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# **Sewer Operations Tri-Annual Inspections Review**

**Prepared for**

**City of Rialto**

**November 2016**



**619-20-15-13**

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**WEST YOST ASSOCIATES**  
*consulting engineers*

**W A T E R W A S T E W A T E R S T O R M W A T E R**

# Sewer Operations Tri-Annual Inspections Review

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**November 2016**



619-20-15-13

A handwritten signature in blue ink, appearing to read "Momcilo Savovic".

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Momcilo Savovic, P.E.

11/03/16

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Date

A handwritten signature in blue ink, appearing to read "K. Whatley".

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QA/QC Review: Kristen Whatley, P.E.

11/03/16

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Date



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ADF	Average Dry Weather Flow	10
ADG	Available Digester Gas	8
AQMD	Air Quality Management District	20
ATS	Automatic Transfer Switch	14
BNR	Biological Nitrogen Removal	11
BOD	Biological Oxygen Demand	23
CA	Concession Agreement	1
CCTV	Closed Circuit Television	5
CEQA	California Environmental Quality Board	54
CFR	Code of Federal Regulations	52
City	City of Rialto	1
CM	Construction Manager	37
CM	Corrective Maintenance	34
CMMS	Computerized Maintenance Management Software	5
Company	Veolia West Operating Services, Inc.	1
CRWB	California Regional Water Board	52
CRWQCB	California Regional Water Quality Control Board	52
CTR	California Toxic Rule	54
CWA	Clean Water Act	52
CWC	California Water Code	52
DO	Dissolved Oxygen	11
EHS	Employee Health and Safety	34
ELAP	Environmental Laboratory Accreditation Program	38
EQ	Equalization Basins	11
FC	Fuel Cells	44
FIP	Facility Improvement Project	5
FOG	Fat, Oil & Grease	8
GBT	Gravity Belt Thickeners	12
GIS	Geographic Information System	5
gpd	Gallons Per Day	31
gpm	Gallons Per Minute	50
GPS	Global Positioning System	26
HP	Horse Power	10
IEEE	Institute of Electrical and Electronics Engineers	51
KPI	Key Performance Indicators	27
kV	Kilovolt	14
kVA	Kilovolt-Amps	14
kW	Kilowatts	42
MCC	Motor Control Center	7
MG	Million Gallons	12



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mg/L	Milligram Per Liter	56
MGD	Million Gallons Per Day	9
MLE		40
MLSS	Mixed Liquor Suspended Solids	41
MW	Megawatt	14
NASSCs	National Association of Sewer Service Companies	26
NFPA	National Fire Protection Association	51
NG	Natural Gas	8
NPDES	National Pollutant Discharge Elimination System	7
NTR	National Toxic Rule	54
O&M	Operations and Maintenance	2
OSHA	Occupational Safety and Health Act	32
OWAM	Oracle Work and Asset Management	3
OWAM	Oracle Utilities Work and Asset Management	5
PACP	Pipeline Assessment Certification Program	26
Plan	Tri-Annual Inspection Review Plan	1
PLC	Programmable Logic Controller	23
PM	Preventative Maintenance	23
PPE	Personal Protective Equipment	51
PS	Pump Station	23
psi	Pounds Per Square Inch	50
RAS	Return Activate Sludge	11
RPM	Revolutions Per Minute	50
RWQCB	Regional Water Quality Control Board	56
RWS	Rialto Water Services	60
SAIC	Science Application International Corporation	6
SCADA	System Control and Data Acquisition	6
SCE	Southern California Edison	14
scft	Standard Cubic Feet	12
SSMP	Sanitary Sewer Management Plan	54
SSOs	Sanitary Sewer Overflows	54
SWB	State Water Board	52
SWPPP	Storm Water Pollution Prevention Plan	34
SWRCB	State Water Resources Control Board	56
TDS	Total Dissolved Solids	7
TIN	Total Inorganic Nitrogen	7
TSS	Total Suspended Solids	23
USEPA	The US Environmental Protection Agency	52
UV	Ultraviolet	12
V	Volt	14
VFD	Variable Frequency Drive	11
WAS	Waste Activated Sludge	12



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WWTP	Wastewater Treatment Plan	2

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# Wastewater Operations

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## EXECUTIVE SUMMARY

In 2012 the City of Rialto and Rialto Water Services/Veolia entered into a service contract known as the Concession Agreement (CA) for the design, construction, and financing of capital improvement upgrades and the operation and maintenance of the Rialto Utility Authority Wastewater Facility and Water Facility. The CA was signed into effect in May of 2012.

Section 5.1 (u) (Page 63 of CA) states *“Commencing upon the third anniversary of the Effective Date, and every third year thereafter during the Term, the Authority shall perform a full-scale inspection and review of the state of repair, working condition and performance capability of the Wastewater Facility, including testing of equipment to determine its physical and operational conditions, and inspection of the general status of repairs of all equipment and structures, grounds, utility lines, spare parts, inventories, and operation, maintenance, repair and replacement records...”*. Tri-Annual Inspections Report is the acronym adopted to describe the activities in this section of the CA and it is used throughout this report.

A Tri-Annual Inspection Review Plan (Plan) was prepared by the City’s consultant and submitted to Veolia West Operating Services, Inc. (Operator) on January 18, 2016. The purpose of this Plan is to obtain agreement on a protocol for the Tri-Annual Inspection Review as provided for in Section 5.1 (u) of the CA. The Plan is based on good industry standards and available public domain information for typical inspection procedures. A list of public domain publications is attached at the end of the report. The objectives of the review are to verify that the Operator has met the compliance requirements in the CA related to, operations, maintenance, renewal and replacements, spare parts and other compliance requirements.

The Plan developed the following tasks based on the terms and conditions of the CA:

- Full-scale inspection and review of the state of repair;
- Working condition and performance capability of the Wastewater Facility, including visual equipment inspections to determine physical and operational conditions;
- Inspection of the general status of repairs of all equipment and structures, grounds, utility lines, spare parts, and inventories;
- Operation, maintenance, repair and replacement records and asset management practices to ascertain on a comprehensive and focused basis the extent to which the Wastewater Facility is properly maintained, repaired and replaced in accordance with the CA; and,
- Concurrent review of all relevant data, records and reports.

This Wastewater (WW) Tri-Annual Inspections Report was prepared in accordance with Section 5.1 (u) of the CA detailing deficiencies found and requiring the Concessionaire to submit a plan of remediation. This statement of deficiencies can be found in Section 6 of this report.

Veolia’s primary responsibility, as the Operator, includes operation and maintenance of the City of Rialto wastewater collection and water distribution, and treatment systems during the term of the CA.



## Wastewater Operations

The City of Rialto and/or their representative is monitoring the operation of the wastewater treatment plant (WWTP), the lift stations, the sewage collection system, and is responsible for periodical report review and inspections of the operating services being provided by the Operator, Veolia, under the CA. The City of Rialto has certain authority and responsibilities for administering the CA. The City delegated the Tri-Annual Inspection Review to West Yost Associates (West Yost) to confirm sewer system operation and maintenance practices.

In the review process Veolia, Rialto Water Utility (RWA), and the City provided a wealth of information to West Yost to evaluate Veolia's performance and compliance with the CA terms and conditions. Review included the following Operations and Maintenance aspects:

- WWTP Operations and Maintenance Activities
- Asset Management Practices
- Equipment Assessments
- Inspections of the Facility Performance
- Billing and Customer Services
- Regulatory Compliance
- Collection System and Lift Station Operations and Maintenance Activities
- Solids Handling and Disposal
- Electrical, Natural Gas, and Reclaimed Water Usage
- Wastewater Treatment Plant Energy Management
- Staffing
- Record Documents and Operation and Maintenance (O&M) Manuals
- Laboratory Data – 2013, 2014, 2015 Annual Reports

The findings and recommendations provided in this report are based on the review of the information listed above and a list of assumptions.



## Wastewater Operations

For the purpose of completing this review and performing evaluations, West Yost has made certain assumptions regarding the CA and the Contractor's performance of its responsibilities. Assumptions are presented below:

- The documents, reports, verbal communications, and the operating records for the 36-month period ending 2015 supplied to us accurately represent the performance of the WWTP.
- The scope of West Yost's review included a review of only selective cost information provided by February 2016 about the operation of the WWTP and collection system, including asset management work order related replacement cost. It did not include a review of the overall economic performance of the WWTP.
- West Yost has made no determination as to the validity and enforceability of any contract, agreement, rule, or regulation applicable to the WWTP and its operations. For purposes of this report, we have assumed that all such contracts, agreements, rules and regulations will be fully enforceable by their terms.
- Veolia will continue to operate the Project as outlined in the CA and the Operation and Maintenance Manual for the WWTP.
- The City will fulfill its obligations under the CA.
- Veolia will continue to employ qualified and competent personnel who will operate and maintain the equipment by the recommendations of the equipment manufacturers' and with prudent industry standards. Operation and maintenance include the preventative maintenance scheduling and making required repairs and replacements promptly.
- There will be no significant changes in operating conditions or costs in the future other than those identified during the review.
- Article VI of the CA indicates that Concessionaire will perform the "Pre-Approved Capital Projects described in Schedule A-10 on the City's behalf", The Concessionaire did not execute all projects identified in Schedule A-10. The purpose of this Schedule is to identify the implementation progress of Wastewater Facility Improvements that Concessionaire anticipates proceeding to design and construction in accordance with the CA. The Concessionaire agrees that, following the Effective Date, it will diligently pursue the completion of the Wastewater Facility Improvements in accordance with the Article VI and Schedule A-10 schedules prepared by Concessionaire under the CA.



# Wastewater Operations

## 1.0 SUMMARY OF FINDINGS

A Summary of key issues has been extracted from the report for the ease of review. Key issues are identified based on a review of operational data, provided documentation including monthly and annual reports, verbal information shared during the field visits by Operator personnel and application of professional judgment as it relates to industry practices.

- **Overall Performance:**



Veolia has provided the Operation and Maintenance services in the first three years of CA in general conformance with the requirements of the CA and with good industry practices except in the adoption and performance of asset management practices and implementation of CA FIP where they did not deliver the committed scope. The existing facilities are aged but remain functional and are maintained and renewed on an as-needed basis with appropriate field maintenance effort and maintenance management, with exceptions listed in collection system maintenance, buildings, and structures maintenance, WWTP maintenance, regulatory compliance and WWTP Phase 1 improvements.

- **CA Implementation:**



A prudent operator who is entrusted with the responsibility of the operation, maintenance, and management of the WWTP should have developed a project plan to enact all provisions of the CA based on good industry practices. Veolia did not provide a management plan to enact the CA.

- **Asset Management:**



For Years 2012 through 2014, West Yost reviewed the asset management program provided by the Operator and identified a number of issues summarized in Appendix A.



For Year 2015, West Yost reviewed the asset management program provided by the Operator and concluded Veolia started implementation of the major asset management program strategies required in the pertinent CA Articles and Schedules.

- **Maintenance Management Systems**



West Yost was provided access to the Oracle Utilities Work and Asset Management (OWAM) system only. Access to Info Net and other systems was not provided. We could not confirm OWAM and InfoNet Geographic Information System (GIS) based mapping systems communication and seamless integration. Some of the noted system functionalities were not proven to be within reasonable best management practices and what would be expected in a fully functional Computerized Maintenance Management Software (CMMS) system. The closed circuit television (CCTV) inspection system and technology being utilized are considered up to





## Wastewater Operations

date. Some of the report contents prepared using OWAM or other report writers such as Optimus did not confirm accurate and acceptable data transfer. Monitoring, documentation, and reporting appear to be lacking necessary technical information that would render the CMMS system as fully reliable. Recommendations are provided in Section 6 to address some issues that warrant additional attention.

- **Capital Plan implementation:**



For Years 2014 through 2015, West Yost finds that the development and implementation of an updated capital projects list, based upon asset condition assessments are non-compliant. In 2014 thru 2015 submittals, the Facility Improvement Projects (FIP) adopted projects as identified in the CA, and not a single Capital Improvement Project was included as part of the annual update of the Capital Plan. Submittals were combined for water and wastewater while the CA requires separate submittals for wastewater.



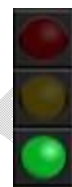
For Year 2016, West Yost finds that the development and implementation of an updated capital projects list, based upon asset condition assessments were only compliant in the 2016 submittal.

- **Facility Improvement Project Implementation:**



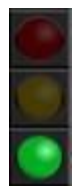
S1 FIP implementation is not evident based on visual field inspections and progress in the field was not documented.

- **Laboratory Services:**



West Yost finds that the laboratory services provided by the Operator were consistently performed within the terms of the CA and the applicable governing rules and regulations. However, Veolia provided an expired WWTP lab certificate.

- **Buildings and Site:**



West Yost finds that buildings and sites are maintained in good condition.



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- **Collection System Maintenance:**



West Yost finds that the Operator's use and implementation of the collection system maintenance program are up to date and appropriate for the management of collection system assets and maintenance in the wastewater field. However, West Yost could not identify maintenance tracking within the InfoNet and/or OWAM asset management systems.

- **Sewer System Management Plan (SSMP):**



West Yost finds that the 2014 Veolia Sewer System Management Plan (SSMP) is generally in compliance with regulations. The report was released in 2014, and biannual audit is due on June 30, 2016. The biannual audit will assess the need for necessary SSMP updates and changes.

- **WWTP Building Structures Mechanical, Electrical and SCADA systems:**



West Yost finds that the WWTP concrete structures were generally in good condition and state of repair. The field condition assessment details electrical, mechanical, and System Control and Data Acquisition (SCADA) system deficiencies that were identified in the 2013 Science Application and International Corporation (SAIC) Asset Management Report and Veolia 2013 Asset Management Condition Assessment. West Yost could not locate the WWTP buildings and structures mechanical, electrical and SCADA maintenance records in the InfoNet and/or OWAM asset management systems.

- **WWTP Maintenance:**



West Yost finds, most of the WWTP's systems are being maintained in accordance with the requirements of the CA based on the field visits and information received from the Operator and the records provided. However, there was evidence that some processes lack proper maintenance.

Maintenance issues noticed throughout the facilities include, but were not limited to:

- The distribution box located ahead of the contact chamber and bypass valves in Plants 3 and 4 were found locked up in their current position because of equipment failures and/or lack of proper maintenance.
- Guard rails and concrete embedment of guardrail posts were deteriorated and in need of replacement.
- Concrete spalling.
- Secondary settler algae cleaning.
- Disinfection contact chamber algae growth.
- Valve malfunction at various site locations.
- Gate malfunction at various site locations.
- Pump failure or lack of required capacity.
- SCADA issues, integration issues, and field instrument failure.





## Wastewater Operations

- Electrical backup issues, Motor Control Center (MCC) issues, cable and conduit issues.
- Corrosion issues within Tertiary Treatment.
- Housekeeping and maintenance issues.

- **Regulatory Compliance:**



West Yost finds that Veolia was issued Notices of Violation for exceeding Cyanide regulatory permit limits. There is also a concern regarding exceedance of total dissolved solids (TDS) and total inorganic nitrogen (TIN) effluent concentrations. The Operator is working diligently to research the cause of noted deficiencies and provide remedies as prescribed within the National Pollutant Discharge Elimination System (NPDES) permit. Other than the listed violations, the WWTP has complied with the terms and conditions of the CA and prudent industry standards for regulatory compliance.

- **Billing Services:**



West Yost finds the billing services provided by the Operator to be managed consistent with industry practices. West Yost found billing data to be up to date, and the management of the billing database quality has been proactive.

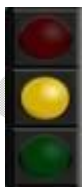
- 

- **Payment Delinquency Program:**



West Yost finds that the delinquency payment program implemented and managed by the Operator is managed well and is consistent with industry practices.

- **Customer Services:**



West Yost finds the customer services provided by the Operator to be managed consistent with industry practices. However, call center response time and measurements of response statistics should improve to match acceptable industry standards.

- **WWTP Phase 1 Improvement:**



The WWTP site operation and maintenance program is currently managed in accordance with industry standards and is consistent with prudent industry practices for the fully operational part of the system. The gas treatment unit is currently out of service and a prime mover with power output is not available. The prime mover (fuel cells) were removed in 2014-2015. The new flare is not operating efficiently because of the decrease of available digester gas (ADG) capacity, so the Operator is using natural gas (NG) to comply with the discharge temperature requirements. Fat, oil, and grease (FOG) through output are adjusted to an anaerobic gas and processing demand. Operation and maintenance of Phase 1 processes and related equipment are considered within industry standards with the exceptions listed above.



## Wastewater Operations

- **Comprehensive Spill Management and Emergency Response Plan and Storm Water Pollution Prevention (SWPPP) Plan Update**



West Yost finds that the intent of existing Storm Water Pollution Prevention (SWPPP) complies with general industry practices and the scope requirements outlined in CA. However, field visit observation raised concerns regarding storm water intrusion into the secondary equalization tank. Therefore, it is recommended to include mitigation of storm water intrusion into secondary equalization tank in revised SWPPP.

- **OSHA Compliance Program (CA Article V (m))**



**Not provided**, except for the outline in the Annual Report

Table ES-1. Overall Score Summary		
	Score	Percentage
	6	32%
	6	32%
	7	36%

Based on the Tri-Annual Inspection simple score summary above, it could be concluded that there is room for improvement in the CA implementation and asset management and document updates. A Detailed Statement of Deficiencies (DSD) is provided in Section 7. The operator should address



## Wastewater Operations

items identified in DSD Section 7 and provide a plan for remediation described as “*The remediation plan sufficient to reasonably demonstrate that, if implemented, the Wastewater Facility will be promptly brought into compliance with the requirements of CA. If the Authority accepts the remediation plan, the Concessionaire shall thereupon correct all material deficiencies noted in accordance therewith.*” as outlined in CA Article V (u).

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