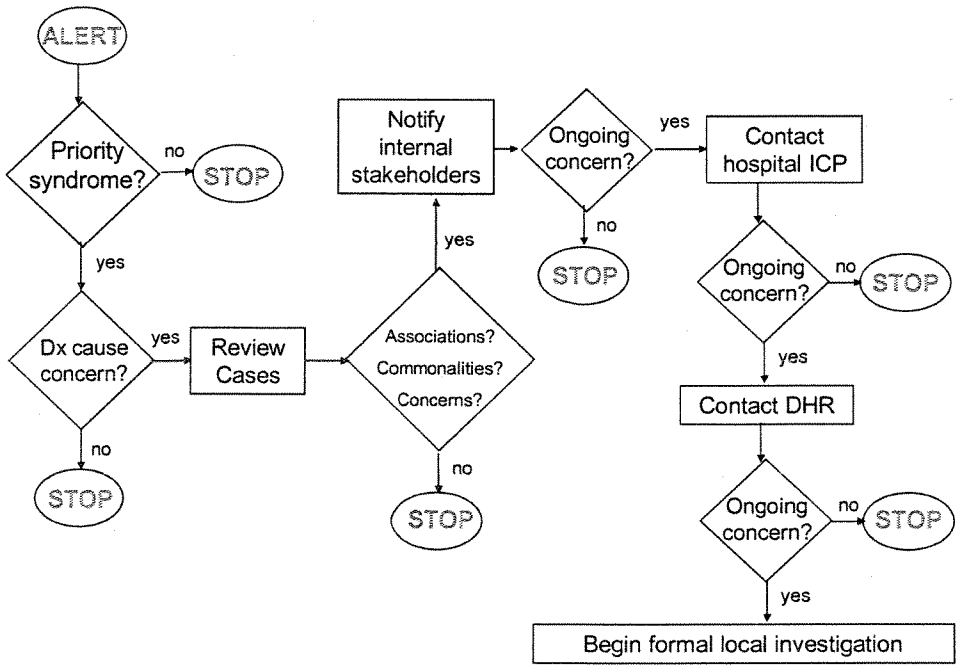
Notify DSHS HSR 2/3 epidemiologist if there is a trend, cluster or outbreak.

Attachment 4

Protocol to Evaluate and Respond to Aberration in Normal Data Patterns

Wichita Falls-Wichita County Public Health District
Protocol to Evaluate and Respond to Aberration in Normal Data Patterns

- Verify data from historical trends and other ongoing surveillance within the jurisdiction.
- Assess aberration on priority syndrome/cause disease.
- Inform Nursing Division Administrator (Administrator will notify Director of Health).
- Consult with Local Health Authority.
- Notify internal stakeholders.
- Contact hospital ICP.
- Begin formal investigation.
- Send out Health Alert Network advisory.
- Periodically advise Nursing Division Administrator of investigation's status.



Attachment 5
2013 Texas Notifiable Conditions

Texas Notifiable Conditions

24/7 Number for Immediately Reportable– 1-800-705-8868
Report confirmed and suspected cases.

Unless noted by *, report to your local or regional health department using number above or find contact information at http://www.dshs.state.tx.us/idcu/investigation/conditions/contacts/

A – I	When to Report	L – Y	When to Report
*Acquired immune deficiency syndrome (AIDS)[1, 2]	Within 1 week	*Lead, child blood, any level & adult blood, any level[6]	Call/Fax immediately
Amebiasis[3]	Within 1 week	Legionellosis	Within 1 week
Amebic meningitis and encephalitis	Within 1 week	Leishmaniasis	Within 1 week
Anaplasmosis	Within 1 week	Listeriosis	Within 1 week
Anthrax[4, 4]	**Call immediately**	Lyme disease	Within 1 week
Arbovirus infection[3, 5]	Within 1 week	Malaria	Within 1 week
*Asbestosis[6]	Within 1 week	**Measles (rubeola)**	**Call immediately**
Babesiosis	Within 1 week	**Meningococcal infections, invasive**	**Call immediately**
Botulism (adult and infant)[4]	**Call immediately**	Mumps	Within 1 week
Brucellosis[3, 4]	**Within 1 work day**	**Pertussis[3]**	**Within 1 work day**
Campylobacteriosis	Within 1 week	*Pesticide poisoning, acute occupational	Within 1 week
*Cancer[7]	See rules	**Plague (*Yersinia pestis*)**	**Call immediately**
Chagas' disease	Within 1 week	**Poliomyelitis, acute paralytic**	**Call immediately**
*Chancroid	Within 1 week	**Poliovirus infection, non-paralytic**	**Within 1 work day**
Chickenpox (varicella)[8]	Within 1 week	**Q fever**	**Within 1 work day**
*Chlamydia trachomatis infection	Within 1 week	**Rabies, human**	**Call immediately**
*Contaminated sharps injury[9]	Within 1 month	Relapsing fever	Within 1 week
***Controlled substance overdose[10]**	**Call immediately**	**Rubella (including congenital)**	**Within 1 work day**
Creutzfeldt-Jakob disease (CJD)	Within 1 week	Salmonellosis, including typhoid fever	Within 1 week
Cryptosporidiosis	Within 1 week	**Severe Acute Respiratory Syndrome (SARS)**	**Call immediately**
Cyclosporiasis	Within 1 week	Shigellosis	Within 1 week
Cysticercosis	Within 1 week	*Silicosis	Within 1 week
*Cytogenetic results (fetus and infant only)[11]	See rules	**Smallpox**	**Call immediately**
Dengue	Within 1 week	*Spinal cord injury[12]	Within 10 work days
Diphtheria	**Call immediately**	Spotted fever group rickettsioses[3]	Within 1 week
*Drowning/near drowning[12]	Within 10 work days	**Staph. aureus, vancomycin-resistant (VISA and VRSA)**	**Call immediately**
Ehrlichiosis	Within 1 week	Streptococcal disease (group A, B, *S. pneumo*), invasive	Within 1 week
Escherichia coli infection, Shiga toxin-producing[3, 4]	Within 1 week	*Syphilis – primary and secondary stages[1, 13]	Within 1 work day
*Gonorrhea	Within 1 week	*Syphilis – all other stages[1, 13]	Within 1 week
Haemophilus influenzae type b infections, invasive[3]	Within 1 week	*Taenia solium* and undifferentiated *Taenia* infection	Within 1 week
Hansen's disease (leprosy)[3]	Within 1 week	Tetanus	Within 1 week
Hantavirus infection[3]	Within 1 week	*Traumatic brain injury	Within 10 work days
Hemolytic Uremic Syndrome (HUS)[3]	Within 1 week	Trichinosis[3]	Within 1 week
Hepatitis A (acute)	**Within 1 work day**	**Tuberculosis (includes all *M. tuberculosis* complex)[4, 14]**	**Within 1 work day**
Hepatitis B, C, and E (acute)[3]	Within 1 week	**Tularemia**	**Call immediately**
Hepatitis B identified prenatally or at delivery (acute & chronic)[3]	Within 1 week	Typhus	Within 1 week
Hepatitis B, perinatal (HBsAg+ < 24 months old)[3]	**Within 1 work day**	**Vibrio infection, including cholera**	**Within 1 work day**
*Human immunodeficiency virus (HIV) infection[1, 2]	Within 1 week	**Viral hemorrhagic fever, including Ebola**	**Call immediately**
Influenza-associated pediatric mortality	**Within 1 work day**	**Yellow fever**	**Call immediately**
Influenza, Novel	**Call immediately**	Yersiniosis[3]	Within 1 week

In addition to specified reportable conditions, ***any outbreak, exotic disease, or unusual group expression of disease that may be of public health concern should be reported*** *by the most expeditious means available*

***See condition-specific footnote for reporting contact information**

[1] Please refer to specific rules and regulations for HIV/STD reporting and who to report to at: http://www.dshs.state.tx.us/hivstd/healthcare/reporting.shtm.
[2] Labs conducting confirmatory HIV testing are requested to send remaining specimen to a CDC-designated laboratory. Please call 512-533-3132 for details.
[3] Reporting forms are available at http://www.dshs.state.tx.us/idcu/investigation/forms/ Investigation forms at http://www.dshs.state.tx.us/idcu/investigation/ Call as indicated for immediately reportable conditions.
[4] Lab isolate must be sent to DSHS lab. Call 512-776-7598 for specimen submission information.
[5] Reportable Arbovirus infections include neuroinvasive and non-neuroinvasive California serogroup including Cache Valley, Eastern Equine (EEE), Dengue, Powassan, St. Louis Encephalitis (SLE), West Nile, and Western Equine (WEE).
[6] Please refer to specific rules and regulations http://www.dshs.state.tx.us/lead/Reporting-Laws-Administrative-Code.aspx.
[7] Please refer to specific rules and regulations for cancer reporting and who to report to at http://www.dshs.state.tx.us/tcr/reporting.shtm.
[8] Varicella reporting form at http://www.dshs.state.tx.us/idcu/health/vaccine_preventable_diseases/forms/New/VaricellaForm.pdf. Call local health dept for copy with their fax number.
[9] Not applicable to private facilities. Initial reporting forms for Contaminated Sharps at http://www.dshs.state.tx.us/idcu/health/infection_control/bloodborne_pathogens/reporting/.
[10] Contact local poison center at 1-800-222-1222. For instructions, forms, and fax numbers see http://www.dshs.state.tx.us/epidemiology/epipoison.shtm#rcso.
[11] Report cytogenetic results including routine karyotype and cytogenetic microarray testing (fetus and infant only). Please refer to specific rules and regulations for birth defects reporting and who to report to at http://www.dshs.state.tx.us/birthdefects/BD_LawRules.shtm.
[12] Please refer to specific rules and regulations for injury reporting and who to report to at http://www.dshs.state.tx.us/injur/rules.shtm.
[13] Laboratories should report syphilis test results within 3 work days of the testing outcome.
[14] MTB complex includes *M. tuberculosis, M. bovis, M. africanum, M. canettii, M. microti, M. caprae, and M. pinnipedii.* Please see rules at http://www.dshs.state.tx.us/idcu/disease/tb/reporting/.

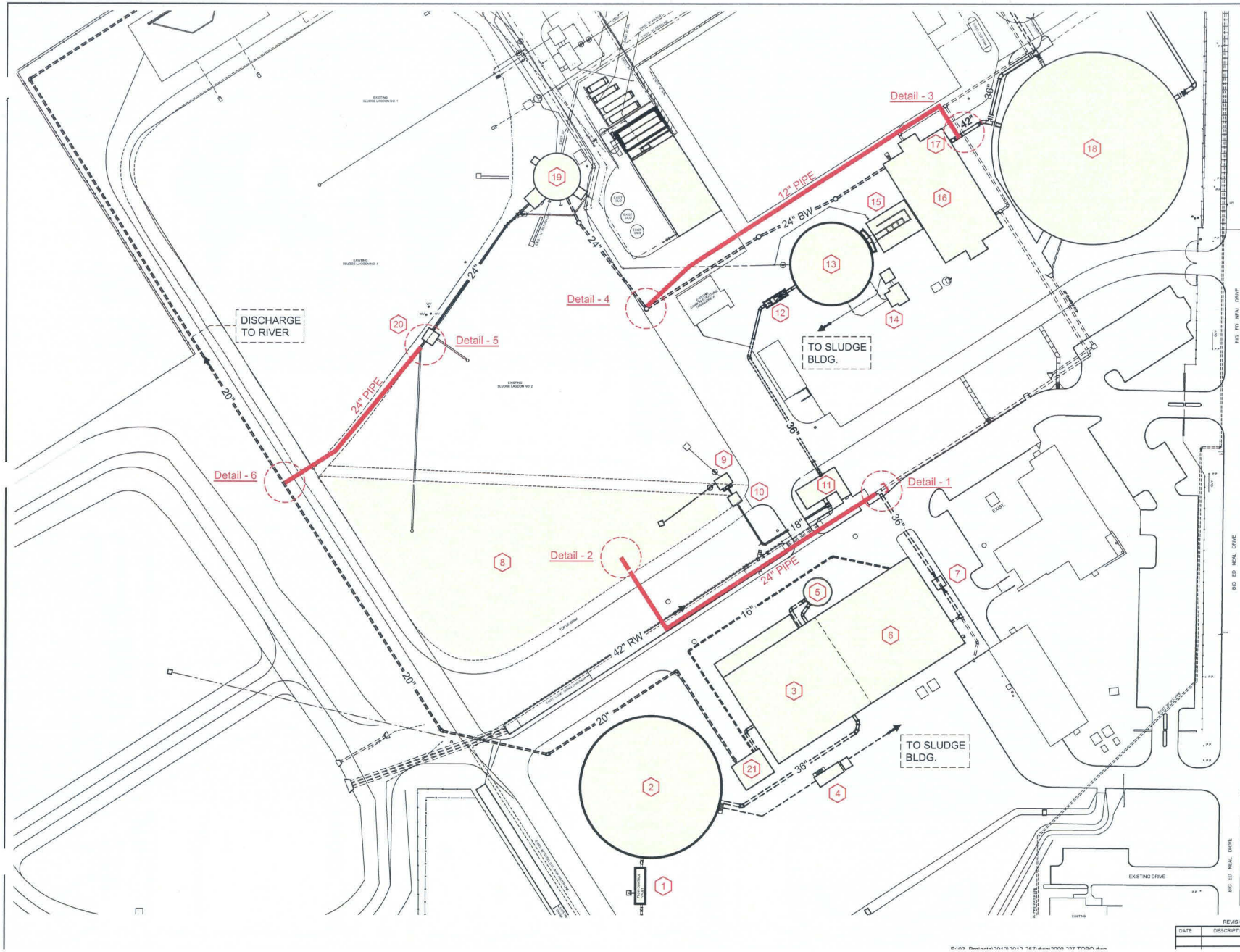
Texas Department of State Health Services – Business Hours 1-800-252-8239 / After Hours 512-776-7111

E59-11364 (Rev. 01/13) Expires 1/31/14 – Go to http://www.dshs.state.tx.us/idcu/investigation/conditions/ or call your local or regional health department for updates.

APPENDIX N

Temporary Site Piping Modifications

Brine Discharge Permit



GRAPHIC SCALE

0 25 50 100

FEET

DPR FACILITIES

1. FLOW CONTROL VAULT
2. MEMBRANE CLARIFIER
3. MF TREATMENT
4. MEMBRANE SLUDGE P.S.
5. BREAK TANK
6. R.O. TREATMENT
7. R.O. METER VAULT
8. REUSE TEMPORARY STORAGE LAGOON
9. REUSE PUMP STATION
10. REUSE FLOW METER
11. SPLITTER BOX
12. 2010 RAPID MIX / PARSHALL FLUME
13. 2010 CLARIFIER
14. 2010 SLUDGE P.S.
15. 2010 RECARBONATION BASIN
16. 2010 FILTERS
17. 2010 TRANSFER PUMPS
18. 2010 10 M.G. STORAGE TANK
19. 2010 RECOVERY WELL P.S.
20. 2010 LAGOON VALVE VAULT
21. BRINE PUMP STATION

TEMPORARY SITE PIPING MODIFICATIONS

TEMPORARY DIRECT POTABLE REUSE TREATMENT FACILITIES

CYPRESS W.T.P.
CITY OF WICHITA FALLS, TEXAS

BIGGS & MATHEWS, INC.
CONSULTING ENGINEERS
2500 BROCK AVENUE
WICHITA FALLS, TX 76301
V: (940) 766-0156
F: (940) 766-3383
TEXAS REGISTERED ENGINEERING FIRM F-634

REVISIONS

DATE	DESCRIPTION

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DW: JMJ
DATE: 2-5-2013
SCALE: AS SHOWN
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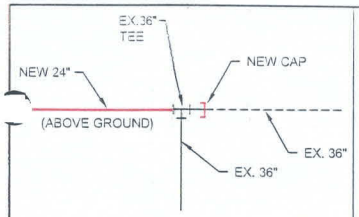

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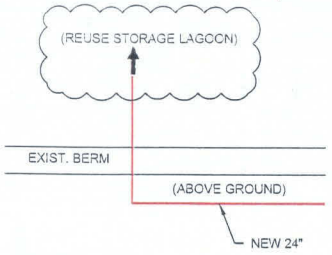

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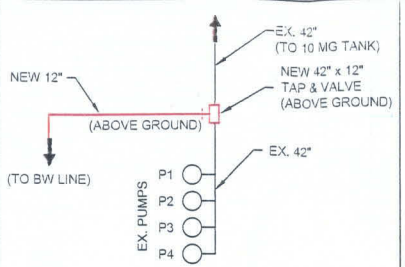

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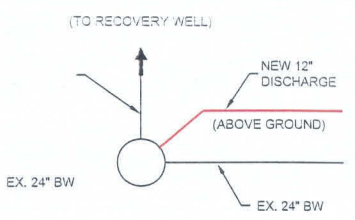

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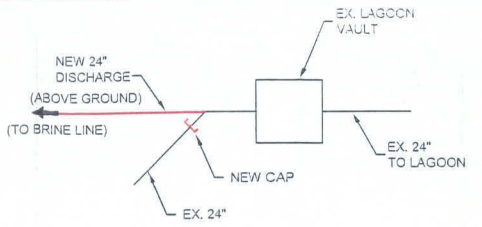

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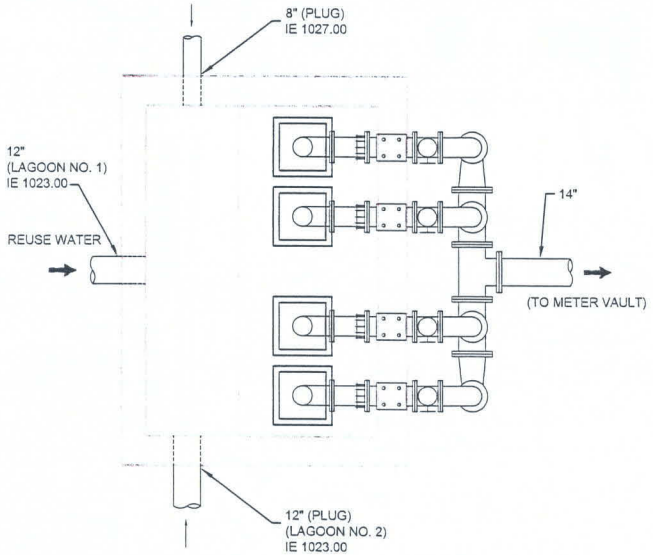

EXISTING REUSE EFFLUENT PUMP STATION

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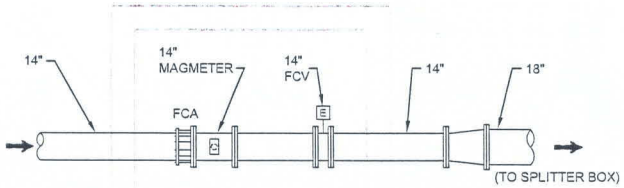

EXISTING METER VAULT PLAN

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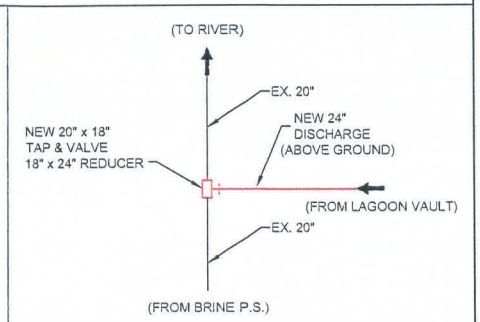
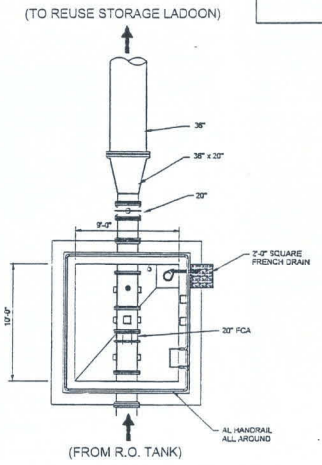


DETAIL-6



EXISTING R.O. METER DETAIL

NOT TO SCALE

TEMPORARY SITE PIPING MODIFICATIONS

TEMPORARY DIRECT POTABLE REUSE TREATMENT FACILITIES

CYPRESS W.T.P.
CITY OF WICHITA FALLS, TEXAS

BIGGS & MATHEWS, INC.
CONSULTING ENGINEERS
2500 BROOK AVENUE V: (940) 766-0156
WICHITA FALLS, TX 76301 F: (940) 766-3383
TEXAS REGISTERED ENGINEERING FIRM F-434

REVISIONS				
DATE	DESCRIPTION	DN: KDM	DATE: 2-5-2013	SHEET 2
		DW: JMJ	SCALE: AS SHOWN	
		CK: KDM	REVISED	

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TPDES PERMIT NO. WQ0004419000
[For TCEQ office use only -
EPA I.D. No. TX0124893]

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
P.O Box 13087
Austin, Texas 78711-3087

This is a renewal of TPDES Permit No. WQ0004419000 issued on February 9, 2006.

PERMIT TO DISCHARGE WASTES
under provisions of
Section 402 of the Clean Water Act
and Chapter 26 of the Texas Water Code

City of Wichita Falls

whose mailing address is

P.O. Box 1431
Wichita Falls, Texas 76307-1431

is authorized to treat and discharge wastes from the Cypress Water Treatment Plant (SIC 4941)

located on the north side of Johnson Road between Barnett Road and Fairway Boulevard, approximately 2100 feet southeast of the intersection of U.S. Highway 82 (Kell Freeway) and Barnett Road, in the southwest section of the City of Wichita Falls, Wichita County, Texas

directly to the Wichita River Below Diversion Lake in Segment No. 0214 of the Red River Basin

only according to effluent limitations, monitoring requirements and other conditions set forth in this permit, as well as the rules of the Texas Commission on Environmental Quality (TCEQ), the laws of the State of Texas, and other orders of the TCEQ. The issuance of this permit does not grant to the permittee the right to use private or public property for conveyance of wastewater along the discharge route described in this permit. This includes, but is not limited to, property belonging to any individual, partnership, corporation, or other entity. Neither does this permit authorize any invasion of personal rights nor any violation of federal, state, or local laws or regulations. It is the responsibility of the permittee to acquire property rights as may be necessary to use the discharge route.

This permit shall expire at midnight on December 1, 2015.

ISSUED DATE: DEC 0 9 2010

For the Commission

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS — Outfall Number 001

1. During the period beginning upon the date of issuance and lasting through the date of expiration, the permittee is authorized to discharge reverse osmosis reject water, ultra and micro filtration backwash water subject to the following effluent limitations:

   The daily average flow of effluent shall not exceed 6.0 million gallons per day (MGD).

Effluent Characteristics	Discharge Limitations			Minimum Self-Monitoring Requirements	
	Daily Average mg/L	Daily Maximum mg/L	Single Grab mg/L	Report Daily Average and Daily Maximum Measurement Frequency	Sample Type
Flow (MGD)	(Report)	(Report)	N/A	Continuous	Record
Total Dissolved Solids (TDS)	N/A	Report	N/A	1/month	Grab
Chloride	N/A	Report	N/A	1/month	Grab
Sulfate	Report	Report	N/A	1/week	Grab

2. The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/week by grab sample.

3. There shall be no discharge of floating solids or visible foam in other than trace amounts and no discharge of visible oil.

4. Effluent monitoring samples shall be taken at the following location: Outfall 001, at the discharge from the "reject" wet well, prior to entering the approximately 2.7-mile-long pipeline that discharges to the Wichita River.

DEFINITIONS AND STANDARD PERMIT CONDITIONS

As required by Title 30 Texas Administrative Code (TAC) Chapter 305, certain regulations appear as standard conditions in waste discharge permits. 30 TAC §§305.121 - 305.129 (relating to Permit Characteristics and Conditions) as promulgated under the Texas Water Code (TWC) §§5.103 and 5.105, and the Texas Health and Safety Code (THSC) §§361.017 and 361.024(a), establish the characteristics and standards for waste discharge permits, including sewage sludge, and those sections of 40 Code of Federal Regulations (CFR) Part 122 adopted by reference by the Commission. The following text includes these conditions and incorporates them into this permit. All definitions in Texas Water Code §26.001 and 30 TAC Chapter 305 shall apply to this permit and are incorporated by reference. Some specific definitions of words or phrases used in this permit are as follows:

1. Flow Measurements

   a. Annual average flow - the arithmetic average of all daily flow determinations taken within the preceding 12 consecutive calendar months. The annual average flow determination shall consist of daily flow volume determinations made by a totalizing meter, charted on a chart recorder, and limited to major domestic wastewater discharge facilities with a one million gallons per day or greater permitted flow.

   b. Daily average flow - the arithmetic average of all determinations of the daily flow within a period of one calendar month. The daily average flow determination shall consist of determinations made on at least four separate days. If instantaneous measurements are used to determine the daily flow, the determination shall be the arithmetic average of all instantaneous measurements taken during that month. Daily average flow determination for intermittent discharges shall consist of a minimum of three flow determinations on days of discharge.

   c. Daily maximum flow - the highest total flow for any 24-hour period in a calendar month.

   d. Instantaneous flow - the measured flow during the minimum time required to interpret the flow measuring device.

   e. 2-hour peak flow (domestic wastewater treatment plants) - the maximum flow sustained for a two-hour period during the period of daily discharge. The average of multiple measurements of instantaneous maximum flow within a two-hour period may be used to calculate the 2-hour peak flow.

   f. Maximum 2-hour peak flow (domestic wastewater treatment plants) - the highest 2-hour peak flow for any 24-hour period in a calendar month.

2. Concentration Measurements

   a. Daily average concentration - the arithmetic average of all effluent samples, composite or grab as required by this permit, within a period of one calendar month, consisting of at least four separate representative measurements.

      i. For domestic wastewater treatment plants - When four samples are not available in a calendar month, the arithmetic average (weighted by flow) of all values in the previous four consecutive month period consisting of at least four measurements shall be utilized as the daily average concentration.

      ii. For all other wastewater treatment plants - When four samples are not available in a calendar month, the arithmetic average (weighted by flow) of all values taken during the month shall be utilized as the daily average concentration.

   b. 7-day average concentration - the arithmetic average of all effluent samples, composite or grab as required by this permit, within a period of one calendar week, Sunday through Saturday.

   c. Daily maximum concentration - the maximum concentration measured on a single day, by the sample type specified in the permit, within a period of one calendar month.

   d. Daily discharge - the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in terms of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the sampling day. For pollutants with limitations expressed in other units of measurement, the "daily discharge" is calculated as the average measurement of the pollutant over the sampling day.

      The "daily discharge" determination of concentration made using a composite sample shall be the concentration of the composite sample. When grab samples are used, the "daily discharge" determination of concentration shall be the arithmetic average (weighted by flow value) of all samples collected during that day.

   e. Bacteria concentration (Fecal coliform, E. coli, or Enterococci) – the number of colonies of bacteria per 100 milliliters effluent. The daily average bacteria concentration is a geometric mean of the values for the effluent samples collected in a calendar month. The geometric mean shall be determined by calculating the nth root of the product of all measurements made in a calendar month, where n equals the number of measurements made; or computed as the antilogarithm of the arithmetic mean of the logarithms of all measurements of made in a calendar month. For any

measurement of bacteria equaling zero, a substitute value of one shall made for input into either computation method. If specified, the 7-day average for bacteria is the geometric mean of the values for all effluent samples collected during a calendar week.

f. Daily average loading (lbs/day) - the arithmetic average of all daily discharge loading calculations during a period of one calendar month. These calculations must be made for each day of the month that a parameter is analyzed. The daily discharge, in terms of mass (lbs/day), is calculated as (Flow, MGD x Concentration, mg/l x 8.34).

g. Daily maximum loading (lbs/day) - the highest daily discharge, in terms of mass (lbs/day), within a period of one calendar month.

3. Sample Type

a. Composite sample - For domestic wastewater, a composite sample is a sample made up of a minimum of three effluent portions collected in a continuous 24-hour period or during the period of daily discharge if less than 24 hours, and combined in volumes proportional to flow, and collected at the intervals required by 30 TAC §319.9 (a). For industrial wastewater, a composite sample is a sample made up of a minimum of three effluent portions collected in a continuous 24-hour period or during the period of daily discharge if less than 24 hours, and combined in volumes proportional to flow, and collected at the intervals required by 30 TAC §319.9 (b).

b. Grab sample - an individual sample collected in less than 15 minutes.

4. Treatment Facility (facility) - wastewater facilities used in the conveyance, storage, treatment, recycling, reclamation and/or disposal of domestic sewage, industrial wastes, agricultural wastes, recreational wastes, or other wastes including sludge handling or disposal facilities under the jurisdiction of the Commission.

5. The term "sewage sludge" is defined as solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in 30 TAC Chapter 312. This includes the solids that have not been classified as hazardous waste separated from wastewater by unit processes.

6. Bypass - the intentional diversion of a waste stream from any portion of a treatment facility.

MONITORING AND REPORTING REQUIREMENTS

1. Self-Reporting

Monitoring results shall be provided at the intervals specified in the permit. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall conduct effluent sampling and reporting in accordance with 30 TAC §§319.4 - 319.12. Unless otherwise specified, a monthly effluent report shall be submitted each month, to the Enforcement Division (MC 224), by the 20th day of the following month for each discharge that is described by this permit whether or not a discharge is made for that month. Monitoring results must be reported on an approved self-report form that is signed and certified as required by Monitoring and Reporting Requirements No. 10.

As provided by state law, the permittee is subject to administrative, civil and criminal penalties, as applicable, for negligently or knowingly violating the Clean Water Act; TCW Chapters 26, 27, and 28; and THSC Chapter 361, including but not limited to knowingly making any false statement, representation, or certification on any report, record, or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance, or falsifying, tampering with or knowingly rendering inaccurate any monitoring device or method required by this permit or violating any other requirement imposed by state or federal regulations.

2. Test Procedures

a. Unless otherwise specified in this permit, test procedures for the analysis of pollutants shall comply with procedures specified in 30 TAC §§319.11 - 319.12. Measurements, tests, and calculations shall be accurately accomplished in a representative manner.

b. All laboratory tests submitted to demonstrate compliance with this permit must meet the requirements of 30 TAC Chapter 25, Environmental Testing Laboratory Accreditation and Certification.

3. Records of Results

a. Monitoring samples and measurements shall be taken at times and in a manner so as to be representative of the monitored activity.

b. Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503), monitoring and reporting records, including strip charts and records of calibration and maintenance, copies of all records required by this permit, records of all data used to complete the application for this permit, and the certification

required by 40 CFR §264.73(b)(9) shall be retained at the facility site, or shall be readily available for review by a TCEQ representative for a period of three years from the date of the record or sample, measurement, report, application or certification. This period shall be extended at the request of the Executive Director.

c. Records of monitoring activities shall include the following:

i. date, time, and place of sample or measurement;
ii. identity of individual who collected the sample or made the measurement.
iii. date and time of analysis;
iv. identity of the individual and laboratory who performed the analysis;
v. the technique or method of analysis; and
vi. the results of the analysis or measurement and quality assurance/quality control records.

The period during which records are required to be kept shall be automatically extended to the date of the final disposition of any administrative or judicial enforcement action that may be instituted against the permittee.

4. Additional Monitoring by Permittee

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit using approved analytical methods as specified above, all results of such monitoring shall be included in the calculation and reporting of the values submitted on the approved self-report form. Increased frequency of sampling shall be indicated on the self-report form.

5. Calibration of Instruments

All automatic flow measuring or recording devices and all totalizing meters for measuring flows shall be accurately calibrated by a trained person at plant start-up and as often thereafter as necessary to ensure accuracy, but not less often than annually unless authorized by the Executive Director for a longer period. Such person shall verify in writing that the device is operating properly and giving accurate results. Copies of the verification shall be retained at the facility site and/or shall be readily available for review by a TCEQ representative for a period of three years.

6. Compliance Schedule Reports

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of the permit shall be submitted no later than 14 days following each schedule date to the Regional Office and the Enforcement Division (MC 224).

7. Noncompliance Notification

a. In accordance with 30 TAC §305.125(9) any noncompliance that may endanger human health or safety, or the environment shall be reported by the permittee to the TCEQ. Report of such information shall be provided orally or by facsimile transmission (FAX) to the Regional Office within 24 hours of becoming aware of the noncompliance. A written submission of such information shall also be provided by the permittee to the Regional Office and the Enforcement Division (MC 224) within five working days of becoming aware of the noncompliance. The written submission shall contain a description of the noncompliance and its cause; the potential danger to human health or safety, or the environment; the period of noncompliance, including exact dates and times; if the noncompliance has not been corrected, the time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance, and to mitigate its adverse effects.

b. The following violations shall be reported under Monitoring and Reporting Requirement 7.a.:

i. Unauthorized discharges as defined in Permit Condition 2(g).
ii. Any unanticipated bypass that exceeds any effluent limitation in the permit.
iii. Violation of a permitted maximum daily discharge limitation for pollutants listed specifically in the Other Requirements section of an Industrial TPDES permit.

c. In addition to the above, any effluent violation that deviates from the permitted effluent limitation by more than 40% shall be reported by the permittee in writing to the Regional Office and the Enforcement Division (MC 224) within 5 working days of becoming aware of the noncompliance.

d. Any noncompliance other than that specified in this section, or any required information not submitted or submitted incorrectly, shall be reported to the Enforcement Division (MC 224) as promptly as possible. For effluent limitation violations, noncompliances shall be reported on the approved self-report form.

8. In accordance with the procedures described in 30 TAC §§35.301 - 35.303 (relating to Water Quality Emergency and Temporary Orders) if the permittee knows in advance of the need for a bypass, it shall submit prior notice by applying for such authorization.

9. Changes in Discharges of Toxic Substances

All existing manufacturing, commercial, mining, and silvicultural permittees shall notify the Regional Office, orally or by facsimile transmission within 24 hours, and both the Regional Office and the Enforcement Division (MC 224) in writing within five (5) working days, after becoming aware of or having reason to believe:

a. That any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant listed at 40 CFR Part 122, Appendix D, Tables II and III (excluding Total Phenols) that is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

i. One hundred micrograms per liter (100 µg/L);
ii. Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
iii. Five (5) times the maximum concentration value reported for that pollutant in the permit application; or
iv. The level established by the TCEQ.

b. That any activity has occurred or will occur that would result in any discharge, on a nonroutine or infrequent basis, of a toxic pollutant that is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

i. Five hundred micrograms per liter (500 µg/L);
ii. One milligram per liter (1 mg/L) for antimony;
iii. Ten (10) times the maximum concentration value reported for that pollutant in the permit application; or
iv. The level established by the TCEQ.

10. Signatories to Reports

All reports and other information requested by the Executive Director shall be signed by the person and in the manner required by 30 TAC §305.128 (relating to Signatories to Reports).

11. All Publicly Owned Treatment Works (POTWs) must provide adequate notice to the Executive Director of the following:

a. Any new introduction of pollutants into the POTW from an indirect discharger that would be subject to CWA §301 or §306 if it were directly discharging those pollutants;

b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit; and

c. For the purpose of this paragraph, adequate notice shall include information on:

i. The quality and quantity of effluent introduced into the POTW; and
ii. Any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

PERMIT CONDITIONS

1. General

a. When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in an application or in any report to the Executive Director, it shall promptly submit such facts or information.

b. This permit is granted on the basis of the information supplied and representations made by the permittee during action on an application, and relying upon the accuracy and completeness of that information and those representations. After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked, in whole or in part, in accordance with 30 TAC Chapter 305, Subchapter D, during its term for good cause including, but not limited to, the following:

i. Violation of any terms or conditions of this permit;
ii. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or
iii. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

c. The permittee shall furnish to the Executive Director, upon request and within a reasonable time, any information to determine whether cause exists for amending, revoking, suspending, or terminating the permit. The permittee shall also furnish to the Executive Director, upon request, copies of records required to be kept by the permit.

2. Compliance

   a. Acceptance of the permit by the person to whom it is issued constitutes acknowledgment and agreement that such person will comply with all the terms and conditions embodied in the permit, and the rules and other orders of the Commission.

   b. The permittee has a duty to comply with all conditions of the permit. Failure to comply with any permit condition constitutes a violation of the permit and the Texas Water Code or the Texas Health and Safety Code, and is grounds for enforcement action, for permit amendment, revocation, or suspension, or for denial of a permit renewal application or an application for a permit for another facility.

   c. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit.

   d. The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal or other permit violation that has a reasonable likelihood of adversely affecting human health or the environment.

   e. Authorization from the Commission is required before beginning any change in the permitted facility or activity that may result in noncompliance with any permit requirements.

   f. A permit may be amended, suspended and reissued, or revoked for cause in accordance with 30 TAC §§305.62 and 305.66 and TWC §7.302. The filing of a request by the permittee for a permit amendment, suspension and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

   g. There shall be no unauthorized discharge of wastewater or any other waste. For the purpose of this permit, an unauthorized discharge is considered to be any discharge of wastewater into or adjacent to water in the state at any location not permitted as an outfall or otherwise defined in the Other Requirements section of this permit.

   h. In accordance with 30 TAC §305.535(a), the permittee may allow any bypass to occur from a TPDES permitted facility that does not cause permitted effluent limitations to be exceeded or an unauthorized discharge to occur, but only if the bypass is also for essential maintenance to assure efficient operation.

   i. The permittee is subject to administrative, civil, and criminal penalties, as applicable, under Texas Water Code §§7.051 - 7.075 (relating to Administrative Penalties), 7.101 - 7.111 (relating to Civil Penalties), and 7.141 - 7.202 (relating to Criminal Offenses and Penalties) for violations including, but not limited to, negligently or knowingly violating the federal CWA §§301, 302, 306, 307, 308, 318, or 405, or any condition or limitation implementing any sections in a permit issued under the CWA § 402, or any requirement imposed in a pretreatment program approved under the CWA §§402 (a)(3) or 402 (b)(8).

3. Inspections and Entry

   a. Inspection and entry shall be allowed as prescribed in the TWC Chapters 26, 27, and 28, and THSC Chapter 361.

   b. The members of the Commission and employees and agents of the Commission are entitled to enter any public or private property at any reasonable time for the purpose of inspecting and investigating conditions relating to the quality of water in the state or the compliance with any rule, regulation, permit, or other order of the Commission. Members, employees, or agents of the Commission and Commission contractors are entitled to enter public or private property at any reasonable time to investigate or monitor or, if the responsible party is not responsive or there is an immediate danger to public health or the environment, to remove or remediate a condition related to the quality of water in the state. Members, employees, Commission contractors, or agents acting under this authority who enter private property shall observe the establishment's rules and regulations concerning safety, internal security, and fire protection, and if the property has management in residence, shall notify management or the person then in charge of his presence and shall exhibit proper credentials. If any member, employee, Commission contractor, or agent is refused the right to enter in or on public or private property under this authority, the Executive Director may invoke the remedies authorized in TWC §7.002. The statement above, that Commission entry shall occur in accordance with an establishment's rules and regulations concerning safety, internal security, and fire protection, is not grounds for denial or restriction of entry to any part of the facility, but merely describes the Commission's duty to observe appropriate rules and regulations during an inspection.

4. Permit Amendment and/or Renewal

   a. The permittee shall give notice to the Executive Director as soon as possible of any planned physical alterations or additions to the permitted facility if such alterations or additions would require a permit amendment or result in a violation of permit requirements. Notice shall also be required under this paragraph when:

      i. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in accordance with 30 TAC §305.534 (relating to New Sources and New Dischargers); or

ii. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are subject neither to effluent limitations in the permit, nor to notification requirements in Monitoring and Reporting Requirements No. 9;

iii. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.

b. Prior to any facility modifications, additions, or expansions that will increase the plant capacity beyond the permitted flow, the permittee must apply for and obtain proper authorization from the Commission before commencing construction.

c. The permittee must apply for an amendment or renewal at least 180 days prior to expiration of the existing permit in order to continue a permitted activity after the expiration date of the permit. If an application is submitted prior to the expiration date of the permit, the existing permit shall remain in effect until the application is approved, denied, or returned. If the application is returned or denied, authorization to continue such activity shall terminate upon the effective date of the action. If an application is not submitted prior to the expiration date of the permit, the permit shall expire and authorization to continue such activity shall terminate.

d. Prior to accepting or generating wastes that are not described in the permit application or that would result in a significant change in the quantity or quality of the existing discharge, the permittee must report the proposed changes to the Commission. The permittee must apply for a permit amendment reflecting any necessary changes in permit conditions, including effluent limitations for pollutants not identified and limited by this permit.

e. In accordance with the TWC §26.029(b), after a public hearing, notice of which shall be given to the permittee, the Commission may require the permittee, from time to time, for good cause, in accordance with applicable laws, to conform to new or additional conditions.

f. If any toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under CWA §307(a) for a toxic pollutant that is present in the discharge and that standard or prohibition is more stringent than any limitation on the pollutant in this permit, this permit shall be modified or revoked and reissued to conform to the toxic effluent standard or prohibition. The permittee shall comply with effluent standards or prohibitions established under CWA §307(a)for toxic pollutants within the time provided in the regulations that established those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

5. Permit Transfer

a. Prior to any transfer of this permit, Commission approval must be obtained. The Commission shall be notified in writing of any change in control or ownership of facilities authorized by this permit. Such notification should be sent to the Applications Review and Processing Team (MC 148) of the Water Quality Division.

b. A permit may be transferred only according to the provisions of 30 TAC §305.64 (relating to Transfer of Permits) and 30 TAC §50.133 (relating to Executive Director Action on Application or WQMP update).

6. Relationship to Hazardous Waste Activities

This permit does not authorize any activity of hazardous waste storage, processing, or disposal that requires a permit or other authorization pursuant to the Texas Health and Safety Code.

7. Relationship to Water Rights

Disposal of treated effluent by any means other than discharge directly to water in the state must be specifically authorized in this permit and may require a permit pursuant to Texas Water Code Chapter 11.

8. Property Rights

A permit does not convey any property rights of any sort, or any exclusive privilege.

9. Permit Enforceability

The conditions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstances, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

10. Relationship to Permit Application

The application pursuant to which the permit has been issued is incorporated herein; provided, however, that in the event of a conflict between the provisions of this permit and the application, the provisions of the permit shall control.

11. Notice of Bankruptcy.

a. Each permittee shall notify the executive director, in writing, immediately following the filing of a voluntary or involuntary petition for bankruptcy under any chapter of Title 11 (Bankruptcy) of the United States Code (11 USC) by or against:

i. the permittee;
ii. an entity (as that term is defined in 11 USC, §101(15)) controlling the permittee or listing the permit or permittee as property of the estate; or
iii. an affiliate (as that term is defined in 11 USC, §101(2)) of the permittee.

b. This notification must indicate:

i. the name of the permittee;
ii. the permit number(s);
iii. the bankruptcy court in which the petition for bankruptcy was filed; and
iv. the date of filing of the petition.

OPERATIONAL REQUIREMENTS

1. The permittee shall at all times ensure that the facility and all of its systems of collection, treatment, and disposal are properly operated and maintained. This includes, but is not limited to, the regular, periodic examination of wastewater solids within the treatment plant by the operator in order to maintain an appropriate quantity and quality of solids inventory as described in the various operator training manuals and according to accepted industry standards for process control. Process control, maintenance, and operations records shall be retained at the facility site, or shall be readily available for review by a TCEQ representative, for a period of three years.

2. Upon request by the Executive Director, the permittee shall take appropriate samples and provide proper analysis in order to demonstrate compliance with Commission rules. Unless otherwise specified in this permit or otherwise ordered by the Commission, the permittee shall comply with all applicable provisions of 30 TAC Chapter 312 concerning sewage sludge use and disposal and 30 TAC §§319.21 - 319.29 concerning the discharge of certain hazardous metals.

3. Domestic wastewater treatment facilities shall comply with the following provisions:

a. The permittee shall notify the Municipal Permits Team, Wastewater Permitting Section (MC 148) of the Water Quality Division, in writing, of any facility expansion at least 90 days prior to conducting such activity.

b. The permittee shall submit a closure plan for review and approval to the Land Application Team, Wastewater Permitting Section (MC 148) of the Water Quality Division, for any closure activity at least 90 days prior to conducting such activity. Closure is the act of permanently taking a waste management unit or treatment facility out of service and includes the permanent removal from service of any pit, tank, pond, lagoon, surface impoundment and/or other treatment unit regulated by this permit.

4. The permittee is responsible for installing prior to plant start-up, and subsequently maintaining, adequate safeguards to prevent the discharge of untreated or inadequately treated wastes during electrical power failures by means of alternate power sources, standby generators, and/or retention of inadequately treated wastewater.

5. Unless otherwise specified, the permittee shall provide a readily accessible sampling point and, where applicable, an effluent flow measuring device or other acceptable means by which effluent flow may be determined.

6. The permittee shall remit an annual water quality fee to the Commission as required by 30 TAC Chapter 21. Failure to pay the fee may result in revocation of this permit under TWC §7.302(b)(6).

7. Documentation

For all written notifications to the Commission required of the permittee by this permit, the permittee shall keep and make available a copy of each such notification under the same conditions as self-monitoring data are required to be kept and made available. Except for information required for TPDES permit applications, effluent data, including effluent data in permits, draft permits and permit applications, and other information specified as not confidential in 30 TAC §1.5(d), any information submitted pursuant to this permit may be claimed as confidential by the submitter. Any such claim must be asserted in the manner prescribed in the application form or by stamping the words "confidential business information" on each page containing such information. If no claim is made at the time of submission, information may be made available to the public without further notice. If the Commission or Executive Director agrees with the designation of confidentiality, the

TCEQ will not provide the information for public inspection unless required by the Texas Attorney General or a court pursuant to an open records request. If the Executive Director does not agree with the designation of confidentiality, the person submitting the information will be notified.

8. Facilities that generate domestic wastewater shall comply with the following provisions; domestic wastewater treatment facilities at permitted industrial sites are excluded.

   a. Whenever flow measurements for any domestic sewage treatment facility reach 75% of the permitted daily average or annual average flow for three consecutive months, the permittee must initiate engineering and financial planning for expansion and/or upgrading of the domestic wastewater treatment and/or collection facilities. Whenever the flow reaches 90% of the permitted daily average or annual average flow for three consecutive months, the permittee shall obtain necessary authorization from the Commission to commence construction of the necessary additional treatment and/or collection facilities. In the case of a domestic wastewater treatment facility that reaches 75% of the permitted daily average or annual average flow for three consecutive months, and the planned population to be served or the quantity of waste produced is not expected to exceed the design limitations of the treatment facility, the permittee shall submit an engineering report supporting this claim to the Executive Director of the Commission.

      If in the judgment of the Executive Director the population to be served will not cause permit noncompliance, then the requirement of this section may be waived. To be effective, any waiver must be in writing and signed by the Director of the Enforcement Division (MC 149) of the Commission, and such waiver of these requirements will be reviewed upon expiration of the existing permit; however, any such waiver shall not be interpreted as condoning or excusing any violation of any permit parameter.

   b. The plans and specifications for domestic sewage collection and treatment works associated with any domestic permit must be approved by the Commission, and failure to secure approval before commencing construction of such works or making a discharge is a violation of this permit and each day is an additional violation until approval has been secured.

   c. Permits for domestic wastewater treatment plants are granted subject to the policy of the Commission to encourage the development of area-wide waste collection, treatment, and disposal systems. The Commission reserves the right to amend any domestic wastewater permit in accordance with applicable procedural requirements to require the system covered by this permit to be integrated into an area-wide system, should such be developed; to require the delivery of the wastes authorized to be collected in, treated by or discharged from said system, to such area-wide system; or to amend this permit in any other particular to effectuate the Commission's policy. Such amendments may be made when the changes required are advisable for water quality control purposes and are feasible on the basis of waste treatment technology, engineering, financial, and related considerations existing at the time the changes are required, exclusive of the loss of investment in or revenues from any then existing or proposed waste collection, treatment or disposal system.

9. Domestic wastewater treatment plants shall be operated and maintained by sewage plant operators holding a valid certificate of competency at the required level as defined in 30 TAC Chapter 30.

10. For Publicly Owned Treatment Works (POTWs), the 30-day average (or monthly average) percent removal for BOD and TSS shall not be less than 85%, unless otherwise authorized by this permit.

11. Facilities that generate industrial solid waste as defined in 30 TAC §335.1 shall comply with these provisions:

   a. Any solid waste, as defined in 30 TAC §335.1 (including but not limited to such wastes as garbage, refuse, sludge from a waste treatment, water supply treatment plant or air pollution control facility, discarded materials, discarded materials to be recycled, whether the waste is solid, liquid, or semisolid), generated by the permittee during the management and treatment of wastewater, must be managed in accordance with all applicable provisions of 30 TAC Chapter 335, relating to Industrial Solid Waste Management.

   b. Industrial wastewater that is being collected, accumulated, stored, or processed before discharge through any final discharge outfall, specified by this permit, is considered to be industrial solid waste until the wastewater passes through the actual point source discharge and must be managed in accordance with all applicable provisions of 30 TAC Chapter 335.

   c. The permittee shall provide written notification, pursuant to the requirements of 30 TAC §335.8(b)(1), to the Corrective Action Section (MC 127) of the Remediation Division informing the Commission of any closure activity involving an Industrial Solid Waste Management Unit, at least 90 days prior to conducting such an activity..

   d. Construction of any industrial solid waste management unit requires the prior written notification of the proposed activity to the Registration and Reporting Section (MC 129) of the Permitting and Remediation Support Division. No person shall dispose of industrial solid waste, including sludge or other solids from wastewater treatment processes, prior to fulfilling the deed recordation requirements of 30 TAC §335.5.

   e. The term "industrial solid waste management unit" means a landfill, surface impoundment, waste-pile, industrial furnace, incinerator, cement kiln, injection well, container, drum, salt dome waste containment cavern, or any other structure vessel, appurtenance, or other improvement on land used to manage industrial solid waste.

f. The permittee shall keep management records for all sludge (or other waste) removed from any wastewater treatment process. These records shall fulfill all applicable requirements of 30 TAC Chapter 335 and must include the following, as it pertains to wastewater treatment and discharge:

i. Volume of waste and date(s) generated from treatment process;
ii. Volume of waste disposed of on-site or shipped off-site;
iii. Date(s) of disposal;
iv. Identity of hauler or transporter;
v. Location of disposal site; and
vi. Method of final disposal.

The above records shall be maintained on a monthly basis. The records shall be retained at the facility site, or shall be readily available for review by authorized representatives of the TCEQ for at least five years.

12. For industrial facilities to which the requirements of 30 TAC Chapter 335 do not apply, sludge and solid wastes, including tank cleaning and contaminated solids for disposal, shall be disposed of in accordance with THSC Code Chapter 361.

TCEQ Revision 08/2008

OTHER REQUIREMENTS

1. Violations of daily maximum limitations for the following pollutants shall be reported orally or by facsimile to TCEQ Region 3, within 24 hours from the time the permittee becomes aware of the violation followed by a written report within five working days to TCEQ Region 3 and the Enforcement Division (MC 224): None.

2. The mixing zone is defined as 300 feet downstream and 100 feet upstream from the point of discharge. Chronic toxic criteria apply at the edge of the mixing zone.

3. There shall be no discharge of domestic sewage. All sewage shall be routed to the City of Wichita's River Road Wastewater Treatment Plant (WQ0010509001).

4. Water treatment plant sludge may be disposed of on the site authorized in the TCEQ Sludge Registration No. 730040 or disposed of at an approved landfill. The permittee shall provide 180 days prior notice to the Executive Director of any planned change in the water treatment sludge disposal practice.

   The permittee shall comply with the following sludge requirements:

   a. The permittee shall handle and dispose of water treatment sludge in accordance with the requirements of 30 TAC Section 312.121 and Title 40, Part 257 of the Code of Federal Regulations and all other applicable state and federal regulations to protect public health and the environment from any reasonably anticipated adverse effects due to any toxic pollutants that may be present.

   b. If the permittee generates water treatment sludge and supplies that water treatment sludge to the owner or operator of a Municipal Solid Waste Landfill (MSWLF) for disposal, the permittee shall provide to the owner or operator of the MSWLF appropriate information to insure compliance with the permit for that MSWLF. The permittee shall ensure that the water treatment sludge meets the requirements in 40 CFR Part 258 concerning the quality of the sludge disposed in a municipal solid waste landfill.

   c. The permittee shall report annually to the TCEQ's Enforcement Division (MC-224) and to the Region 4 office in September of each year the following information:

      i. Annual sludge production in dry tons/year.

      ii. For land application:

         (a) Amount of sludge disposed of in dry tons/year.
         (b) Site map depicting on-site disposal area.
         (c) Area of actual application in acres.
         (d) Certification that the water treatment sludge meets the requirements of 40 CFR Part 257 concerning the quality of the sludge being land applied.

      iii. For sludge disposed of in a municipal solid waste landfill:

         (a) Amount of sludge in dry tons/year.
         (b) Date(s) of disposal.
         (c) Identity of hauler and TCEQ transporter registration number.
         (d) Owner and location of disposal site.
         (e) Registration or permit number of disposal facility.
         (f) Certification that the water treatment sludge meets the requirements of 40 CFR Part 258 concerning the quality of the sludge disposed in a MSWLF.

The above records shall be maintained on-site on a monthly basis and shall be made available to the TCEQ upon request.

d. Sludge which has come into contact with reject water from the water treatment unit may not be disposed of on-site.

e. The pH of the sludge and soil mixture shall be 6.5 standard units or greater.

5. The permittee is hereby placed on notice that this permit may be reviewed by the TCEQ after the completion of any new intensive water quality survey on Segment No. 0214 of the Red River Basin and any subsequent updating of the water quality model for Segment No. 0214, in order to determine if the limitations and conditions contained herein are consistent with any such revised model. The permit may be amended pursuant to 30 TAC Sections 305.62, as a result of such review.

APPENDIX O

Unregulated Contaminants Information

Wastewater Emerging Contaminants Report

Traditionally, water quality is evaluated by comparing the measured concentration of a particular substance with the respective benchmark values based on drinking water standards (MCL's). There are many chemicals for which no regulated standards in drinking water have been set. California along with other water regulating entities (EPA) are researching non-regulated chemicals, and developing some methods for monitoring the chemicals of emerging concern.

Non-regulated chemicals have been detected in the Wichita Falls wastewater effluent, through our extensive testing on regulated and non-regulated analytes. (See Table 1) The City of Wichita Falls wastewater effluent has detected 44 analytes out of numerous compounds tested. The following paragraphs are descriptions of the non-regulated chemicals that were detected.

- N-acetyl-p-aminophenol (acetaminophen), also known as Tylenol, is a widely used over the counter pain reliever. A 1999 U.S. Geological Survey of 139 streams in thirty states found at least one pharmaceutical in 80 percent of the streams tested, and Acetaminophen (aspirin) was found in 23.8 percent of streams tested. (10) N-acetyl-p-aminophenol is a hydrophilic, uncharged molecule.
- Antipyrine (phenazone) is a compound formerly used as an analgesic (pain reliever) and antipyretic (fever reducer).
- Atenolol is a drug belonging to the group of beta blockers (sometimes written β-blockers), a class of drugs used primarily in cardiovascular diseases.
- Azithromycin (Zithromax, Azithrocin, Zmax, Azin) is an azalide, a subclass of macrolide antibiotics.
- Bezafibrate is a fibrate drug used for the treatment of hyperlipidaemia. It helps to lower LDL cholesterol and triglyceride in the blood, and increase HDL.
- Carbamazepine is an anticonvulsant and mood-stabilizing drug used primarily in the treatment of epilepsy and bipolar disorder, as well as trigeminal neuralgia. Carbamazepine is a hydrophilic, uncharged molecule. It has an excellent removal in RO treatments according to research done from a full-scale application of RO membranes (15).
- Chromium (total & hex) Trivalent chromium (Cr(III) or Cr3+) occurs in trace amounts in foods and waters, and appears to be benign. (21) In contrast, hexavalent chromium (Cr(VI) or Cr6+) is very toxic and mutagenic when inhaled. Cr(VI) has not been established as a carcinogen when in solution, although it may cause allergic contact dermatitis (ACD). (22)
- Cotinine is a by-product of nicotine metabolism in the liver.
- DEET (N,N-Diethyl-meta-toluamide), the most common active ingredient in insect repellents.
- Diazepam is a benzodiazepine drug known as Valium.
- Diclofenac is a nonsteroidal anti-inflammatory drug (NSAID) taken to reduce inflammation and as an analgesic reducing pain in certain conditions

- Dilantin (Phenytoin) is a commonly used antiepileptic.
- Diltiazem a nondihydropyridine (non-DHP) member of the class of drugs known as calcium channel blockers, used in the treatment of hypertension, angina pectoris, and some types of arrhythmia.
- DCMU (3-(3,4-dichlorophenyl)-1,1-dimethylurea)(Diuron) is an herbicide that inhibits photosynthesis. The RO membranes within our facility (ESPA2) has a 97% rejection rate for Diuron, which is most likely due to the molecular size.
- Estrone is an estrogenic hormone secreted by the ovary as well as adipose tissue with the chemical name of 3-hydroxyestra-1,3,5(10)-triene-17-one. Estrone is one of several natural estrogens, which also include estriol and estradiol.
- Fluoxetine (Prozac) is an antidepressant.
- Galaxolide a polycyclic musk that's used in some perfumes as a fragrance. It is also used in soaps, cosmetics and detergents.
- Gemfibrozil is an oral drug used to lower lipid levels. Is considered moderately hydrophobic in its neutral form.
- Meprobamate is a carbamate derivative which is used as an anxiolytic drug; anti-anxiety and muscle relaxant.
- Naproxen is a nonsteroidal anti-inflammatory drug.
- Nicotine is a potent parasympathomimetic alkaloid found in cigarettes.
- N-Nitrosodimethylqmine (NDMA) a semi-volatile organic chemical an industrial by-product or waste product of several industrial processes. Research has proven that NDMA has been reduced approximately 50% through the reverse osmosis treatment. (9)
- N-Nitrosopyrrolidine (NPYR) is a nitrosamine that may be formed from preservatives in meats during their preparation or in the liver during metabolism.
- Paraxanthine (1,7 – Dimethylxanthine) a psychoactive central nervous system (CNS) stimulant
- Perchlorate is the salts derived from perchloric acid.
- Perfluorooctanoic acid (PFOA) is a synthetic perfluorinated carboxylic acid and fluorosurfactant.
- Perfluoroheptanoic acid (PFHpA) is a breakdown product of stain- and grease-proof coatings on food packaging, couches, carpets.
- Primidone is an anticonvulsant drug. Research has found that Primidone was completely removed through the reverse osmosis treatment. (8)
- Progesterone is a C-21 steroid hormone involved in the female menstrual cycle, pregnancy, and embryogenesis.

- Salicylic acid is a plant hormone and is also a component of Asprin.
- Sucralose is an artificial sweetener.
- Sulfamethizole is a sulfonamide antibiotic.
- Sulfamethoxazole is a sulfonamide bacteriostatic antibiotic. Sulfamethoxazole possesses two ionisable amine groups and it can carry a positive, neutral, or negative charge.
- Sulfasalazine is an oral drug to treat rheumatoid arthritis
- Testosterone (trans) is a steroid hormone from the androgen group. Approximately 7% of testosterone is reduced to 5α-dihydrotestosterone (DHT) by the cytochrome P450 enzyme 5α-reductase,(19) an enzyme highly expressed in male accessory sex organs and hair follicles.(18)
- Tetracycline is a broad spectrum polyketide antibiotic
- Theobromine (Xantheose) is an alkaloid found in chocolate.
- Theophylline is a methylxanthine drug used in therapy for respiratory diseases.
- Tonalide (1-(5,6,7,8-Tetrahydro-3,5,5,6,8,8-hexamethyl-2-naphthalenyl)ethanone) is a very powerful, warm, and radiant musk odor.
- Triclocarban (TCC) (3, 4,4' – trichlorocarbanilide) is an anti-bacterial and anti-fungal that is used in disinfectants, soaps, and other household products. Existing environmental data submitted to EPA under the HPV program shows that TCC is inherently biodegradable and extensively removed during wastewater treatment. This datum indicated that up to 98% of TCC is removed by wastewater treatment plants and the remainder undergoes rapidly photodegradation. TCC that enters wastewater treatment plants is predominantly sequestered into sludge. The degree of degradation in sludge depends on the type of sludge treatment, with greater degradation occurring under aerobic conditions compared to anaerobic conditions. Researchers reported TCC levels in the ppm range for both anaerobically digested sludge (median levels: 27.6±7.2 ppm) and aerobically digested sludge (mean: 18 ppm). (14)
- Trimethoprim is a bacteriostatic antibiotic mainly used in the prophylaxis and treatment of urinary tract infections.
- 17 β-estradiol a sex hormone. Approximately 0.3% of testosterone is converted into estradiol by aromatase (CYP19A1) (20) an enzyme expressed in the brain, liver, and adipose tissues.(18)
- 2, 4, 6 – Trichlorophenol (TCP, phenaclor, Dowicide 2S, Dowcide 2S, omal) is a chlorinated phenol that has been used as a fungicide, herbicide, insecticide, antiseptic, defoliant, and glue preservative.

Calculation of ADI

Through extensive research these non-regulated compounds, can be classified using calculations that the EPA and the state of California has adopted as guidelines for various chemicals. The acceptable daily intake (ADI) is a calculated health based guidance value and is defined as a daily oral exposure to the human population (including sensitive subgroups) that is likely to be free of appreciable health risks over a lifetime.

ADI (mg/kg-d) = NOAEL or LOAEL/UF's

- NOAEL – the highest exposure level at which there is no biologically significant increases in the frequency or severity of adverse effect between the exposed population and its appropriate control. Some effects may be produced at this level, but they are not considered adverse or precursors of adverse effects.

- LOAEL – The lowest exposure level at which there is biologically significant increase in frequency or severity of adverse effects between the exposed population and the appropriate control group.

- UF's – Uncertainty factors, which account for differences in human response to toxicity, uncertainties in the extrapolation of the toxicity data between humans and animals (if animal data are used), as well as other uncertainties associated with data extrapolation.

The Table 2 was created using the non-regulated chemicals found within the wastewater effluent including the following: log K_{ow}, molecular weight, and the ADI calculated by EPA or from cited sources.

Removal Rates based on RO, MF

Speciation of molecules, i.e. changing of their charge as a function of pH, will significantly influence their rejection on the membranes. Charge for most of the thin layer composite RO membranes in neutral solutions is negative, due to the dissociation of sulfonic and carboxylic groups on the membrane's skin. Therefore, increased rejection of negatively charged solutes could be expected due to electrostatic repulsion with the membrane surface (16). Rejections of sulfamethoxazole through RO membranes were high with approximately 95% removal, probably a result of the combination of size exclusion mechanisms (molecular cut off rate) and the repellent electric force between the solutes and the membrane (log K_{ow}). (17)

Physicochemical properties of the chemicals are used to characterize their behavior, molecular weight and octanol-water partition coefficient. Size exclusions based on molecular weight cut off values for RO membranes will remove molecules with molecular weights larger than the cut off rate. The current membranes within our facility are ESPA2 and ESPA4, and have the molecular cut off rates of 54 with a 99.6% removal of NaCl and the ESPA4 have a slightly higher molecular cut off rate with a 99.2% removal of NaCl. (23)

Octanol-water partition coefficient (log K_{ow}) is a coefficient representing the ratio of the solubility of a compound in octanol (a non-polar solvent) to its solubility in water (a polar solvent, hydrophobic and hydrophilic). The higher the K_{ow} value, the more non-polar the compound, thus indicating that they readily adsorb to hydrophobic materials such as membrane surfaces under favorable conditions. Adsorption is driven by hydrophobic interactions, and other physicochemical parameters including dipole moment and dielectric constant.

Within a RO removal rate study, research has shown that RO removal of NDMA is approximately 50%. (9) NDMA has a log K_{ow} value of -0.57, and having the 50% removal rate.

Research has shown that Primidone is completely removed by the RO (8) The log K_{ow} value for Primidone is 0.91 and a molecular weight of 218.25, thus suggesting that any analytes having a molecular weight and a log K_{ow} value equal to or larger than Primidone should also be completely removed by the RO.

Removal Rates based on Dilution

Removal calculations based on dilutions and comparisons to the calculated ADI guidelines have not been projected because of removal rates from the RO have not been verified. However, dilutions of 50% will further reduce the amounts of an unregulated analytes through the process.

Removal Rates based on Conventional Treatment Processes

The conventional water treatment process (coagulation/flocculation sedimentation/filtration) had very low removal efficiencies (0 to 7%) for all the Endocrine Disrupting Chemical's except Di(2-ethylhexyl) phthalate (DEHP), DBP, and DEP that were removed by 53%, 49%, and 46%, respectively. (12) Very little research has been done on the affects of lime softening/pH change on unregulated chemicals. Also, the affects of the chloramines to the compounds hasn't been researched enough to see the breakdown of the chemicals that could possible occur. The verification test will give us the information here to fill in this gap of research.

The removal efficiencies of the different parts to the treatment process: microfiliters, reverse osmosis, 50% dilutions, and then the conventional are important along with the half-life and the chemical makeup of the compounds also. The chemical breakdown of the pharmaceuticals is well known within the human body, but little information is known about the half-life within water. There are many things that can cause breakdown within the environment such as photodegradation, chemical reactions, and just time. The verification test will account for the "unknown" through the plant: the reactions we cannot project, the removal rates we cannot project, the half-life time in the environment, etc.

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UNREGULATED CONTAMINANTS DETECTED

Classification	MIN	MAX	AVG	ADI	Also Found		Reference
Pharmaceuticals				mg/kg - d	Tap	Raw	
Acetaminophen (ug/L)	0	0.011	0.0052	0.34			1, 4
Antipyrine (ug/L)	0	0.004	0.001	0.0284			1, 5
Atenolol (ug/L)	0	0.22	0.13	0.002			1, 2
Azithromycin (ug/L)	0	0.25	0.058	0.011			5
Bezafibrate (ug/L)	0	0.0006	0.00012	0.0086			5
Carbamazepine (ug/L)	0.05	0.35	0.18	0.0028/0.00034			1, 5, 2, 6
Diazepam (ug/L)	0	0.002	0.0006	0.000071/0.001			1, 2, 5
Diclofenac (ug/L)	0	0.077	0.019	0.0005/0.067			1, 2, 5
Dilantin (ug/L)	0.19	0.51	0.41	0.00019			1, 2
Diltiazem (ug/L)	0	0.088	0.017	0.014/0.0017			1, 4, 5
Fluoxetine (Prozac) (ug/L)	0.007	0.035	0.018	0.00097/0.00028/0.0029			1, 2, 4, 5
Gemfibrozil (ug/L)	0	0.3	0.069	0.0013/0.017/0.055			1, 2, 4, 5
Meprobamate (ug/L)	0.41	0.78	0.53	0.0075			1, 2
Naproxen (ug/L)	0	0.036	0.011	0.0063/0.57			1, 2, 5
Paraxanthine (ug/L)	0.026	0.21	0.08			X	
Primidone (ug/L)	0.32	1.1	0.64				
Salicylic acid (ug/L)	0	0.19	0.11		X	X	
Sulfamethizole (ug/L)	0	1	0.2	0.01			1, 5
Sulfamethoxazole (ug/L)	0	1.5	0.27	0.51/0.13/0.01/0.13			1, 2, 4, 5, 6
Sulfasalazine (ug/L)	0	0.042	0.011				
Tetracycline (ug/L)	0	0.93	0.23	0.3			1, 4, 5
Theophylline (ug/L)	0	0.12	0.053	0.006			13
Triclocarban (ug/L)	0.07	0.22	0.12			X	
Trimethoprim (ug/L)	0	0.64	0.16	0.19/0.02/0.0042			1, 2, 4, 5
Personal Care Products							
DEET (ug/L)	0.035	0.197	0.094	0.75/1.8	X	X	1, 6
Galaxolide (ug/L)	0.27	1.2	0.66	0.5			1, 5
Tonalid (ug/L)	0.042	0.13	0.089				
Waste Water Indicators							
Cotinine (ug/L)	0	0.025	0.017	0.00028		X	1, 5
Nicotine (ug/L)	0	0.1	0.043			X	
Sucralose (ug/L)	43	43	43				
Theobromine (ug/L)	0.24	0.86	0.61		X	X	
Endocrine Disrupters							
17beta-Estradiol (ng/L)	0	2.9	0.72	0.00005			1, 2, 3, 5
Estrone (ng/L)	0	30	8.7				
Progesterone (ng/L)	0	0.4	0.18	0.03	X	X	1, 5
trans-Testosterone (ng/L)	0	0.4	0.1	0.002			1, 2
Household Use							
Perfluorooctanoic acid (PFOA) (ng/L)	20	28	22.83	0.0015			1, 3, 6
Perfluoroheptanoic acid (PFHpA) (ng/L)	0	10	2.5			X	
2,4,6-Trichlorophenol (ug/L)	0	0.5	0.13				
Diuron (ug/L)	0.21	0.21	0.21	0.003/0.002			1, 2, 3
Disinfection by-products							
N-Nitrosodimethylamine (NDMA) (ng/L)	0	18	10.25	0.000008		X	1, 3, 6
N-Nitrosopyrrolidine (NPYR) (ng/L)	0	2	0.5				
Perchlorate (ug/L)	0.11	0.21	0.1625	0.007		X	1, 3
Metals							
Chromium (Hex) (ug/L)	0.025	0.08	0.052			X	
Nickel (ug/L)	5	5.5	5.25				

UNREGULATED CONTAMINANTS MOLECULAR WEIGHT

Classification	Molecular Weight	K_{ow}	ADI	Reference
Pharmaceuticals			mg/kg - d	
Acetaminophen	151.17	0.46	0.34	1, 4
Antipyrine	188.226	0.38	0.0284	1, 5
Atenolol	266.336	0.16	0.002	1, 2
Azithromycin	748.984	4.02	0.011	5
Bezafibrate	361.819	4.25	0.0086	5
Carbamazepine	236.269	2.45	0.0028/0.00034	1, 5, 2, 6
Diazepam	284.7	2.82	0.000071/0.001	1, 2, 5
Diclofenac	296.148	4.6	0.0005/0.067	1, 2, 5
Dilantin	252.268	2.47	0.00019	1, 2
Diltiazem	414.519	2.7	0.014/0.0017	1, 4, 5
Fluoxetine (Prozac)	309.33	4.05	0.00097/0.00028/0.0029	1, 2, 4, 5
Gemfibrozil	250.333	4.77	0.0013/0.017/0.055	1, 2, 4, 5
Meprobamate	218.25	0.7	0.0075	1, 2
Naproxen	230.259	3.18	0.0063/0.57	1, 2, 5
Paraxanthine	180.16	-0.22		
Primidone	218.25	0.91		
Salicylic acid	138.12	2.26		
Sulfamethizole	270.333	0.54	0.01	1, 5
Sulfamethoxazole	253.28	0.89	0.51/0.13/0.01/0.13	1, 2, 4, 5, 6
Sulfasalazine	398.394	3.81		
Tetracycline	444.44	-1.3	0.3	1, 4, 5
Theophylline	180.17	-0.02	0.006	13
Triclocarban	315.58	4.9		
Trimethoprim	290.32	0.91	0.19/0.02/0.0042	1, 2, 4, 5
Personal Care Products				
DEET	191.27	2.18	0.75/1.8	1, 6
Galaxolide	258.4	5.43	0.5	1, 5
Tonalide	258.4	5.8		
Waste Water Indicators				
Cotinine	176.22	0.34	0.00028	1, 5
Nicotine	162.23	1		
Sucralose	397.64	-1		
Theobromine	180.16	-0.78		
Endocrine Disrupters				
17beta-Estradiol	272.38	4.01	0.00005	1, 2, 3, 5
Estrone	270.366	3.43		
Progesterone	314.46	4.63	0.03	1, 5
trans-Testosterone	288.42	3.84	0.002	1, 2
Household Use				
Perfluorooctanoic acid (PFOA)	414.07	6.3	0.0015	1, 3, 6
Perfluoroheptanoic acid (PFHpA)	364.06	5.33		
2,4,6-Trichlorophenol	197.445	3.69		
Diuron	233.09	2.68	0.003/0.002	1, 2, 3
Disinfection by-products				
N-Nitrosodimethylamine (NDMA)	74.08	-0.57	0.000008	1, 3, 6
N-Nitrosopyrrolidine (NPYR)	100.12	-0.104		
Perchlorate	301.4	-4.63	0.007	1, 3