

Water Supply Division

Sign Off Sheet



Entity Name: Wichita Falls

Reviewer: Red Weddell

Team:

Agency Received Date: 9/23/13

Due Date: ASAP

PWS ID or 2430001

Log No.:

	File Location and Name:			
		Comments or Legislative Interest:	Date	Initials
		J:\PDW\Business\System\2430001\Exceptions\Internal\2430001-xxxx2013 WF response to DPR PER\Addendiums I_J_K		
	Name	Comments:	Date	Initials
Technical Peer Reviewer	ACD		10/4	
	MEW		10/4	
	Name	Comments:	Date	Initials
Team Leader Management Review	Joel Klumpp		10/6/13	gk
	Vera P.e		10/8	zp
Team Leader Signature for Final Mailout	Joel Klumpp		Date	Initials
		If Section Manager Review is needed, complete applicable portions below:		
Section Manager Management Review	Ada Lichaa	reviewed	10/10	Q-L
Section Manager Signature for Final Mailout	Ada Lichaa		Date	Initials
		(Determination if Division Director approval is necessary will be addressed by the Section Manager)	Date	Initials
Water Supply Division Director	Linda Brookins	Comments:		
	Mailout Date and PDF			

October <>, 2013

Mr. Kerry D. Maroney, P.E.
Biggs & Mathews, Inc.
2500 Brook Avenue
Wichita Falls, Texas 76301

Comment [m1]: I went through and made the spacing the same throughout. If we do not like this way, let me know what you want and I can do a whole document change again.

Comment [acd2]: M – He meant SENTENCE spacing ☺

Re: City of Wichita Falls - Public Water System ID No. 2430001
Addendum I:
Requests for Modifications to TCEQ Conditions for Granted Temporary Exceptions
Requests for Modifications to TCEQ Amendments for a Direct Potable Reuse Full-Scale Verification Test Protocol
Addendum J: Full-Scale Verification Test Protocol – Minimum Monitoring and Reporting of Water Qualities and Flow Rates.
Addendum K: TCEQ July 29, 2013 E-mail
Wichita County, Texas

RN 105598759; CN 600129316

Dear Mr. Maroney:

On September 20, 2013, the Texas Commission on Environmental Quality (TCEQ) received your letter dated September 23, 2013 by e-mail regarding the City of Wichita Falls (City) proposed Cypress Direct Potable Reuse (DPR) Water Treatment Plant (WTP). Your letter requested modifications to the temporary exception conditions and ~~to the TCEQ's amendments~~ to the Full-Scale Verification Test Protocol (Protocol) in the TCEQ's September 5, 2013 letter. On September 13, 2013, you and City staff met with TCEQ Water Supply Division staff in Austin to discuss the TCEQ's September 5, 2013 letter and enclosures. Based on discussions during the September 13, 2013 meeting, your letter of September 23, 2013 contains written requests for modifications of the conditions and amendments in the TCEQ's September 5, 2013 letter.

Comment [JPK3]: I deleted "to the TCEQ's amendments" because I don't think it's necessary to include that phrase

Comment [acd4]:
The way this sentence reads, it sounds like we are acknowledging that the City **required** the TCEQ to make amendments.
Is that what we are saying?
Or is the revision correct?

This letter will henceforth be referred to as the TCEQ's September 5, 2013 letter's Addendum I, and should be referenced in the City's Full-Scale Verification Report as such. It solely clarifies those sections in the TCEQ September 5, 2013 letter and its Enclosure A specifically referenced below.

Attached Addendum J completely replaces the September 5, 2013 letter's Enclosure A: Full-Scale Verification Test Protocol- Minimum Monitoring and Reporting of Water Qualities and Flow Rates in its entirety. All monitoring changes approved in Addendum I are shown highlighted in yellow in Addendum J. Please note that all previous highlighting of cells shown in replaced Table A of Enclosure A has been removed from

Comment [acd5]: The highlighting is removed, not the cells, correct?

Comment [JPK6]: correct

do we have amendments in this letter?

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Addendum J. The only cells highlighted in Addendum J are those changed as a result of the TCEQ's further review after the meeting in Austin between TCEQ WSD staff, you, and City staff on September 13, 2013 and discussed below in Addendum I. Those items previously indicated in replaced Enclosure A and since deleted remain in Addendum J, but are represented as being deleted by striking through the wording and highlighting the cell in yellow. Also, modified descriptions, clarifications, additional parameters to be monitored for, and new monitoring frequencies are highlighted in yellow. All numbering in Addendum J for unchanged parameters is the same as was used in Enclosure A, except for additions, which were inserted at the end of the applicable monitoring location and distinguished with a new identification number. Any monitoring location previously designated in the TCEQ's September 5, 2013 letter by the capital letter "A" is represented in Addenda I and J by the capital letter "J;" for example, the sampling location referred to previously as TCEQ-1A is re-named TCEQ-1J in Addendum J as of the date of this letter and addenda.

Addendum I

In this addendum—Addendum I—we have organized our responses in the same order, and under the same headings, as the City's letter dated September 23, 2013. No implication of approval, agreement, or changes is intended or made based on the wording of the headings.

TCEQ Responses to City of Wichita Falls September 23, 2013 Letter

Items under heading "September 5, 2013 Conditional Letter of Approval Comments:" in the City's letter dated September 23, 2013

Based on the TCEQ Water Supply Division staff's review, we have the following responses:

1. The City questioned the TCEQ's requirement that the microfiltration (MF) membrane unit be taken out of service when its filtrate turbidity level is greater than 0.100 nephelometric turbidity units (NTU) for two consecutive five-minute readings, be repaired as necessary, and pass a TCEQ-approved direct integrity test (DIT) before being placed back in service treating RR WWTP effluent. The City had understood the TCEQ's requirements differently than the TCEQ intended them. The City provided points counter to the TCEQ's justification for the shutdown requirements. These points are responded to below.

The TCEQ will not modify this continuous, on-line indirect integrity test limit in Condition Nos. 6(b), 23 and 24 of the TCEQ's September 5, 2013 letter for automatically removing a MF membrane unit used in the City's proposed temporary DPR WTP from service. Even when operators are on-site at the DPR WTP, if the filtrate turbidity level for a MF membrane unit is greater than 0.100 NTU for two consecutive five-minute readings, that MF membrane unit must be removed from service. Operators must then perform the necessary repairs to the MF membrane unit and/or calibrate the monitoring equipment and the MF membrane unit must pass a TCEQ-approved direct integrity test (DIT) before placing the MF membrane unit back in service.

Data and research indicate that:

Comment [acd7]: I think that by phrasing it this way, we can replace every A with a J... which turns out to be a lot easier than using A when we refer to the 9/23 letter, and J when we refer to Today's letter.

Comment [JPK8]: agree

agree A. L.

Comment [acd9]: Not yet for human consumption in FSV

Comment [acd10]: I don't care if you delete all this.

Either way is fine with me, I just wanted to expand here just to explain a-c if we leave them in.

Comment [JPK11]: I recommend just saying "no" and not going into detail about our reasons why. The more we give the City the more they want to argue our points.

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We should be a little more descriptive maybe. The City references previous TCEQ letters; however

can add why in a word or two

OR incorrectly
need a high-level of justification of why not protective of public health

- a. ~~The RR WWTP effluent has a potential as demonstrated by the City's monitoring results to be a greater public health risk than the City's raw surface water Bin 1 sources and therefore requires a minimum of 5.5 log removal for *Cryptosporidium* and at least a 7.0 log inactivation and removal for *Giardia* to ensure continuous protection of public health. The delay time for an operator to respond to an alarm and then shut down a MF membrane unit does not provide the same additional public health protection needed as that provided by automatic shut-down controls.~~
- b. ~~The TCEQ staff have sufficient data and experience to establish that MF membrane units that have passed a properly conducted DIT can continuously produce filtrate water quality less than 0.100 NTU.~~
- c. ~~If a hollow fiber membrane unit's filtrate turbidity level is greater than 0.150 NTU for two consecutive five minute readings; the unit is experiencing lumen (fiber) failure(s), O-ring failure(s), or in the case of vacuum membranes, a hole(s) in a vacuum line(s) or connection(s). The level of 0.200 NTU proposed by the City for two consecutive five minute readings is excessively higher than the expected turbidity of adequately operating hollow fiber membrane units and shall not be approved by the TCEQ. Also, the federal requirement for Bin 1 systems is less than 0.200 NTU. We cannot approve a level that is higher than that approved by EPA for surface water treatment plants.~~

Comment [m12]: Do we really want to say a - c, or do we just want to say "no" and leave it at that so they can not argue with us further.

Comment [JW13]: I was trying to justify, but looking at their arguments Needs touching.

OR JUST DELETE ALL IF YOU WANT TO.

Comment [acd14]: I am ok if you want to delete a-c but I left it for you to decide.

Comment [JW15]: Don't disagree, BUT that is what Jack had me put in the old Staff Guidance. Of course that is pulled for revision, right?

The City will need to make all physical and operational changes necessary to comply with Condition Nos. 6(b), 23 and 24 in the September 5, 2013 letter during the Full-Scale Verification Test and temporary six-month operation of the Cypress DPR WTP. The City should also ensure that the on-line FilterTrak laser turbidimeters are properly installed and calibrated to prevent incorrect readings from air bubbles or other monitoring equipment problems.

2. No response is required.
3. The City requested clarification language for Condition No. 11 to be modified to include the language from the TCEQ's July 29, 2013 e-mail from Ms. Marlo Berg.

Since the City has discussed this with TCEQ staff in the past and the TCEQ has clarified the TCEQ's meaning for the specified wording in the referenced email, **the TCEQ will not be modifying** the wording of the TCEQ September 5, 2013 letter. However, we have attached the referenced e-mail as Addendum K to our September 5, 2013 letter for documentation that the e-mail does apply.

4. The City requested that the TCEQ acknowledge that the three enclosed engineering drawings (Sheets 4, 5 and 6 of 7) meet the TCEQ's Condition No. 12(g) for the gravity media filter backwash supply during the Full-Scale Verification Test.

The TCEQ **agrees that the City's proposed modifications** shown on your three September 23, 2013 enclosed engineering drawings comply with the TCEQ Condition No. 12(g) to isolate the existing Cypress backwash supply pumps, other SWTPs, and storage tanks from the partially treated RR WWTP effluent, and to use only filtered water from the 2010 SWTP filters during the Full-Scale Verification Test. The use of the

there is no need to
no diff

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your proposed drawings are adequate to meet
water from the 2010 Clearwell will simulate the proposed temporary, six-month DPR WTP operation. Therefore, the TCEQ's Condition No. 12(g) in our September 5, 2013 letter is not changed.
at

5. No response is required.
6. The City expressed displeasure with the TCEQ's justification for the approved log removal credit assigned to the Siemens Memcor S10V MF membranes based on the Challenge Test Log Removal Value (LRV_{C-Test}) in Condition No. 20 in our September 5, 2013 letter.

Comment [acd16]: Their word

The City did not provide any documentation or data that would support a change to this condition. To protect public health, the requirements for the TCEQ to approve a log removal credit for a DPR WTP cannot be less stringent than those required by federal rule for membranes to be used in a SWTP. Therefore, without a new TCEQ-acceptable Challenge Test Report, the TCEQ **cannot consider modifying, and does not modify**, the TCEQ-approved log removal credit of 2.8-log for *Giardia* and *Cryptosporidium* based on the LRV_{C-Test} value for the Siemens Memcor S10V MF membranes.

isn't this redundant?
delete?

Please note that the previously granted log removal credit was based on the TCEQ-approved DIT Log Removal Value (LRV_{DIT}) for membranes installed to treat surface water prior to April 1, 2012. As the TCEQ has informed the City when the City first proposed the Cypress DPR WTP treatment process, the *Giardia* and *Cryptosporidium* log removal credits for the Siemens Memcor S10V MF membranes would be based on the lower of a TCEQ-approved Challenge Test LRV (LRV_{C-Test}) or a TCEQ approved LRV_{DIT}.

Comment [acd17]: ?

may want to cite rule for this

Also, LRV_{C-Test} and LRV_{DIT} are vendor-specific and not type-specific (i.e., MF versus ultrafiltration). In addition, LRV_{DIT} are design and site-specific. The log removal credit a system can receive will always be based on the lower of the TCEQ approved LRV_{C-Test} and a TCEQ-approved LRV_{DIT}, not the higher.

Items under heading "A. Items Requiring TCEQ Action" in the City's September 23, 2013 letter

Your September 23, 2013 letter also included requests for clarification and changes discussed during the September 13, 2013 meeting in Austin for several monitoring parameters, locations and frequencies in Enclosure A: Full-Scale Verification Test Protocol Minimum Monitoring and Reporting of Water Qualities and Flow Rates. As noted above, we have attached Addendum J with this letter **that replaces Enclosure A**. As also noted above, monitoring locations designated with a capital letter "A" in the previous correspondence are designated with a capital letter "J" in the current letter and addenda. These changes include the following:

Comment [JW18]: I moved to introduction area

Comment [acd19]: Not all are changes.

1. The TCEQ has indicated in Addendum J that monitoring for lead under TCEQ-1J-22 is **conditional, not required**, if the analytical method used for lead under TCEQ-1J-15 for "full metal scan" is acceptable by the U.S. Environmental Protection Agency (EPA) for determining compliance with the drinking water requirements. If the laboratory conducting the full metal scan does not use an EPA-acceptable analytical method for

make sure you only include the changes.

drinking water samples, then the City ^{will be} ~~is still~~ ^{/ or will have} required to collect samples in accordance with TCEQ-1J-22 for lead and to submit those samples to a laboratory for analysis using an EPA-acceptable analytical method for drinking water samples.

2. As discussed and requested in your letter, the TCEQ **has changed** all of the references ~~for~~ ^{to} bromate monitoring to bromide. The following TCEQ Sample Sets were modified to require bromide monitoring rather than bromate monitoring:

- a. TCEQ-1J-25;
- b. TCEQ-2J-10_b;
- c. TCEQ-20J-20;
- d. TCEQ-21J-12;
- e. TCEQ-23J-12;
- f. TCEQ-28J-15; and
- g. TCEQ-29J-7.

Comment [m20]: I have in my notes that we took this one out, since it will be the same as 1A (for Bromide)

Comment [JW21]: I do, too, but they have in their letter and looking at enclosure A, it is their addition, so I left in.

However, to verify that the 2010 SWTP Clearwell's effluent does not exceed the maximum contaminant level (MCL) for bromate, the TCEQ **has added bromate** under TCEQ-40J-25 to be monitored once a week along with the other disinfection byproducts.

Comment [JPK22]: Red: please confirm that this number is correct- it looks like 37 to me.

3. The City stated that they had not understood that Enclosure B with the TCEQ's March 4, 2013 e-mail was a list of unregulated chemical and microbiological emerging contaminants of concern that the TCEQ *recommended*—not required—for monitoring. Because of this misunderstanding, the City had included these contaminants in the City's submitted Protocol. During the September 13, 2013 meeting and in your letter, the City requested that most of these contaminants be deleted from Enclosure A for monitoring during the verification testing. As you will note in Addendum J, the TCEQ **has deleted** the following monitoring:

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- a. TCEQ-1J-27 through TCEQ-1J-35;
- b. TCEQ-10J-19 and TCEQ-10J-20;
- c. TCEQ-20J-26 through TCEQ-20J-34;
- d. TCEQ-23J-21 through TCEQ-23J-29;
- e. TCEQ-28J-22 and TCEQ-28J-23; and
- f. TCEQ-40J-27 through TCEQ-40J-35.

It is noted that the City will collect total culturable viruses and perchlorate samples during the verification testing.

4. As requested, the TCEQ **clarified** Addendum J for TCEQ-10J-2 "Effluent flow rate (gpm)" and TCEQ-10J-4 "Selected MF unit's effluent flow rate (gpm)." As noted in the September 13, 2013 meeting, TCEQ-10J-2 was intended to represent the combined MF membrane units' flow rate. Since this is the wrong location for measuring this flow rate, the TCEQ has deleted TCEQ-10J-2 flow measurement and added it to TCEQ 11J as Sample No. 7 "Combined MF unit's effluent flow rate (gpm)."

5. The City requested that the TCEQ justify the requirement for monitoring SDI at location TCEQ-10J-11, and requested that the TCEQ eliminate that monitoring requirement. The TCEQ **did not delete** the silt density index (SDI) monitoring requirement for TCEQ-10J-11 at the effluent of the MF membrane unit or at TCEQ-9J-2 at the influent to the MF membrane unit.

Comment [acd23]: Reference to specific request to justification from City letter

The TCEQ's technical explanation of this requirement is as follows. It is noted that SDI is an indicator of the potential fouling for RO membranes and not MF membranes. However, MF membranes are an industry-accepted method for reducing the SDI of the feed water for RO membranes in order to prevent premature fouling of the RO membranes. *more frequent RO clean-in-place procedures with associated loss of production, and replacement of RO membranes due to irreversible fouling.* The monitoring results at locations TCEQ-9J-2 and TCEQ-10J-11 can be used by the City and the TCEQ to verify that the MF membranes are achieving an acceptable SDI reduction during the verification testing when treating the new source water—RR WWTP effluent.

Comment [acd24]: If we leave it in

Comment [JPK25]: I'm okay with leaving this info in the letter.

6. The City requested that the TCEQ consider changing the monitoring frequency of nitrate at location TCEQ-16J-5, TDS at location 16J-6, and TSS at location 16J-7 to once a day, rather than the TCEQ's required every four hours. The TCEQ **did not change** the monitoring frequency from four hours to once per day. *for the following reasons:*

- a. Wastewater is noted to contain higher levels of chemical contaminants than raw surface water sources and the levels can have high concentration spikes that peak and fall in less than 24 hours.

b. Nitrate has an acute (immediate) health threat and other regulated and unregulated chemical contaminants have actual or potential chronic (long term) health effects. Some other contaminants could have an acute health threat at high concentrations.

c. The City has only one chemical removal barrier for treating the RR WWTP effluent and is blending at a ratio of 1:1 with raw surface water.

d. The TCEQ has not been provided with any monitoring data or modeling for RO membranes that indicates that the City's RO membranes can achieve a 90% reduction in nitrate. Submitted data (from Appendix H of the City's May 2013 Preliminary Engineering Report) indicates that the RR WWTP has had nitrate levels in the effluent from August 1, 2012 through April 3, 2013 ranging from 8.1 milligrams per liter (mg/L) to 53.3 mg/L.

e. The TCEQ has approved a minimal verification test duration for this proposed DPR WTP plant. A large data set is needed to make up for the reduced verification test period.

f. TSS and TDS/conductivity can be acceptable continuous monitoring methods for determining the chemical removal effectiveness of RO membranes.

Comment [m26]: Again, do we want to document this much or do we just want to say no.

Comment [JW27]: Again delete if you want to I am okay with it

Comment [acd28]:

Ok with deletion.

Their argument is that it takes too long to go out there and they don't have the manpower.

Arguably that opens the door to us justifying why we are making them add manpower to do the sampling. Which we do at the end when we say that On Line sampling would be ok with us.

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Comment [acd29]: Just say in

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Comment [JPK30]: I recommend just saying no in this case.

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Please note that the City may use TCEQ-acceptable on-line monitors for nitrate, TDS and TSS. Also, conductivity can be used in lieu of TDS as long as the City uses an acceptable calculation for converting the conductivity to TDS and submits both values for each four-hour sample result.

7. The City requested that the TCEQ justify the requirement for monitoring alkalinity at locations TCEQ-20J-15 and TCEQ-22J-7 and requested that the TCEQ delete the monitoring requirement for the alkalinity level in the RO membrane permeate before Lagoon No. 3 at TCEQ-20J-15 and in the RO membrane permeate at Lagoon No. 3's effluent before blending with the raw surface water at TCEQ-22J-7.
 - a. The TCEQ **did not delete** the requirement to monitor alkalinity once per week in the RO permeate under TCEQ-20J-15. The TCEQ will need complete water quality data for the RO membrane permeate to determine the effect of the RO membrane. *efficiency?*
 - b. The TCEQ **deleted** the requirement to monitor alkalinity once per week under TCEQ-22J-7.
8. The TCEQ **changed** the temperature monitoring frequency for TCEQ-23J-3 to once per day.
9. The TCEQ **changed** the pH monitoring frequency for TCEQ-23J-4 to once per day. As noted in Addendum J, the City **may use** the measured pH levels from TCEQ-~~23A-23J~~-4 monitoring location for TCEQ-24J-2.
10. For the TCEQ-24J Begin Secondary Reservoir raw water (RW) DZ 1 monitoring location only, the TCEQ **changed** the pH and temperature monitoring frequency from once every four hours to once per day in Addendum J.
11. The TCEQ **did not change** the monitoring frequencies for chlorine dioxide, pH and temperature from once every four hours to once per day for the end of RW DZ 2 and RW DZ 3 for TCEQ-25J-1, -2 and -3 and TCEQ-26J-1, 2, and 3, respectively. This data is associated with the adequacy of disinfection, and is therefore critical for determining whether any variation in that adequacy may occur.

As previously discussed in conference calls between the City and the TCEQ, the City must report the lowest inactivation achieved from the six (6) daily four-hour sample sets at all disinfection zones when completing pages 4 and 5 of the Surface Water Monthly Operating Report (SWMOR).
12. The TCEQ has **changed** the monitoring at locations TCEQ-20J, -27J, and -28J in Addendum J to include chlorite monitoring.
13. The TCEQ **changed** the description for TCEQ-36J monitoring location in Addendum J to designate the end of blended disinfection zone 4 (Blended DZ 4) as being after the Conventional 2010 SWTP combined filter effluent (CFE) and prior to the downstream chlorine injection point).
14. The City ~~asked~~ *requested* TCEQ to justify why it was requesting mNTU & NTU measurements for Turbidity at location TCEQ40A. In response, the TCEQ **changed** the units of measurement for turbidity at location TCEQ-40J in Addendum J from milli-NTU to NTU, based on the use of a turbidimeter that records turbidity in NTU.
15. The TCEQ **did not change** the sampling frequency for TDS in Addendum J at location TCEQ-40J-5 so the required frequency remains every 15 minutes. However, it is noted

Comment [acd31]: Here, they asked for justification. We did not provide a lot of detailed justification, do we need to add to our response?

Comment [JPK32]: no

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Comment [JPK33]: Right?

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Comment [acd34]: Ok to delete additional justification here if we are making other deletions of justification details?

Comment [JPK35]: I'm okay with keeping this sentence. Brief justifications look okay to me.

that an on-line monitoring device may be used to collect this data and transmit it to operators through a supervisory control and data acquisition (SCADA) system. It is not anticipated that manual sample collection should be required.

16. The City requested that the TCEQ reduce the required disinfectant monitoring at locations TCEQ-41J and TCEQ-42J from once every eight hours to daily. The TCEQ **did not change** that required monitoring frequency in Addendum J for these monitoring locations. The inactivation must be calculated each time that the disinfectant monitoring occurs. The sample-set values associated with the lowest inactivation must be entered on the SWMOR, pages 4 and 5. All of the eight-hour data collected during the Full Scale Verification Test must be submitted with the Report in order to document that the sample set with the lowest inactivation was reported on the SWMOR, and to establish the accuracy of the City's hypothesis that the disinfection level is adequate.

Generally speaking, the City must present their CT Study accurately, in a manner that the City can follow, and then must follow that CT Study exactly. If a location is noted as being a disinfection zone end point monitoring location, that location must be sampled. For example, if the CT Study says there are three (3) zones, even if a disinfectant is added only in the first zone, the residual must be routinely measured and recorded in all three disinfection zones. It is unacceptable to ~~fail to~~ ^{not} monitor at a point identified as a disinfection zone endpoint in the City's CT Study. This data is collected to comply with the benchmarking requirements initiated by the EPA under the Interim Enhanced Surface Water Treatment Rule (promulgated by the EPA on December 16, 1998) and ~~therefore accurate data is needed~~. During the future temporary six-month use of the DPR WTP, failure of the plant to meet the inactivation requirements for a four-hour period will be recognized as a treatment technique violation.

Items under the heading "B. Items Agreed Upon by both Parties" in the City's letter dated September 23, 2013

1. The TCEQ **agrees** that the flow measurement referenced at location TCEQ-1J-1, will be collected at a location after the RR WWTP Chlorine Contact Basin, and Addendum J has been modified to include this change.

The TCEQ **does not agree** with the City's ~~letter of September 23, 2013~~ request to move the sample location for turbidity measurement referenced at location TCEQ-1J-2, and the location for this turbidity sampling is **not changed** in Addendum J.

2. The TCEQ **agrees** that the City may conduct weekly TOC and alkalinity analyses on-site in lieu of submitting to an off-site laboratory with National Environmental Laboratory Accreditation Program approval as noted in Addendum J. The City shall provide a current Monitoring Plan documenting the laboratory methods on the Laboratory Approval Form, consistent with 30 TAC §290.121.

3. The TCEQ **agrees** that the free ammonia sample - referenced at location TCEQ-2J-1 should be collected prior to the Chlorine Contact Basin. Addendum J correctly reflects this requirement by indicating that the free ammonia for TCEQ 2J will be collected at location TCEQ-1J-37 (added), but reported at location TCEQ-2JA-1.

Please note that although the City's letter references ammonia sampling without

Comment [acd36]: I paraphrased from Sam's email. Please check/verify/change, thanks

I agree that we need something to make sure we told them & they understood. I would shorten it though.

Comment [m37]: Again, not sure if the extra detail is needed. It is correct, just possibly something else they can disagree with

Comment [acd38]: I don't disagree, but I left it for future reviewers to delete.

Comment [JPK39]: Agree that this is something that the City could disagree with. However, I like including this language because I'm not sure we have stated this as clearly as we do here. Vera? Ada?

Comment [JW40]: I remember the request as not being for using on-line monitoring but to conduct the these weekly tests in-house and not at an off-site laboratory.

Comment [JPK41]: That's what I remember too

Comment [acd42]: concur

It does give them more argument but I am concerned that they have not understood these requirements for their current course. I think I would

distinguishing between pre- or post-chlorination monitoring, the TCEQ makes no alteration to the free ammonia sample (after chlorination) referenced at monitoring location TCEQ-2J-6, and no change has been made to Addendum J at this monitoring location.

4. The TCEQ **agrees** that the temperature measurement required for location TCEQ-4J-2 is likely to be essentially the same as that at location TCEQ-3J-8, and that the reading at location TCEQ-3J-8 may be also reported under location TCEQ-4J-2. Addendum J reflects this.
5. The TCEQ **agrees** that the influent flow rate to the clarifier will be the flow rate of the effluent from the upstream chlorine contact basin. Therefore, Addendum J has been modified to reflect that the clarifier influent flow rate under location TCEQ-5J-1 will be measured at location TCEQ-2J-1. However, the City cannot operate the DPR WTP if there is a leak in the RR WWTP as the flow rates at these two locations would not be the same.

However, the TCEQ **disagrees** that the clarifier's influent flow rate and effluent rate will be the same since the City will be removing sludge from the clarifier. Therefore, the City must monitor the clarifier effluent flow rate and report it under TCEQ-6J-1 as indicated in Addendum J.

6. The City requested to collect pH and temperature measurements at TCEQ-10J—a selected microfiltration membrane—and report them for TCEQ-11J—the combined microfiltration effluent, since the detention time between these locations is low. The TCEQ notes that the combined microfiltration effluent represents the end of disinfection zone WW DZ3. Therefore, the TCEQ requires that the actual temperature and pH be measured at location TCEQ-11J, but **agrees** to the City recording the pH and temperature for monitoring location TCEQ 11JA to be recorded for monitoring location TCEQ-10J as indicated in Addendum J. *and also reported?*
7. After review of Engineering Drawing 4-M-2, the TCEQ **disagrees** that the silt density index (SDI) at monitoring location TCEQ-13J and TCEQ-16J should be the same. The City is injecting sulfuric acid and antiscalant in between these two monitoring locations. Since SDI is a measurement for potential fouling of RO membranes and both of these chemicals are used to control fouling of RO membranes, Addendum J indicates the City must monitor the SDI at both TCEQ-13J, prior to these chemical injection point, and TCEQ-16J, after the in-line static mixer.
8. Since antiscalants change the pH level of the water being treated, the TCEQ **does not agree** that the pH level after the sulfuric acid injection, but prior to antiscalant injection, would be the same after the antiscalant injection point.

It was the intent of the TCEQ to review data for the change in pH levels due to the sulfuric acid alone. Monitoring the pH only after the antiscalant injection will not provide this information. However, our review of Engineering Drawing 4-M-2 indicates there is only 18 inches between the sulfuric acid and antiscalant injection points on the 24-inch diameter pipe. Because of the installation of an in-line static mixer, there is a strong probability that the sulfuric acid will not be completely mixed with all of the water

Comment [acd43]: Is it because of the mixer?
OR because of the short pipe length prior?

Comment [JPK44]: I think it's because of the
short pipe length. Red?

need to clarify

x-space
↓
in the 24-inch diameter pipeline and the chemical reaction completed before the antiscalant is injected so simultaneous chemical reactions will occur. Since the current physical limitation of these two chemical injection points will not allow for monitoring of the sulfuric acid effect alone on the water quality, the TCEQ **has deleted** the pH monitoring for TCEQ 14J monitoring location in Addendum J.

9. The TCEQ **agrees** to the City monitoring the temperature and pH at TCEQ-23J-3 and TCEQ-23J-4, respectively, and also entering the data for the pH and temperature monitoring under TCEQ-24J-2 and TCEQ-24J-3 as indicated in Addendum J.
10. After review of Engineering Drawing 1-M-7, the TCEQ **does not agree** with the City that monitoring the fluoride level for the Conventional 2010 SWTP combined filters' effluent (CFE) under TCEQ-37J-1 should be conducted at monitoring location TCEQ-35J. Monitoring location TCEQ-35J is for the individual filter effluent (IFE) for the single gravity media filter selected for verification testing, not the CFE.

The TCEQ **agrees** to the City monitoring the fluoride level of the CFE ^{ing} prior to fluoride addition at monitoring location TCEQ-36J End Blended DZ 4 and enter the results with the data for TCEQ-37J as indicated in Addendum J.

The TCEQ noted that fluoride injection occurs at the same location as chlorine and ammonia injection for the beginning of Begin Blended DZ 5 within the 2010 SWTP Clearwell for the TCEQ-38J monitoring location. Our review of past submitted flow diagrams had caused the TCEQ staff to believe the fluoride injection point was upstream of the chlorine and ammonia addition at the Conventional 2010 SWTP Clearwell, not at the same location inside the clearwell as shown on Engineering Drawing 1-M-7. The City's Full Scale Verification Study Report must document the exact chemical injection locations with accurate, as-built drawings and—if necessary ^{ing} to provide clear, understandable information—photographs. ^{ok}

- ^{such as}
11. The TCEQ **agrees** to notify the City of any new upcoming regulations for unregulated chemical and microbiological emerging contaminants of concern and proposed ^{changes} ~~changes~~ for any currently regulated chemical MCLs and/or microbiological treatment techniques as soon as staff become aware of these changes.

do we need this paragraph? we're just agreeing to notify City of new regulations in paragraph above.
At this time, it is impossible for either the TCEQ or the City to know what EPA may change or at what level a substantiated public health risk might be set. Neither the TCEQ nor the City can know if the City's proposed DPR treatment process will provide the continuous protection of public health required by any possible change in regulations. Furthermore, the TCEQ must adopt and enforce EPA drinking water regulations to maintain primacy. Failure to adopt or enforce these EPA regulations can result in the EPA taking enforcement action against public water systems in Texas. Also, the TCEQ is charged under Texas Health & Safety Code §341.0315 requiring the TCEQ to ensure that public water systems are supplying a safe and adequate quantity of drinking water. ^{delete?}

Therefore, the TCEQ ~~cannot~~ ~~and~~ **does not agree** that the City may not have to conduct the Full-Scale Verification Test for a longer duration, install additional physical

! too many double negatives

Comment [m45]: Do we want to include this detail?

Comment [acd46]: Ok if you want, leaving for future reviewer.

Comment [JPK47]: I'm okay with keeping this language

Comment [JW48]: I don't disagree with Alicia's change, but was trying to "soften". Also it is not that we just don't agree, we really cannot agree.

Comment [acd49]:
I had deleted the word 'cannot' because I was not sure that the City would understand that 'cannot' also means 'does not'...

I changed my change to include both our inability as well as our not doing it. Marlo may need to re-soften.

Mr. Kerry D. Maroney
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or chemical treatment, or even restart the Full-Scale Verification Test due to a change or proposed change from unregulated to regulated status for a chemical or microbiological contaminant.

Please be aware that all exceptions are subject to the TCEQ's periodic review and may be revoked or revised if the TCEQ finds that the conditions under which an exception was granted have changed or the granting of the exception has resulted in a potential health risk.

If you have any questions concerning Addendums I, J or K or need further assistance regarding the conditions for the temporary exceptions, Protocol and Report, please contact Mr. James "Red" Weddell by e-mail at james.weddell@tceq.texas.gov or by telephone at (325) 481-8056 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

If you have any questions or need further assistance regarding the TCEQ's review of the Preliminary Engineering Report and approval to construct, please contact Vera Poe at (512) 239-6988 or by e-mail at vera.poe@tceq.texas.gov or by correspondence at the following address:

Utilities Technical Review Team - MC-159
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, Texas 78711-3087

Sincerely,

James "Red" Weddell, P.E.
Technical Review & Oversight Team
Water Supply Division
Texas Commission on Environmental Quality

Vera Poe, P.E., Team Leader
Utilities Technical Review Team
Water Supply Division
Texas Commission on Environmental Quality

Linda Brookins, Director
Water Supply Division
Office of Water

Mr. Kerry D. Maroney

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Texas Commission on Environmental Quality

LB/VP/JSW/

Attachments: Addendum J: Full-Scale Verification Test Protocol Minimum Monitoring and Reporting of Water Qualities and Flow Rates (Version: 2430001-10dd2013)
Addendum K: TCEQ July 29, 2013 E-mail

cc: Honorable Glenn Barham, Mayor, City of Wichita Falls, P.O. Box 1431, Wichita Falls, TX 76307-1431
Mr. Darron Leiker, City Manager, 1300 7th Street Room, Wichita Falls, TX 76301
Mr. Russell Schreiber, P.E., Director of Public Works, City of Wichita Falls, P.O. Box 1431, Wichita Falls, TX 76307
Mr. Daniel K. Nix, Utilities Operations Manager, City of Wichita Falls, P.O. Box 1431, Wichita Falls, TX 76307

bcc: Ms. Linda Brookins, Director, Water Supply Division – MC 154
Mr. Elston Johnson, Technical Specialist, Water Supply Division – MC 155
Mr. Joel Klumpp, Team Leader, TCEQ Technical Review & Oversight Team – MC 159
Ms. Cindy Haynie, TCEQ Technical Review & Oversight Team – MC 159
Ms. Marlo E. Wanielista Berg, P.E., TCEQ Technical Review & Oversight Team – MC 159
Ms. Alicia Diehl, Ph.D., E.I.T., TCEQ Technical Review & Oversight Team – R13
Ms. Ada Lichaa, Manager, TCEQ Plan and Technical Review Section – MC 159
Mr. Bob Patton, Manager, TCEQ Public Drinking Water Section – MC 155
Mr. Alex Hinz, TCEQ Public Drinking Water Section – MC 155
Mr. Cliff Moore, TCEQ Abilene Regional Office – R3
Mr. Louis Herrin, III, P.E., TCEQ Water Quality Division – MC 148
Ms. Jaya Zyman-Ponebshek, P.E., Assistant Director, TCEQ Water Quality Division –
MC 145