CITY OF TURLOCK
NOTICE OF INTENT FOR THE USE OF RECYCELD WATER
WITHIN STANISLAUS COUNTY

SECTION I – FACILITY/WASTEWATER TREATMENT INFORMATION

TRWQCF Description: The City of Turlock Regional Water Quality Control Facility (TRWQCF) is designed to treat an average of 20 MGD and is currently treating an average influent flow of 10.3 MGD. Wastewater influent consists of wastewater from the City of Turlock, Community Service Districts of Keyes and Denair and up to 2 MGD of primary treated wastewater from the City of Ceres. The TRWQCF produces disinfected tertiary treated water that meets Title 22 standards for unrestricted use pursuant to Title 22 sections 60301.230(a)(1). For the purposes of this NOI the City intends to provide its tertiary treated water to interested persons for other purposes as allowed by Title 22 section 60307 (a) & (b) such as industrial process water that may come into contact with workers 60307(a) and for transient uses such as construction water for soil compaction, cement mixing (60307)(b) and landscape watering.

Owned and operated by the City of Turlock, pretreatment and primary treatment consists of: influent screening, grit removal, primary flotation, secondary treatment (which consists of activated bio-filtration for BOD/TSS reduction and nitrification), secondary clarification, tertiary treatment (which consists of high rate clarification with chemical addition, cloth disk filters), disinfection via chlorination, dechlorination by sodium bisulfite, effluent discharge to San Joaquin River, up to 2 MGD provided for cooling water purposes to 250 MW gas fired cogeneration facility and an annual average of 100,000 gpd for irrigation of Pedretti Park Regional Sports Complex, solids handling (which consists of gravity belt thickener for waste activated sludge, anaerobic digestion via acid phase digester, methane phase digesters, sludge drying beds) and beneficial reuse of biosolids via land application to farmland and co-compost for public distribution.

The wastewater facilities also include a 37.2 million gallon earthen emergency storage basin, which allows the diversion and storage of primary effluent if necessary. The emergency storage basin was constructed with a 6” bentonite liner on the bottom and sides. The basin is used for the temporary storage of wet weather influent flows that may exceed treatment unit capacity’s, influent waste loads that may cause treatment plant upsets or to hold effluent wastewater that may not meet effluent permit limitations.

A more detailed description of the treatment systems is provided below.

Preliminary treatment: Preliminary treatment includes coarse screening to remove debris and influent pumping to lift the wastewater from the Incoming sewers to allow it to flow by gravity through the primary treatment process.

Primary treatment: Primary treatment consists of flotators which remove solids, organic matter, and grit (such as sand, rocks and other inert materials). The flotators lift the lighter solids, primarily from industries, using fine bubbles that are entrained into the incoming wastewater. Heavier solids and grit are settled to the bottom of the flotators and pumped out for dewatering and disposal in a landfill.

Secondary treatment: Secondary treatment is accomplished with an integrated treatment train consisting of biotowers, aeration basins and secondary clarifiers. Secondary treatment removes dissolved organic material and provides further removal of suspended solids left from primary treatment. The secondary processes also reduce ammonia levels in the effluent.

Tertiary treatment: Tertiary treatment is achieved with high rate flocculation/sedimentation basins, tertiary filters, and chlorine contact tanks. Flocculation/sedimentation basins and filters are used to remove remaining fine particles in the effluent. Chlorine contact tanks (CCTs), the final liquid treatment process, allow time for chlorine solution to provide a high level of disinfection of the effluent before it is discharged to the San Joaquin River or sent to recycled water customers.

Solids processing: Solids removed from the treatment processes are processed with anaerobic digesters. The digesters utilize anaerobic bacteria to reduce the volume and organic content of the solids. After passing through the digesters, the solids are dried in concrete lined sludge drying beds. When dry, the biosolids are trucked by an outside contractor to a permitted agricultural site for beneficial reuse. A portion of the dried solids are co-composted with green waste to create a finished compost product.

The digesters produce biogas (methane) as a byproduct of the biological process. Much of the gas is utilized for heating the anaerobic digesters to sustain the process. Excess gas is flared off.

Best Practices: The operation and maintenance of the TRWQCF is dictated by State and Federal discharge requirements, San Joaquin Valley Unified Air Pollution Control District regulations, Integrated Waste Management Board regulations, SWRCB DDW ELAP requirements as well as other regulatory agencies. Abiding by these regulations is accomplished through the Operation and Maintenance manuals developed by CH2M Hill in 1978, Carollo Engineers in 2003 & 2006, City developed Standard Operating Procedures, laboratory QA/QC manual and other resources available depending on the specific situation. Additionally, all operations staff are certified by the SWRCB as Wastewater Treatment Plant Operators in various Grades from Operator I to Operator V. Additionally, Electrical/Mechanical and Laboratory staffs are certified by the California Water Environment Association in specific disciplines related to their job description.

Disposal Methods: Final effluent from the TRWQCF is discharged to the San Joaquin River. This is accomplished by a 3 mile outfall pipeline which connects to a pump station and subsequent discharge into a 36" pipeline directly to the San Joaquin River.

A summary of the final effluent characteristics and flow variations for calendar year 2014 is provided below.

				2014 TRWQCF FINAL EFFLUENT CHARACTERISTICS							
2014	EFF.	EFF	EFF	EFF	EFF	E.C.	EFF.	EFF.	EFF.	EFF.	EFF.
Average	FLOW	BOD	TSS	SET	Coliform	GRAB	pH	ALK.	TURBITY	D.O.	NH3-N
	MGD	mg/l	mg/l	SOLIDS	Bacteria	MHOS/cm	GRAB	COMP.	COMP	GRAB	COMP
Month	X	X	X	ml/L	MPN/100r	X	X	mg/L	NTU	mg/l	mg/L
Jan	8.4	2	5	<0.1	<2	998	6.9	120	1.9	8.3	0.6
Feb	8.3	2	8	<0.1	<2	996	6.8	118	2.2	8.4	4.6
Mar	8.7	2	8	<0.1	<2	959	6.8	118	2.6	8.6	2
Apr	9.2	2	7	<0.1	<2	1014	6.8	118	2.3	8.4	2.1
May	8.2	2	4	<0.1	<2	1028	7	130	1.8	8.2	<1.0
Jun	8.2	2	4	<0.1	<2	1083	6.9	126	1.7	8	<0.5
Jul	8.4	2	5	<0.1	<2	1103	7	130	1.9	8	0.3
Aug	8.8	2	5	<0.1	<2	1111	6.9	128	1.9	7.9	<1.0
Sep	8.4	3	5	<0.1	<2	1102	7	128	1.8	7.8	<1.0
Oct	8.7	3	5	<0.1	<2	1066	6.9	125	1.4	7.8	<1.0
Nov	8.5	3	5	<0.1	<2	1004	6.8	108	1.4	8.6	<1.0
Dec	8.4	3	5	<0.1	<2	916	6.8	108	1.7	8.6	<1.0
Total	102.2	28	66			12380	82.6	1457	22.6	98.6	9.6
High	9.2	3	8	<0.1	<2	1111	7	130	2.6	8.6	4.6
Low	8.2	2	4	<0.1	<2	916	6.8	108	1.4	7.8	0.3
Avg	8.5	2.3	5.5	<0.1	<2	1031.7	6.9	121.4	1.9	8.2	1.9

SECTION II - RECYCELD WATER APPLICATION

The City of Turlock, as the Administrator of the recycled water program will supply to qualified applicants recycled water for industrial, construction related and landscape irrigation uses.

Administrator
City of Turlock
Larry Gilley
Utilities Division Manager
(209) 668-4442
156 South Broadway # 270
Turlock, CA 95380

At this time the City is unable to accurately predict the number of, nor demand for recycled water for the uses outlined in this NOI. However, we do anticipate interest from construction firms, other landscape businesses and individual residents for mobile use of recycled water.

Operation and Management plans for the use of recycled water at Industrial, Construction and Residential landscape sites shall consist of the following:

Compliance with the City of Turlock Recycled Water Program Rules and Regulations, the requirements of SWRCB Order WQ 2014-0090 DWQ, California Water Code Titles 17 and 22 and RWQCB WDR Order # R5-2015-0027. In summary, these documents stipulate the methods in which the recycled water shall be used: recycled water quality, control measures to be taken to prevent cross connections with potable water supplies and recycled water supplies, proper signage, permitted methods for use in industrial, construction related, landscape irrigation uses and proper reporting and training requirements. All of which are incorporated by title and attachment into the City of Turlock Recycled Water Program Rules and Regulations.

See Attachment A of the distribution systems and approximate use areas. As a portion of this NOI is related to the provision of recycled water to mobile User's, both residential and commercial the use area for these Users is within Turlock proper and the surrounding geographic area of Stanislaus County.

SECTION III – DESCRIPTION OF WATER RECYCLING USE PERMIT PROGRAM

The City of Turlock, as the Administrator will maintain authority over the recycled water use program as provided by the City's Municipal Code, requirements of the Waste Discharge Requirements and Monitoring and Reporting Requirements as imposed by the Regional Water Quality Control Board and California Water Code Section 1210 relative to ownership of the recycled water. Additionally, the City and approved Users will enter into an agreement identifying the terms and conditions of recycled water use.

The program will be implemented through consideration of SWRCB Division of Drinking Water, Title 17 and 22 requirements for the distribution of recycled water. Further information is provided within the Title 22 Engineering Study (Appendix A.)

On-site cross-connection control is important from the standpoint of protecting public health to prevent connections between recycled water piping, sewage piping, and domestic water piping.

The mobile recycled water program prohibits any connection to potable water lines. User's will be trained in identification of cross-connections and as a condition of their permit be prohibited from causing any type of cross-connection condition. Periodically the City will inspect permitted recycled water User areas.

See Attachment B for Monitoring and Cross Connection Control forms

Monitoring and reporting will be performed pursuant to the monitoring and reporting program "Attachment C" and "Attachment B" of the SWRCB Order WQ 2014-0090-DWQ and as required by DDW. Monitoring reports will be submitted to the City.

At a minimum the Use area inspection program will consist of the following:

- Is there evidence of recycled water runoff from the site? If yes, the User must submit a sketch showing the affected area(s) and estimated volume of runoff.
- Is there an odor due to recycled water at the site? If yes, the User must provide a description of the apparent source, characterization, direction of travel, and any public use areas or off-site facilities affected by the odors.
- Is there evidence of recycled water ponding, and/or evidence of mosquitoes breeding due to ponded water?
- In the past year or since the last annual site inspection report, has the site owner, tenant or user supervisor changed?
- What corrective actions are being taken to correct any problems noted in the report?

General requirements for the operation and maintenance of a fixed recycled water system (Industrial Users.)

By accepting recycled water service, User agrees to comply with and enforce the City Rules and Regulations for recycled water use.

Site Supervisor Designation

Approved Users must designate a representative to be the Site Supervisor of the site where recycled water is used. The Site Supervisor represents the owner, tenant, or property manager as a liaison to the City. The Site Supervisor must have the authority to carry out any requirements of the City. It is recommended that the Site Supervisor be an employee who is permanently stationed at the use site. At a minimum, the Site Supervisor must make frequent visits to the use site.

Changing the Site Supervisor

Users must notify the City immediately of any change in personnel for the Site Supervisor position. Upon a change in personnel, the new Site Supervisor must attend a Site Supervisor Certification Workshop within 120 days of the position change. Failure to attend the Site Supervisor Certification Workshop may result in the termination of recycled water service.

Site Supervisor Responsibilities

The Site Supervisor:

- is responsible for the recycled water system at the site.
- is responsible for the operation, maintenance, and prevention of potential violations on the recycled water system.
- must ensure that there are no cross-connections made between the potable and recycled water systems.

- must be present at all cross-connection tests.
- must inform the City of all failures, violations and emergencies that occur involving the recycled or potable water systems.
- is expected to know the provisions contained in California Code of Regulations Title 17 and Title 22, relating to the safe use of recycled water and the maintenance of accurate records.
- is expected to know the basic concepts of backflow and cross-connection prevention, system testing, and related emergency procedures.
- is responsible for training personnel at the use site on the proper uses of recycled water.
- must conduct an annual self-inspection of the use site and provide a written report to the City.

Maintenance
The Site Supervisor is required to perform preventive maintenance to ensure that the recycled water system always remains in compliance with the Rules and Regulations. As part of a preventive maintenance program, the Site Supervisor should:

- Perform regular inspections of the entire recycled water system including piping and valves, pumps, storage facilities, controllers, etc. Immediately repair all leaking pipes or valves, or any other noted condition that violates the recycled water use requirements.
- Check all recycled water identification signs, tags, stickers, and above grade pipe markings for their proper placement and legibility. Replace damaged, unreadable, or missing signs, tags, stickers, and pipe markings.
- Check recycled water use practices to eliminate ponding, runoff, and wind-blown spray conditions. Establish and maintain an accurate record keeping system of all inspections, modifications, and repair work.

Transfer of Property/Ownership
If the property is transferred to a new owner or tenant, or a new site supervisor becomes responsible for system maintenance, the customer must notify the City within 30 days.

During emergency conditions relative to recycled water quality, quantity or accidental cross connection.

Users' contingency plan (see Title 22 Engineering Study) is to be implemented immediately after receiving notification from the City of a delivery of recycled water that exceeds the disinfected 2.2 standard. A reduction in recycled water delivery from the City due to maintenance activity or reductions to address process control issues will be addressed through communication with User via telephone as soon as the problem is apparent subsequent communication will be via e-mail and letter as needed. As the recycled water is meant to supplement potable water supplies, failure to supply recycled water will not result in significant disruption of User's potable water supply.

In the event of a process failure that impedes the use of recycled water in User's facilities, recycled water will be shut down by closing a valve located at the turnout. The valve will remain closed until the City notifies User the effluent quality has been restored.

In the event of an earthquake, flood, fire, major freeze, nearby construction, or other incident, which could cause damage to the recycled or potable water systems, the Site Supervisor must inspect the potable and recycled water systems for damage as soon as it is safe to do so. If

either system appears damaged, both the potable and recycled water systems should be shut off at their points of connection. The Site Supervisor must immediately contact the City for further instruction.

To prevent contamination, damage, or a public health hazard, the User may make emergency modifications or repairs without the prior approval of the City. As soon as possible after the modification (but within three days), the User must notify the City of the emergency modifications and file a written report.

Users of recycled water for Construction purposes and Residential Homeowner use

- By accepting recycled water service, User agrees to comply with and enforce the City Rules and Regulations for recycled water use
- Complete mandatory recycled water use training
- Maintain proper signage on vehicle and container as appropriate
- Follow cross connection control requirements
- Utilize recycled water in authorized areas only

Compliance with the recycling program as described will be the responsibility of both the City and the User. Failure by the User to abide by the Rules and Regulations will result in the discontinuation of delivery of recycled water by the City.

This section describes the training that City and User employees will receive to ensure compliance with the Recycled Water Program.

City Employee Training
City employees involved in the treatment and distribution of recycled water receive training dealing with the tertiary treatment process and the regulations for use as it applies to their responsibilities. The emphasis is on the proper operation of the facility to protect public health and comply with the recycled water regulations.

User Employee Training
User's existing and new employees will be trained in the proper use of recycled water by the Site Supervisor. The Site Supervisor will receive City-sponsored training specific to the distribution and use of recycled water. Supervisory personnel and the Site Supervisor will ensure that employees are not using recycled water carelessly or improperly. Employee training program will include, but not be limited to, the following:

Site Supervisor Training
The designated Site Supervisor must attend a Site Supervisor Certification Workshop, provided by the City. Failure to attend the Site Supervisor Certification Workshop may result in the denial or termination of recycled water service.

Personnel Training
The Site Supervisor is responsible for training all personnel involved with recycled water so they are familiar with the Rules and Regulations. At a minimum, the training program should convey the following information:

- The City's recycled water, although highly treated, is non-potable and must never be used for human consumption.

- Regulations prohibit ponding, windblown spray, and runoff of recycled water.
- Employees must understand that conditions such as ponding, overspray and runoff of recycled water are not allowed and should be corrected immediately.
- Working with nonpotable recycled water is safe if sound judgment is used and appropriate regulations are followed.
- State law prohibits a connection between the recycled water and the potable water systems.
- Good personal hygiene must be followed (for example, washing hands after working with recycled water).
- Employees must understand where the recycled water and domestic water pipelines are located and there is never to be a direct connection between the recycled water system and the potable water system.
- Employees must understand that adequate measures shall be taken to minimize public contact with recycled water.
- Employees must understand that any device, hose, pipe, meter, valve, tank, pump, truck, etc. which has been used with recycled water may not be used to convey potable water nor attached to the potable water system unless it is cleaned and properly disinfected.

Training programs should also instruct personnel in proper procedures for reporting unauthorized discharges, identifying and correcting cross-connections, and modifying the system in the event of an earthquake or other disaster.

Residential Users will also be trained in proper recycled water use specific to residential landscaping, with conditions similar to those noted above and as noted in Attachment C.

SECTION IV – ADDITIONAL SITE SPECIFIC CONDITIONS

Mobile users of recycled water both Commercial and Residential will have specific limitations on the use of recycled water. See Attachment C.

The General Order WQ 2014-0090-DWQ adequately covers the restrictions for this project. Similar restrictions related to recycled water quality are listed in General Order WQ 2009-0006-DWQ and CVRWQCB Order R5-2015-0027. A Notice of Exemption has been filed for this project, please see Attachment D.

SECTION V – WATER RECYCLING PROGRAM ADMINSTRATION

The City of Turlock will act as the Administrator of the recycled water program. Responsible personnel and specifics are noted below:

Administrator (City of Turlock)
Larry Gilley, Utilities Division Manager
Office (209) 668-4442, Cellular Phone (209) 614-4881 E-Mail lgilley@turlock.ca.us

As the Utilities Division Manager Mr. Gilley oversees the daily operation of the City's potable distribution system, collections system and storm water systems as well as any programs related to the City's recycled water program. Additionally, Garner Reynolds the Regulatory Affairs Division Manager will provide additional assistance in the management of the Recycled Water Program.

NOI ATTACHMENT A

Larger Pressurized Pipeline Outfall (LPPO) and Small Pressurized Pipeline (SPP)

NOI ATTACHMENT B

Monitoring and Cross Connection Control Forms

NOI Attachment C
Specific Limitations on Use of Recycled Water for Mobil Commercial and Residential Users

Approved uses

- Backfill consolidation around non-potable piping
- Soil compaction
- Mixing concrete
- Dust control on roads and streets
- Cleaning roads, sidewalks and outdoor work areas
- Residential irrigation
- Food crops where recycled water contacts the edible portion of the crop, including all root crops
- Decorative fountains