



## City Council Staff Report

Date: November 6, 2013 CONSENT CALENDAR

Subject: WASTEWATER TREATMENT PLANT (WWTP) PERFORMANCE  
REVIEW REPORT, CITY PROJECT NO. 13-17

From: David H. Ready, City Manager

Initiated by: Public Works and Engineering Department

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### SUMMARY

Per the Agreement with Veolia, who is responsible for the Operations and Maintenance of the WWTP, the City of Palm Springs was required to conduct a performance review in order to allow a term extension of Veolia's contract which is set to expire on September 1, 2014. The City Council awarded this task to SAIC (SAIC Energy, Environment & Infrastructure, LLC) on July 5, 2013 and their findings are summarized in this staff report.

### RECOMMENDATION:

- 1) Receive and file the report;
- 2) Consider Veolia's performance favorable and direct the City Manager to proceed with negotiations to enter into a new 15 year contract with Veolia.

### STAFF ANALYSIS:

In Section 4.2 of the City of Palm Springs' Wastewater Services Agreement with Veolia Water North America-West, LLC., it states that the City will retain an independent consultant to conduct a performance review of Veolia's operation and maintenance of the Treatment Facility. The Agreement indicates that the Performance Review will consist of the following elements: a Technical Review, a Facility Review, a Legal Review, and a Financial Review. The City retained SAIC to perform the Performance Review. In the course of the Performance Review, SAIC arrived at a number of findings and conclusions based upon the information that the City and Veolia had provided, the interviews SAIC conducted with the Veolia personnel, SAIC's observations and based upon their best professional judgment. SAIC prepared a detailed report of their observations, findings and recommendations titled the "Palm Springs Wastewater

ITEM NO. 28

Operations and Maintenance Performance Review", which was submitted to the City in October.

In Summary, SAIC found that the services Veolia are rendering overall to be in general conformance with all of the requirements of the Service Agreement and to be consistent with good industry practices. The existing facilities are aged but remain functional and are maintained and renewed regularly. The maintenance management systems and technology utilized were considered best in class with features such as the system's used by Veolia for GIS collection system mapping and CCTV inspections. Veolia's monitoring, documentation and reporting appeared to be compliant with current regulatory requirements.

SAIC conducted the Financial Review of the City's wastewater treatment Operation and maintenance costs by preparing a benchmarking comparison of the summary cost of the operation and maintenance of the wastewater treatment facility in Palm Springs with the summary cost of the operation and maintenance of similar wastewater treatment facilities in the area. The comparison included direct operating expenses for each of the wastewater treatment facilities to illustrate and compare the power, natural gas, and appropriate solids disposal costs. SAIC obtained data from three nearby utilities, the Valley Sanitation District (Indio, CA), Western Municipal Water District (Riverside, CA), and Eastern Municipal Water District (Perris, CA).

Based upon the summary comparison, SAIC found that the City's overall cost per MGD for wastewater collection and treatment, given the identified service level considerations, compares favorably with the O&M unit costs of all the sampled utilities' costs reported by the other utilities participating in the benchmarking study. Further, SAIC found that the City's unit costs per MGD for electricity and natural gas are comparable to the unit costs reported by the other utilities participating in the benchmarking study.

**FISCAL IMPACT:**

There are no fiscal impacts.

SUBMITTED:

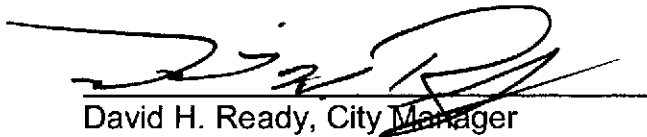
Recommended by:



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David J. Barakian  
Director of Public Works/City Engineer

Approved by:



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David H. Ready, City Manager

ATTACHMENTS:

1. Palm Springs Wastewater Operations and Maintenance Performance Review



Final Report

Palm Springs Wastewater Operations  
and Maintenance Performance Review

City of Palm Springs

October 2013

**SAIC**<sup>®</sup>

Final Report

# Palm Springs Wastewater Operations and Maintenance Performance Review

City of Palm Springs

October 2013

***SAIC***<sup>®</sup>

This report has been prepared for the use of the client for the specific purposes identified in the report. The conclusions, observations and recommendations contained herein attributed to SAIC constitute the opinions of SAIC. To the extent that statements, information and opinions provided by the client or others have been used in the preparation of this report, SAIC has relied upon the same to be accurate, and for which no assurances are intended and no representations or warranties are made. SAIC makes no certification and gives no assurances except as explicitly set forth in this report.

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# Palm Springs Wastewater Operations and Maintenance Performance Review

City of Palm Springs

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## EXECUTIVE SUMMARY

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The City of Palm Springs entered into a Wastewater Services Agreement with Veolia Water North America-West, LLC in June 2006. The initial term of the Agreement began on September 1, 1999 and ended on June 30, 2013. An emergency term extension was granted until September 1, 2014. In Section 4.2 of the Agreement it states that the City will retain an independent consultant to conduct a performance review of Veolia's operation and maintenance of the Treatment Facility (Term Extension Performance Review). The Term Extension Performance Review will consist of the following elements: Technical Review, Facility Review, Legal Review, and Financial Review.

Veolia's primary responsibility, as the Operator, includes operation and maintenance of the Palm Springs wastewater collection and treatment systems during the initial term of the Agreement.

The City of Palm Springs is the Owner of the WWTP, the Sewage Collection System, and the Down and Under System and is responsible for overseeing the operating services being provided by Veolia pursuant to the Agreement. The City of Palm Springs has certain authority and responsibilities for administering the Agreement. The City has hired SAIC to perform the Term Extension Performance Review.

SAIC has reviewed a wealth of information and data provided by the City and Veolia to evaluate Veolia's performance and compliance with the Agreement terms and conditions. Our review included the following contract term aspects:

- Staffing
- WWTP and Lift Station Operations and Maintenance Activities
- Collection System, Lift Station and Down and Under Operations and Maintenance Activities
- FOG Inspections
- Solids Disposal
- Electrical, Natural Gas, and Reclaimed Water Usage
- Wastewater Treatment Plant Energy Management Study
- Record Documents and O & M Manuals
- Laboratory Data Reporting Requirements
- Facilities Inspections
- Equipment Assessments
- Facility Performance
- Regulatory Issues
- Billing and Customer Services
- Financial Review

## Assumptions

In conducting this review and performing our evaluation, SAIC has made certain assumptions regarding the Service Agreement and the Contractor's performance of its responsibilities, as follows:

1. SAIC 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 in accordance with their terms.
2. The documents, reports, verbal communications, and the operating records for the 24-month period ending June 2013 supplied to us accurately represent the performance of the WWTP.
3. Veolia will continue to operate the Project as set forth in the Service Agreement as Amended and the Operation and Maintenance Manual for the WWTP.
4. Veolia will continue to employ qualified and competent personnel who will operate and maintain the equipment in accordance with the recommendations of the equipment manufacturers' and with prudent industry standards. This includes following the preventative maintenance schedule and making required repairs and replacements in a timely manner.
5. The scope of SAIC's review included a review of only selective cost information pertaining to the operation of the WWTP. It did not include a review of the overall economic performance of the WWTP.
6. There will be no significant changes in operating conditions or costs in the future other than those identified during the review.
7. The City will fulfill its obligations pursuant to the Service Agreement.
8. Although Section 5.3 (i) of the Agreement indicates that Veolia will perform the "Pre-Approved Capital Projects described on Schedule AA on the City's behalf, and Veolia executed the majority of these projects, but not others, we have accepted Veolia's representation that the City concurred with not implementing all of the Pre-Approved Capital Projects.

## Findings and Conclusions

In the course of our performance review, SAIC has arrived at a number of findings and conclusions based upon the information provided, the interviews with the Veolia personnel, our observations and based upon our best professional judgment. The following findings are excerpted from the body of this report for ease of review:

- A. **Overall Performance:** During our performance review SAIC finds that the services Veolia are rendering to be in general conformance with all the requirements of the Agreement and with good industry practices. The existing facilities are aged but remain functional and are maintained and renewed regularly. Maintenance management systems and technology utilized were considered best in class with features such as GIS collection mapping and CCTV inspections. Monitoring, documentation and reporting appear to be compliant with current regulatory requirements. Recommendations are provided in Section 10 to address some matters that may warrant additional attention that are excerpted from within the body of the report.
- B. **Laboratory Services (2.10):** SAIC finds that the laboratory services provided by Veolia are performed generally in consistence with the terms of the Agreement and the applicable governing rules and regulations and in accordance with the requirements of the Service Agreement.
- C. **Buildings and Grounds:** SAIC finds that the WWTP buildings and structures are in a generally good condition and state of repair.
- D. **Collection System and Down and Under Maintenance (2.4.2)** SAIC finds that Veolia's use and implementation of the JOB Plus program with this mobile computing functionality is a state-of-the-art use of IT technology for management of collection system assets and maintenance in the wastewater field.
- E. **Collection System and Down and Under Maintenance (2.4.2)** SAIC finds further that the collection and development of a capital projects list, based upon evidenced asset condition assessments to be an example of a State-of-the Industry service level performance.
- F. **Fats, Oils, and Grease (FOG) Inspection Program (2.4.3):** SAIC found the Veolia Fats, Oils, and Grease (FOG) food preparation site inspection program to be well managed and consistent with standard industry practices.
- G. **Sanitary Sewer Master Plan SAIC (2.8.6):** SAIC finds that the Sanitary Sewer Master Plan complies with general industry practices and the scope requirements set forth in Schedule DD.
- H. **Building and Structures (3.3):** SAIC finds that the WWTP buildings and structures were in a generally good condition and state of repair.
- I. **Maintenance (4.2)** SAIC finds based on the information reviewed with Veolia and the records provided, all of the WWTP's systems are being well maintained in accordance with the requirements of the Service Agreement.

- J. **Regulatory Compliance (6.1)** SAIC finds that Veolia, notwithstanding the issuance of Notice of Violations, has complied with the terms and conditions of the Agreement and industry standards for regulatory compliance.
- K. **Billing Services (7.1):** SAIC finds the Billing Services provided by Veolia to be managed consistent with good industry practices. SAIC found the data as represented up to date, and the management of the billing data base quality was being pursued with diligence.
- L. **Payment Delinquency Program (7.1.2)** SAIC finds that the payment delinquency program implemented and managed by Veolia is managed well and consistent with good industry practices.
- M. **Customer Services (7.2)** SAIC finds the Customer Services provided by Veolia to be managed consistent with good industry practices.
- N. **O&M Cost Comparisons (9.3)** SAIC, given the service level and value for money considerations, overall finds the City's O&M unit costs to favorably compare with O&M unit costs of the sampled utilities.

## **1.1 Term Extension Performance Review**

The City of Palm Springs (the “City”) entered into a Wastewater Services Agreement (“Agreement”) with Veolia Water North America-West, LLC (“Veolia”) in June 2006. The initial term of the Agreement began on September 1, 1999 and ended on June 30, 2013. An emergency term extension was granted until September 1, 2014. The term extension for the Agreement under consideration was originally anticipated to extend the Term of the Agreement through June 30, 2018. However, the City’s Municipal code limits the Agreement’s term to a 15 year maximum. Several amendments to the Agreement have been approved to add additional services to the Agreement such as for the Animal Shelter Recycled Water Supervisor Services, the O&M of the Recycled Water Pump Station, the Sewer Service Charge Customer Billing Services, and the Street Sweeping Services. This report is being prepared in response to and generally consistent with the terms in Article IV of the Agreement calling for a Term Extension Performance Review. In Article 4.2 of the Agreement, it states that the City will retain an independent consultant to conduct a performance review of Veolia’s operation and maintenance of the Treatment Facilities. The Term Extension Performance Review will consist of the following elements: a Technical Review, a Facility Review, a Legal Review, and a Financial Review. A description is provided below for each of the review elements.

The Technical Review shall consist of a review of Veolia’s services to determine material compliance with the terms and conditions of the Agreement and its Amendments. In addition, this review will include a review of requirements to apply new technologies, maintain records, and to comply with any Changes in Law provisions, consistent with terms of the Agreement.

The Facility Review shall consist of a review of all relevant reports, operations and maintenance records required by applicable law, the Agreement or any government approval. This task also includes a review of the discharge and monitoring reports, a condition assessment of all facilities, and interviews with key personnel. Information reviewed during this task is to be evaluated based on material compliance with the terms and conditions of the Agreement.

The Legal Review shall consist of a review of Veolia’s performance to assure that it is in full compliance with the provisions of the Agreement and all other applicable law.

The Financial Review that SAIC was authorized to perform by the City was revised based upon the mutual consent of the City and Veolia from those terms for this review originally contained in the Agreement. The authorized Financial Review consisted of a summary comparison of the overall cost of the operation and maintenance of the wastewater treatment facility in Palm Springs with the overall cost of the operation and maintenance of comparable wastewater treatment facilities in the area. The comparison includes direct operating

expenses for each of the wastewater treatment facilities to illustrate and compare the power, natural gas, and appropriate solids disposal costs.

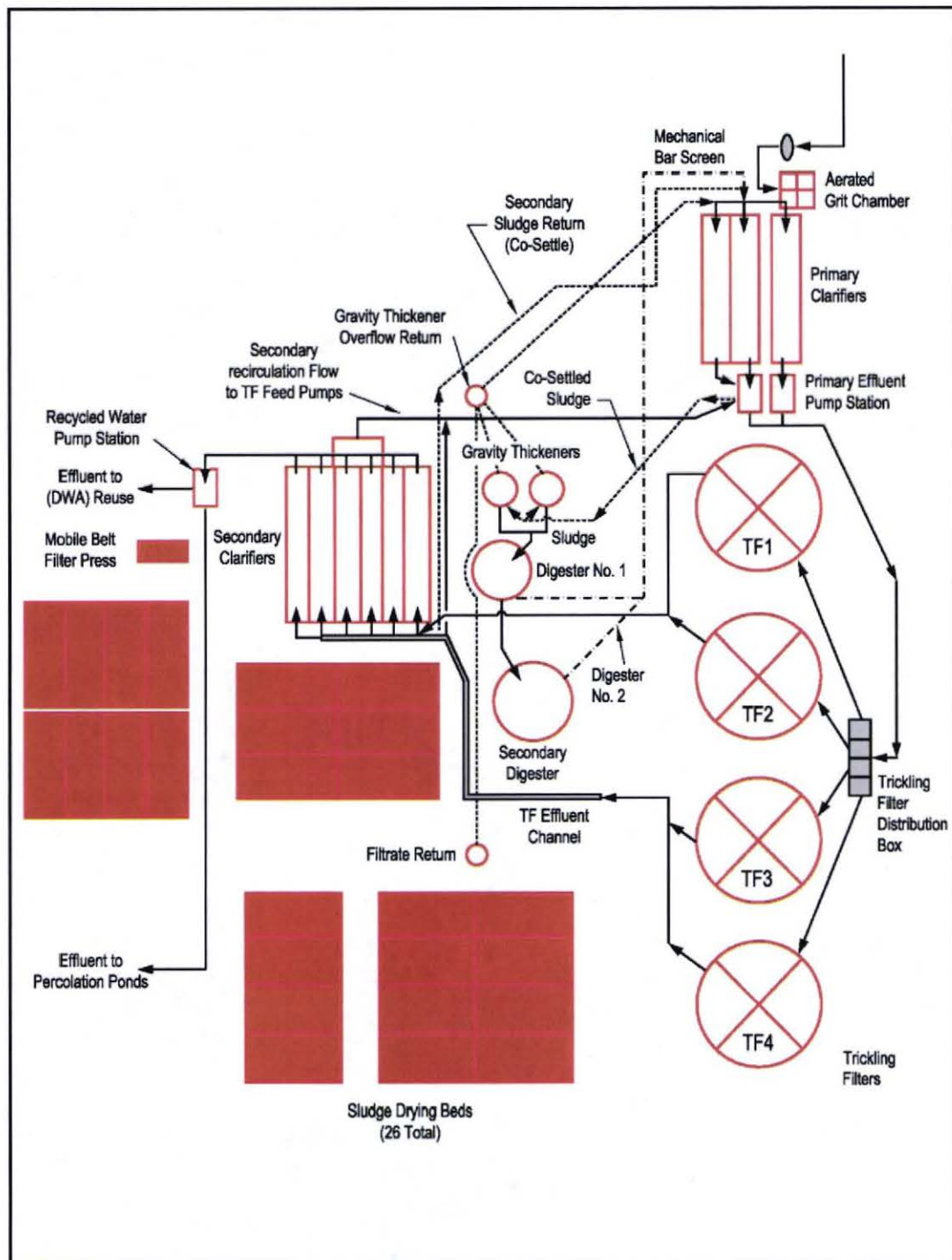
The Term Extension Performance Review is intended to be used as a consideration in the City's decision to renegotiate a new contract with Veolia.

## **1.2 Facility Description**

The Palm Springs Wastewater Treatment Plant (WWTP) is located at 4375 Mesquite Avenue in Palm Springs California. The WWTP has a permitted capacity of 16.5 million gallons per day (MGD) and a design capacity of 10.9 MGD. Current raw wastewater flows into the WWTP are approximately 6 MGD. Wastewater influent into the WWTP consists of raw sewage generated within the Palm Springs collection system and septic tank wastewater that are hauled to the WWTP facility by contract haulers. The WWTP is a secondary wastewater treatment facility with the majority of the treated effluent being delivered to Desert Water Agency for tertiary treatment and then used for reuse and any remainder being discharged by on-site groundwater percolation ponds.

The liquid treatment processes at the WWTP include: mechanical bar screening, aerated grit removal, primary clarification, trickling filters, and secondary clarification. The odor control equipment in the plant collects air from the head works and the primary clarifier and treats it in a carbon absorption contactor for hydrogen sulfide removal. The solids treatment processes begin with the sludge generated in the primary and secondary clarifiers. That mixed sludge is conveyed to the gravity thickeners where polymers is added and the sludges are further condensed and thickened. The thickened sludge from the gravity thickeners is then pumped to the anaerobic digesters for stabilization. The stabilized sludge from the anaerobic digester process is then spread in the sludge beds to be dried before final disposal. In the cooler winter a sludge Belt Filter Press is also used to augment the sludge drying bed process due to the slower rate of drying. The dried sludge is stored until it can be loaded and hauled off-site for beneficial reuse at a composting facility. A process control diagram and site plan is shown in Figure 1-1.

Figure 1-1 WWTP-Flow Schematic Layout



### **1.3 Operator**

Veolia's primary responsibility as defined in the Agreement, as the Operator, includes the operation and maintenance of the Palm Springs wastewater collection and treatment systems and the Down and Under System during the term of the Agreement. As identified in the Agreement, Veolia's scope of services includes:

- Operation and maintenance of the WWTP to treat specification influent in order to produce effluent meeting the Agreement criteria.
- Operation of the Sewage Collection System, and the Down and Under System;
- Provide preventative, predictive, and corrective maintenance of the WWTP, the Sewage Collection System, and/or the Down and Under System;
- Allowing the licensed septic tank pumping contractors to deliver septage to the WWTP, including charging contractors fees as directed by the Agreement. Providing the City monthly statements. Sharing in fee revenue generated by treatment of septage delivered to the WWTP;
- Develop Class "A" bio-solids at the WWTP using commercially reasonable efforts;
- Provide inspection of the Sewage Collection System, and the Down and Under System;
- Perform all sampling, testing, and laboratory analyses of influent required by Waste Discharge Requirements (WDR) Permit, including a QA/QC Program;
- Prepare, certify, and submit all discharge monitoring reports required under the WDR Permit and any applicable WDR Regulations;
- Provide services related to management of Biosolids;
- Select facilities to be used for the beneficial use, treatment, or disposal of solid and other wastes produced or generated by the WWTP, including the cost of hauling and disposal of said wastes to the selected facility;
- Purchase all chemicals, fuels, parts, and supplies required to perform the scope of services;
- Enforce and maintain existing equipment warranties and guarantees of identified existing equipment and new equipment;
- Maintain a 24-hour telephone number where customers can report and emergencies or service problems;
- Respond promptly and provide expeditious remedy for normal problems and emergencies relating to the WWTP, the Sewage Collection System, and/or the Down and Under System;
- Prepare and revise an Emergency Preparedness Plan consistent with applicable Law;
- Adopt and implement an Occupational Safety and Health Act (OSHA) compliance program for all personnel employed by Veolia who will be involved in the

operation and maintenance of the WWTP, the Sewage Collection System, and/or the Down and Under System;

- Reduce odors from the WWTP in order to prevent off-site odors and complaints and to comply with applicable Law;
- Provide for and maintain security and safety for the WWTP in compliance with applicable Law;
- Adopt reasonable methods to furnish continuous protection to the work, and the equipment, materials, papers, documents, plans, studies, and/or other components thereof to prevent losses or damages;
- Prepare all applications and supporting information required for the renewal and maintenance of all existing Government approvals required under applicable laws for the operation and maintenance of the WWTP, the Sewage Collection System, and/or the Down and Under System.
- Provide active community relations and support programs in the City.
- Prepare and deliver an energy management study for the WWTP.
- Provide pool chemicals.
- Provide access to designated area of WWTP for public planting garden including some one-time and annual funding for administration of the garden.
- Provide street sweeping services as indicated in the Agreement.
- Assist City in administering the Grease Trap Subsidy Program, including some funding.
- Contribute limited annual funding and distribute vouchers for the City's Low Flow Toilet Program.
- Deliver to the City a revised scope of work and fixed price to complete a Sanitary Sewer Master Plan.
- Provide City notice of a Capital project that is a Needed Capital Project or a Desirable Capital Project.
- Maintain records of preventative and predictive maintenance of the WWTP, the Sewage Collection System, and/or the Down and Under System;
- Provide wastewater discharge requirements for sanitary sewers set forth in the Agreement.
  - Develop and implement a Sewer System Management Plan
  - Develop and implement a Fats, Oil and Grease (FOG)/Commercial User Pollution Control Program
- Provide storm water monitoring services set forth in the Agreement.
  - Develop and implement a Stormwater Quality Program
- Keep all Rolling Stock, equipment, and machinery in the same condition and repair as was originally provided with reasonable wear and tear excepted.

- Furnish to the City the most recent unaudited and audited financial statements.
- Furnish supporting information for the O & M fees maintained by Veolia.

Veolia's also had several specific responsibilities for completing capital projects that were identified in the Agreement during the initial term that included:

- Implement the following pre-approved Capital Projects:
  - Secondary Digester Rehabilitation
  - Lift Station #1 Wet Well Rehabilitation
  - Percolation Ponds 7A, 7B, and 8
  - Plant Reclaimed Water Pump Station

The Agreement states that the scope of services must be performed using suitable materials and in accordance with Prudent Industry Practice.

## 1.4 Owner

The City is the Owner of the WWTP, the Sewage Collection System, and the Down and Under System. The City is responsible for overseeing the operating services being provided by Veolia and for paying the service fees pursuant to the Agreement. The City has certain obligations and responsibilities under the Agreement. Their principal responsibilities are:

- Provide access to potable water to the WWTP;
- Pay all property, possessory interest, use, franchise, and other taxes, fees or similar charges associated with the operation and maintenance of the WWTP, the Sewage Collection System, and the Down and Under System other than Federal and State taxes imposed on Veolia's income;
- Lease to Veolia and allow Veolia use of, all rolling stock identified in the Agreement, equipment and machinery located at the WWTP;
- Acquire and allow Veolia use of new Rolling Stock (vehicles) identified in the Agreement;
- Arrange for, provide and pay for all electricity and gas usage at the WWTP and used for the Sewage Collection System;
- Perform all other functions and retain all responsibilities and obligations related to the WWTP, the Sewage Collection System, and the Down and Under System not expressly assumed by Veolia in the Agreement;
- Share in fee revenue generated by treatment of septage delivered to the WWTP;
- Submit notice to Veolia of any service deficiency suspected by the City to exist at the WWTP, the Sewage Collection System, and the Down and Under System;
- Conduct annual inspections of the WWTP, the Sewage Collection System, and the Down and Under System;

## Section 2

# REVIEW OF AVAILABLE SYSTEM INFORMATION

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### 2.1 Referenced Information

The following items were available to SAIC for review for this evaluation:

- Amended and Restated Wastewater Services Agreement dated as of June 28, 2006 including amendments;
- Monthly Operating Reports to the City August 2011 through May 2013;
- Annual Operations Reports to the City Fiscal Years 2010/2011 and 2011/2012;
- California Regional Water Quality Control Board, Colorado River Basin, Order 93-076, Waste Discharge Requirements for the City of Palm Springs WWTP, dated November 17, 1993;
- California Regional Water Quality Control Board, Colorado River Basin, Notices of Non-Compliance dated January 17, 2013 and April 23, 2013;
- California Regional Water Quality Control Board, Colorado River Basin, Pre-Requirement Inspection Report dated June 14, 2013;
- Draft Wastewater Treatment Plant Energy Management Study, dated January 2007;
- List of Capital Projects undertaken by Veolia since 2006;
- EPA Sewage Sludge Annual Reports for 2011 and 2012;
- County of Riverside, Dept. of Environmental Health, Hazardous Materials Management Permits for:
  - Facility FA0030106 (1885 Golf Club Drive)
  - Facility FA0017424 (4375 Mesquite Ave.)
  - Facility FA0021795 (67900 Avenue 34)
- South Coast Air Quality Management District, Air Quality Permits for:
  - WWTP Air Pollution Control System (F48376)
  - WWTP (F64156)
  - WWTP Generator (G14651)
  - WWTP Digester Gas Flare (05171)
  - Lift Station #1 Generator (D65622)
- California State Environmental Laboratory Accreditation Program Branch, Certificate of Environmental Accreditation, Certificate 01108CA;
- City of Palm Springs Sanitary Sewer System Management Plan;
- City of Palm Springs Emergency Response Plan;

- City of Palm Springs Fats, Oils, and Grease Control Program;
- City of Palm Springs Sanitary Sewer Master Plan;
- City of Palm Springs WWTP Capital Rehabilitation and Repair Plan, dated October 2009;
- Veolia Service Fee Invoices to the City, September 2011 through May 2013;
- Sludge Quality Analytical Report, Prepared by Test America Laboratories, dated February 28, 2013;
- Veolia Organization Chart;
- Copy of commencement date inventory;
- Copy of current inventory dated June 27, 2013;
- Billing database reports July 2012 through June 2013;
- Low Flow Toilet Program Records;
- Current List of Rolling Stock;
- Emergency Response and Contingency Plan, reviewed and revised 5/14/2004;
- Hazardous Materials Inventory and Business Emergency Plan
- Veolia's Site Specific Health and Safety Programs
- Spill Prevention Control and Counter Measures Program, dated May 21, 2012;
- Infonet Computerized Maintenance Management System Work Order Printout

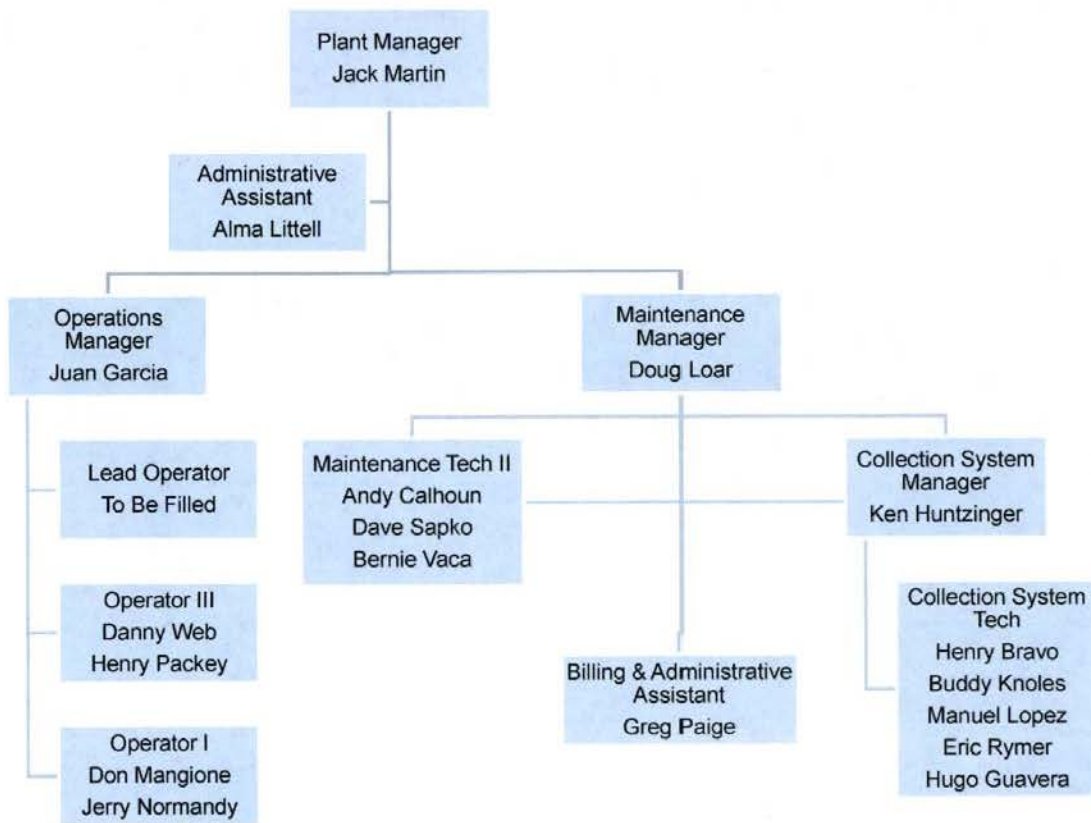
## 2.2 Operating Organization

Veolia's current organization for the operation and maintenance of the City of Palm Springs WWTP, the Sewage Collection System, and the Down and Under System is shown in Figure 2-1.

### List of Subcontractors

TestAmerica Laboratories, Inc. – Sludge Testing, Water Quality Testing  
Liberty Composting – Biosolids Disposal  
Burrtec – Solids Disposal

Figure 2-1 Palm Springs Org Chart



## 2.2.1 Staffing

Veolia is required to staff the WWTP with qualified personnel who meet the certifications of the State as delineated in Schedule D of the Agreement. Jack Martin is the current acting project manager for the facility and he holds a current California Grade V WWTP Operator certification (#8299, expires 12/31/13). Instead of having a single operations and maintenance manager as indicated in the Agreement's Schedule D Organization Chart, Veolia now provides an operations manager and a maintenance manager. The current operations manager, Juan Garcia, holds a current California Grade IV WWTP Operator certification (#7151, expires 12/31/14). The Lead Operator position is currently vacant and Veolia represented that they are in the process of filling that position. Two Operator III positions are filled by Danny Webb and Henry Packey, who both hold current California Grade III WWTP Operator certifications (#8233, expires 12/31/13 & #10302, expired 6/30/14, respectively). Schedule D in the Agreement requires one Operator I position, although two Operator I positions are filled by Don Mangoine and Jerry Normandy, who both hold current California Grade I WWTP Operator certifications (#7771, expires 6/30/15 & #39132, expired 12/31/13, respectively). The Collection System Lead position is filled by Ken Huntzinger. Under his direction are five Collection System Techs (Henry Bravo, Buddy Knoles, Manuel Lopez, Eric Rymer, and Hugo Guavera). The Maintenance Manager is Doug Loar and under him are three personnel all at the Maintenance Tech II position (Andy Calhoun, Dave Sopko, and Bernie Vaca). The administrative assistant is currently filled by Alma Littell. Although some of the positions may not carry the exact titles as illustrated in Schedule D the number of employees corresponds to the number illustrated in the Organization Chart.

In Schedule Z of the Agreement, Veolia anticipated an initial hiring of four additional employees to set-up and perform work related to the FOG, SSMP, and Stormwater quality programs after 5 years the staffing level was anticipated to be reduced to three employees. These programs were set-up and are on-going and the activities covered therein are being performing by existing collection system staff.

Amendment No. 9 to the Agreement requires Veolia to provide sewer service charge customer billing services. A new position was created and filled by Greg Paige to provide these services.

Amendment No. 11 to the Agreement required Veolia to provide a recycled water supervisor for the Animal Shelter. Veolia represented that the City had elected to have this position initially filled by Al Smoot, a retired former assistant city manager. Mr. Smoot's contract for these services was up in March 2012. At that time the acting Animal Shelter's supervisor obtained the necessary training and certification and took over Mr. Smoot's responsibility as recycled water supervisor for the Animal Shelter. Veolia also indicated that the City is no longer running the Animal Shelter, which is currently being run by an animal protection group. As a consequence, Veolia has not been required to provide the trained and certified personnel that was authorized by Amendment No. 11.

Veolia represented that one operations and one collections person are on-call 24-hours a day to respond to emergencies. The WWTP operations crew has two operators who each work four 10 hour days a week with schedules that provide coverage 7 days a week. In addition, the remaining three operators work five 8 hour days a week.

Veolia represented that the WWTP maintenance crew has two technicians who each work four 10 hour days a week with schedules that provide coverage 5 days a week. In addition, the remaining maintenance technician works five 8 hour days per week.

## 2.3 Operations

SAIC reviewed the information provided by Veolia, as referenced in Section 2.1 of this report, in addition to interviewing the Plant Manager, Jack Martin, the Maintenance Manager, Doug Loar, the collection system lead, Ken Huntzinger, the Operations Manager, Juan Garcia, and service charge customer billing services lead, Greg Paige and doing an visual inspection of the WWTP, collection system pump stations and Down and Under System to determine if the current operations activities being performed by the Veolia comply with the scope of work requirements set forth in the Agreement under Article V., Section 5.2, a. (Operations) and Schedule C.

### 2.3.1 WWTP Facility Operations

Schedule C of the Agreement states that Veolia shall operate all equipment and processes located at the WWTP consistent with Prudent Industry Practices and in conformance with applicable State and Federal standards.

The WWTP was fully operational at the time of our facility inspections. Veolia's Operations Manager, Juan Garcia, reported that all operators are performing daily visual inspections of the facilities. If any equipment or process is found to be not performing as intended, is reported directly to him for resolution. Any necessary process changes require approval from the Operations Manager, Juan Garcia who is a Grade IV operator. Given the nature of the treatment process the process control schemes for the plant are primarily based upon solids levels, concentrations and overall mass balances.

Typical WWTP operational activities include: disposal of compacted screenings and grit; sampling of influent and effluent for BOD and TSS; preparation and delivery of influent and effluent samples for outside testing for chloride and sulfate; obtaining samples for monitoring odor control compliance; monitoring the gravity thickeners operations and dosing of polymer; monitoring the sludge digesters for temperature and sludge quality indicators; making any necessary adjustments to the boiler system to maintain proper temperature in the sludge digesters; spreading and mixing of digested sludge in the sludge drying beds; grabbing dried sludge samples to determine the percent dryness of the sludge; moving dried sludge from the sludge drying beds to the storage location; taking and preparing sludge samples for outside laboratory testing; monitoring the effluent discharge to Desert Water Agency ("DWA") and/or the discharge of effluent to the percolation ponds; and taking and preparing water samples from the groundwater monitoring wells for outside laboratory testing.

The clarifier sludge, gravity thickener sludge and primary effluent pumps are set-up on timers and adjustments to the pump time cycles are made based on empirical observations of the system's performance and the monitoring results. Certain equipment's operations are also monitored via the facility's SCADA system.

The Operations Manager reported that operations of the facility with respect to influent flows and pollutant loads typically remain fairly consistent as there are no significant industrial or commercial users discharging into the wastewater collection system. One exception to

consistent influent flows and pollutant loads that has been experienced occurs when the DWA is cleaning their tanks and discharging higher loads of solids into the collections system. Veolia indicated that historically this has presented some challenges to managing the treatment process at the WWTP and has requested that DWA provide them with prior warning for these discharges so they have an opportunity to make appropriate adjustments to the necessary WWTP processes to accommodate for the resulting change in influent characteristics. It was reported that historically DWA had periodically failed to provide warning for their discharges but after some efforts to improve communication by Veolia and/or the City, DWA's communication has improved and it has served to mitigate potential treatment plant process upsets and any resultant regulatory consequences.

### **2.3.2 Lift Station Operations**

The Lift Station's operation for all five lift stations are monitored via the SCADA system. Each lift station has a Programmable Logic Controller ("PLC") with data logging capabilities that reports operating conditions of the pump station on 5-minute intervals via dial up connections. Data is stored for one year on the PLC's at the lift stations and can be monitored at the WWTP operations center. Pump run hours are recorded along with the number of pump starts per day. Pumping patterns are monitored to detect any changes that might indicate operational issues. A screen shot of the Lift Station pump run and trending data from the SCADA program is provided in Appendix A. Pumps adjustments, if needed, must be made manually.

## **2.4 Maintenance Programs and Records**

SAIC reviewed the information provided by Veolia, as referenced in Section 2.1 of this report, in addition to interviewing the Maintenance Managers for the WWTP and Collection systems to determine if the current maintenance activities being performed by the Operator comply with the scope of work requirements set forth in the Agreement under Article V., Section 5.4 (Maintenance Work) and Schedules C, F, and J.

### **2.4.1 WWTP and Lift Station Maintenance**

Schedule C of the Agreement states that Veolia shall maintain all equipment and processes located at the WWTP as per Prudent Industry Practices and in conformance with applicable State and Federal standards.

Since 2008, Veolia has utilized the JOB Plus software program to provide maintenance tracking and scheduling for the WWTP and lift stations. JOB Plus is a Computerized Maintenance Management Software (CMMS) that is designed specifically for maintenance departments to create preventative and corrective maintenance work orders, with detailed equipment information, instructions and graphics. The CMMS system is overseen and maintained by the Maintenance Manager. The Maintenance Manager or lead maintenance technician generate daily work orders to be implemented by the maintenance staff.

Work orders are generated based on weekly, bi-weekly, monthly, quarterly, semi-annual or yearly maintenance schedules. Maintenance intervals are changed infrequently and in response to changed conditions or new information. For example, the oil sampling intervals were changed based on the recommendations of an oil sampling study performed by a

lubricant engineer. Within the Jobs Plus system, the unit treatment processes and the respective component and subcomponent equipment therein are all coded with a specific identifier to allow identification of that specific piece of equipment using an alpha-numeric code. The work orders utilize that code to provide an indication of where each piece of equipment is located, such as HW for head works or GT for gravity thickener. The JOB Plus program data base is already loaded with the maintenance tasks required, the reoccurrence frequency of the maintenance tasks, and information related to performing the work such as the number of hours anticipated to complete the work order, safety equipment necessary, and any specific parts inventory or tools that are needed. The interactive JOB Plus program also allows maintenance staff to input information directly into the work order system upon completion of the work order such as: the actual number of hours to complete the work order; any specific parts actually used; measurements; the equipment's condition assessment; whether the equipment was repaired or replaced; and notes regarding the performance of the work task.

Work order status summary, used by the Maintenance Manager to assess the status of an backlog of maintenance work, is color coded to indicate outstanding work orders by date of issue with the longest outstanding orders color coded red. Completion status is monitored by the Maintenance Manager with a goal of no preventative maintenance work orders in the red category. A monthly summary of the maintenance work orders is provided to the City which includes the date of completion, work order number, equipment serviced, task description, work order notes, name of the staff that that work order was completed by, the number of hours to complete, and whether the work order was for preventative or corrective maintenance. The Maintenance Manager can also monitor the preventative to corrective maintenance work order ratio to evaluate overall performance and make necessary adjustments.

Maintenance activities being performed include:

- Pumps are programmed to alternate, where applicable, to insure each pump is being exercised and continues to be operational. Pump run times are logged.
- Flow meters are calibrated semi-annually. The digester gas flow meter is sent into the manufacturer for calibration.
- Generators are exercised monthly on the load bank and transfer switches are exercised quarterly. Fuel levels in generator tanks are checked.
- Equipment oil and grease changes are performed.
- Safety equipment is tested.
- Lift station wet wells are cleaned twice a year.
- Alarms are tested.

The WWTP's asset inventory is also maintained using this JOB Plus software. The Maintenance Manager maintains the system via additions of new equipment and inactivation of equipment that has been replaced. The inventory database includes: primary vendor name and contact information, manufacturer name and contact information, and part numbers. Veolia also represented that they intend to add photos to the inventory database.

Predictive maintenance being performed includes annual thermographic inspections of critical equipment. The critical equipment thermographically inspected includes the: head works

blowers, primary sludge pumps, trickling filter pumps (200 horsepower), and the Motor Control Centers. In addition, flow meter readings are monitored to determine the condition of or wear on the pumps. This information is also useful to determine if the pumps are meeting their design requirements. For example, the flow meter readings can be checked against the pump system design flows of that pump to determine if the pump(s) are performing correctly. If a pumps flow is significantly less than the expected design flow, then the pump may be clogged or the impeller could be worn and in need of replacement.

As required in Section 5.6, part c, the rolling stock is maintained and insured by Veolia and replaced by the City. Vehicle fuel is obtained from City fueling facilities.

## **2.4.2 Collection System and Down and Under Maintenance**

Section 5.4, part d and Schedule C of the Agreement states that Veolia shall perform Sewage Collection System Services as per Schedule J. Schedule J indicates that sewage collection services consist of maintaining the Sewage Collection System as needed to ensure that the system functions to convey all Influent flows to the WWTP for disposal or reuse. Section 5.4, part e and Schedule O of the Agreement refers to the Down and Under system services that are required to be completed by Veolia.

Veolia is currently using the JOB Plus software program to provide GIS based maintenance tracking and scheduling and asset management for the Sewage Collection System, the Down and Under, and the storm water collection boxes. The JOB Plus CMMS is designed specifically for maintenance departments to create preventative and corrective maintenance work orders, and provides a GIS data base for asset management, with detailed manhole and pipeline information, work instructions, site specific maintenance traffic control plans and graphics. Veolia has developed a field verified, GIS based, sewer system plan for the majority of the City's sewer system in the JOB Plus program. The CMMS system for the collection and Down and Under systems maintenance is managed and maintained by the Collections System Manager. The Collections System Manager generates daily work orders to be implemented by the collection system maintenance staff and he inputs salient data obtained in the field into the CMMS system upon completion of the assigned work order.

The collection and Down and Under systems maintenance staff consists of five collection system technicians who perform daily collection system maintenance and inspection activities, sewer jet cleaning, CCTV inspections, and GPS surveys of the collection system assets.

Work orders are generated based on varying predetermined pipe cleaning schedules, that have factored into them the historic frequencies of sanitary sewer overflows and customer complaints. Typical sewer main cleaning frequency in the JOB Plus program range between 6 weeks to 2 years. The variation in cleaning frequencies are due to the fact that certain areas in the system may require more frequent cleaning due to their design condition and/or location in the system. For example, there is an area located downtown that requires cleaning every 6 weeks, a very high cleaning frequency, due to its proximity to a large concentration of restaurants. Veolia's goal is to clean all sewers in the City within 2 years. They are currently operating on a basis that cleans the entire system in 20 months. An exception to the 2 year cleaning frequency is the large trunk sewer mains which are cleaned based on a 5 year cycle. The collection system maintenance cleaning intervals are adjusted by Veolia based on empirical findings of the on-going cleaning and CCTV results. For example, if a sewer was

cleaned 1 year prior and during the next routine scheduled cleaning the sewer has remained clean, then it may be reasonable to adjust to a longer duration cleaning interval. This is a standard industry practice to optimize the use resources on a needs based basis.

The interactive JOB Plus program allows collections maintenance staff to input information directly into the work order such as: purpose and location of the cleaning, the number of hours to complete the work order; cleaning method including any specific parts or tools that were used in the cleaning; distance of pipe cleaned; the number of passes required to clean the pipe; pipe material and size; debris type and volume; and notes regarding the task. An example of a pipe cleaning work order is included in Appendix B. Veolia indicated that historic pipe cleaning records in the JOB Plus program go back to 2007.

Cleaned collection system pipes are also being inspected to assess their condition using Closed Circuit Television (CCTV) inspection. CCTV inspections provide valuable information such as: structural pipe condition; pinpointing of the location of maintenance issues and structural defects; evidence of inflow & infiltration; location of service laterals; and location and types of obstructions, such as roots, grease, debris and cross-bores. CCTV inspection generally consists of a remotely operated camera, mounted on a robotic crawler that is connected to a video recorder and a monitor. Most CCTV inspections are conducted in accordance with the National Association of Sewer Service Companies (NASSCO) Pipeline Assessment Certification Program (PACP). Two collections system maintenance technicians attended a 3-day training and obtained certification under the PACP program to perform the CCTV inspections. CCTV inspection sewer videos are reviewed weekly by the Collections System Manager and downloaded into the JOB Plus GIS software for reference. Veolia coordinated directly with the City regarding any identified sewers with conditions that require repairs or replacement. Veolia reports that 90% of the sewers in the system have been inspected with CCTV.

Pipe repair work orders are also generated by the same JOB Plus software that generates work orders for pipe cleaning. Historic data on collection system pipe repairs performed goes back five years. Pipe repair work orders consist of the: pipe type and size; date and time of the repair; cause of the pipe failure; pipe repair methods; before and after photos of the repair; and any paperwork or invoices associated with the repair.

Manhole inspection and cleaning is also administered through the JOB Plus program. Typically manholes are inspected and cleaned when the sewer mains are cleaned. Manhole cleaning and inspection data include: manhole location; photos inside and the outside ring and cover of the manhole; flow direction within the manhole; the staff who performed the cleaning and the numbers of hours; the condition of the manhole; and any other relevant information. Manhole locations are also surveyed with GPS equipment as infill work for collection system maintenance staff when not engaged in other duties. The coordinates obtained by the GPS equipment is uploaded into the JOB Plus software. Each manhole rim elevation is obtained with GPS equipment. Veolia reports that 90% of the manholes in the system have been located by GPS survey.

Veolia represented that they compile the inspection data into a list of prioritized sewer repairs or replacement projects, then they develop a time horizon for the repairs or replacements indicating they should be considered as being needed on a one, five, or ten year repair or replacement forecast. This information is then provided to the City for its consideration as capital projects.

Down and Under and storm drain maintenance is also administered through the JOB Plus program. The storm drain facilities were recently administered through the Infonet program but are currently being transferred to the JOB Plus program. The Down and Under storm drain dry wells are typically pumped out by the Vactor Truck and cleaned generally on a 6 week schedule. However, some areas located downtown require pumping every two weeks. Maintenance frequency on these facilities are changed due to crew field observations, complaints or based on weather events. Fluid and debris pumped out of these facilities is taken back to the WWTP for disposal. Maintenance on these facilities requires one full time maintenance technician. An additional maintenance technician may be required to perform tasks that require more than one person.

Collections maintenance staff have a laptop computer in the field that allows them to access the JOB Plus program and fill in necessary work order information once work is completed. In addition, the collections system manager has offsite remote access to the JOB Plus program. SAIC finds that Veolia's use and implementation of the JOB Plus program with this mobile computing functionality is a state-of-the-art use of IT technology for management of collection system assets and maintenance in the wastewater field. Further, we find that the collection and development of a capital projects list, based upon evidenced asset condition assessments to be an example of a State-of-the Industry service level performance.

The GIS database has its elements (pipe, manholes, Down and Under) color or symbol coded to indicate what has been inspected, GPS surveyed, CCTV'ed, and what still remains to be completed.

A monthly summary of the collection system and down and under maintenance work orders is provided to the City which includes: the date of completion, work order number, equipment serviced, task description, work order notes, name of the staff that that work order was completed by, the number of hours to complete, and type of maintenance performed (preventative or corrective).

### **2.4.3 Other Inspections**

In addition to regular maintenance activities, Veolia also performs new collection system construction and Fats, Oils, and Grease (FOG) food preparation site inspections. New construction inspections consist of a pre-acceptance inspections of manholes and sewer mains for construction deficiencies, cleanliness or obstruction. Veolia prepares recommendations to the City based on their inspection observations. The City is required to follow-up with the Contractor regarding the implementation of any recommendations. FOG inspections, which began in 2012, are typically performed annually with the exception of one location which is inspected quarterly. FOG inspections are performed by maintenance staff on a one day per week basis. A FOG inspection database is updated with new restaurants based on permit information from the City. When a restaurant is no longer open the customer is inactivated but not deleted from the system. If a restaurant is found to be non-compliant with the requirement to clean existing grease traps, then Veolia will warn the customer of their intent to contact the Health Dept. regarding the non-compliance. As a final measure Veolia will contact the City to request code enforcement for the establishment in non-compliance. SAIC found the Veolia Fats, Oils, and Grease (FOG) food preparation site inspection program to be well managed and consistent with standard industry practices.

### 2.4.4 Maintenance Reporting

Veolia provides a monthly summary of maintenance activities to the City which includes: the total footage of sewer lines cleaned by cleaning method; the number of sewer lines that were CCTV'ed; number of manhole inspections; number of FOG inspections; number of pipeline repairs; number of manhole surveys; number of customer complaints by type; and the number and type of maintenance requests.

### 2.5 Biosolids Disposal

Section 5.2, part d and Schedule I of the Agreement states that Veolia shall provide services relating to the management of biosolids. Schedule I indicates that Veolia will operate the anaerobic digester and sludge drying beds to achieve Class A biosolids, remove dried biosolids from the drying beds to a storage site at the WWTP, and annually test the sludge for fecal coliform, metals, total solids, and total nitrogen.

Veolia operates and maintains the sludge disposal system. Typically digested sludge is spread into 26 onsite sludge drying beds. In the winter months (November through March) sludge is also run through an onsite trailer mounted belt filter press before being spread into the sludge drying beds to aid in the drying. Periodically Veolia samples the drying sludge to determine its moisture content. Sludge in the drying beds is broken up and turned over to optimize drying. Once the sludge in the drying beds reaches 75% solids, then it is moved to a sludge storage area for further drying. Veolia reports that the dried sludge produced can reach a dryness of up to 91% solids before off-site disposal. Veolia sends out sludge for sampling by Test America in Irvine, CA.

Semi-annually Liberty Composting loads the stored sludge from the WWTP and transports it to a composting site near Bakersfield. The sludge material is then treated in the composting process with green waste and analyzed by a US EPA certified laboratory for metals and pathogens. The resulting compost is used for Class A land application. Pursuant to the Agreement, Veolia pays Liberty Composting by the ton (\$22.76/ton) for transport and disposal of the sludge. Veolia bills the City the additional disposal and transportation costs in excess of \$22.76/ton at a cost plus 10% mark-up. The following table is a summary of the sludge disposal according to the records provided for the previous two years.

**Table 2-1**  
**Sludge Disposal Summary**  
(wet tons/dry metric tons)

2011	2012
1,865/1,290	1,147/869

Source: EPA Sewage Sludge Annual Reports

## 2.6 Other Solids Disposal

Section 5.2, part e of the Agreement states that Veolia shall provide services relating to the transportation and disposal of solid and other wastes, including grit and screenings, in accordance with applicable law.

Grit and screenings are collected daily in a roll off storage bin. Grit and screenings are hauled weekly from the WWTP to the Lambs Canyon Landfill by Burrtec. Veolia is billed by Burrtec based on tare weight. Veolia bills the City for the transportation and disposal cost plus a 10% markup. The following table is a summary of the tonnage of grit and screenings disposed of according to the records provided for the previous two years.

**Table 2-2**  
**Solids Disposal Summary**  
(tons.)

2011	2012
233	253

## 2.7 Electrical, Natural Gas, and Reclaimed Water Usage

### 2.7.1 Electrical Usage

Electricity bills for the WWTP and five lift stations are paid by the City. The City receives the statements and pays the bill. The data provided on electricity consumption for the WWTP and lift stations is based on an Excel spreadsheet prepared by the City to summarize the billing information. The WWTP and lift station electricity consumption and cost data are shown below in Tables 2-3 through 2-15. The 12-month average power usage for the period July 2012 through June 2013 was 232,788 KWh/month at an effective average rate of \$0.106 per KWh. Based upon this latest 12 month average (July 2012 through June 2013), this equates to a treatment plant electricity cost of \$296,106 per year.

**Table 2-3**  
**WWTP Electrical Consumption Cost History**  
July 2011-June 2012

Month Year	KWh	Cost	Effective Unit Rate/kWh
July 2011 – May 2012	*****	*****	*****
April 2012	177,355	\$15,149	\$0.085
May 2012	202,761	\$17,234	\$0.085
June 2012	228,696	\$25,246	\$0.110

Table 2-4  
 WWTP Electrical Consumption Cost History  
 July 2012-June 2013

Month Year	KWh	Cost	Effective Unit Rate/kWh
July 2012	220,326	\$29,607	\$0.134
August 2012	229,340	\$30,803	\$0.134
September 2012	221,927	\$29,433	\$0.133
October 2012	255,188	\$27,611	\$0.108
November 2012	224,975	\$19,334	\$0.086
December 2012	204,143	\$18,131	\$0.089
January 2013	267,045	\$23,937	\$0.090
February 2013	233,536	\$21,048	\$0.090
March 2013	225,518	\$20,405	\$0.090
April 2013	276,474	\$26,832	\$0.097
May 2013	211,672	\$22,177	\$0.105
June 2013	223,312	\$26,327	\$0.118
<b>12-month Average</b>	<b>232,788</b>	<b>\$24,637</b>	<b>\$0.106</b>

Table 2-5  
 Lift Station No. 1 Prior Year Electrical Consumption Cost History  
 July 2011-June 2012

Month Year	KWh	Cost	Effective Unit Rate/kWh
July 2011	7,676	\$1,440	\$0.188
August 2011	7,714	\$1,389	\$0.180
September 2011	7,481	\$1,393	\$0.186
October 2011	8,226	\$1,247	\$0.152
November 2011	7,913	\$1,020	\$0.129
December 2011	7,543	\$945	\$0.125
January 2012	8,338	\$1,020	\$0.122
February 2012	7,895	\$995	\$0.126
March 2012	8,585	\$1,040	\$0.121
April 2012	9,627	\$1,108	\$0.115
May 2012	9,124	\$1,059	\$0.116
June 2012	9,172	\$1,286	\$0.140
<b>12-month Average</b>	<b>8,275</b>	<b>\$1,162</b>	<b>\$0.142</b>

Table 2-6  
 Lift Station No. 1 Prior Year Electrical Consumption Cost History  
 July 2012-June 2013

Month Year	KWh	Cost	Effective Unit Rate/kWh
July 2012	7,505	\$1,419	\$0.189
August 2012	6,458	\$1,274	\$0.197
September 2012	6,707	\$1,423	\$0.212
October 2012	7,512	\$1,185	\$0.158
November 2012	7,624	\$993	\$0.130
December 2012	7,959	\$997	\$0.125
January 2013	8,935	\$1,122	\$0.126
February 2013	8,119	\$1,242	\$0.153
March 2013	10,679	\$1,331	\$0.125
April 2013	13,887	\$1,685	\$0.121
May 2013	9,188	\$1,192	\$0.130
June 2013	9,922	\$1,673	\$0.169
<b>12-month Average</b>	<b>8,708</b>	<b>\$1,295</b>	<b>\$0.153</b>

**Table 2-7**  
**Lift Station No. 2 Electrical Consumption Cost History**  
**July 2011-June 2012**

Month Year	KWh	Cost	Effective Unit Rate/kWh
July 2011	1,132	\$223	\$0.197
August 2011	1,055	\$213	\$0.202
September 2011	1,143	\$225	\$0.197
October 2011	1,140	\$227	\$0.199
November 2011	1,331	\$259	\$0.194
December 2011	1,197	\$240	\$0.201
January 2012	1,409	\$269	\$0.191
February 2012	1,155	\$235	\$0.203
March 2012	1,226	\$245	\$0.199
April 2012	1,168	\$237	\$0.203
May 2012	1,117	\$230	\$0.206
June 2012	991	\$213	\$0.215
<b>12-month Average</b>	<b>1,172</b>	<b>\$235</b>	<b>\$0.201</b>

**Table 2-8**  
**Lift Station No. 2 Electrical Consumption Cost History**  
**July 2012-June 2013**

Month Year	KWh	Cost	Effective Unit Rate/kWh
July 2012	968	\$211	\$0.218
August 2012	961	\$210	\$0.218
September 2012	981	\$213	\$0.217
October 2012	1,121	\$231	\$0.206
November 2012	1,178	\$239	\$0.203
December 2012	1,370	\$264	\$0.193
January 2013	1,502	\$292	\$0.195
February 2013	1,419	\$293	\$0.206
March 2013	1,528	\$309	\$0.202
April 2013	2,038	\$403	\$0.198
May 2013	1,207	\$253	\$0.210
June 2013	1,273	\$263	\$0.206
<b>Current 12-month Average</b>	<b>1,296</b>	<b>\$265</b>	<b>\$0.223</b>

**Table 2-9**  
**Lift Station No. 3 Electrical Consumption Cost History**  
**July 2011-June 2012**

Month Year	KWh	Cost	Effective Unit Rate/kWh
July 2011	400	\$93	\$0.232
August 2011	377	\$87	\$0.232
September 2011	411	\$96	\$0.234
October 2011	404	\$87	\$0.216
November 2011	380	\$74	\$0.196
December 2011	384	\$73	\$0.191
January 2012	414	\$78	\$0.189
February 2012	379	\$71	\$0.188
March 2012	425	\$78	\$0.183
April 2012	410	\$75	\$0.183
May 2012	423	\$78	\$0.185
June 2012	399	\$84	\$0.211
<b>12-month Average</b>	<b>401</b>	<b>\$81</b>	<b>\$0.203</b>

**Table 2-10**  
**Lift Station No. 3 Electrical Consumption Cost History**  
**July 2012-June 2013**

Month Year	KWh	Cost	Effective Unit Rate/kWh
July 2012	386	\$96	\$0.249
August 2012	384	\$96	\$0.251
September 2012	369	\$92	\$0.250
October 2012	419	\$94	\$0.225
November 2012	386	\$74	\$0.193
December 2012	349	\$69	\$0.199
January 2013	523	\$97	\$0.185
February 2013	408	\$82	\$0.201
March 2013	355	\$75	\$0.212
April 2013	394	\$90	\$0.228
May 2013	231	\$56	\$0.241
June 2013	251	\$66	\$0.263
<b>Current 12-month Average</b>	<b>339</b>	<b>\$74</b>	<b>\$0.223</b>

**Table 2-11**  
**Lift Station No. 4 Electrical Consumption Cost History**  
**July 2011-June 2012**

Month Year	KWh	Cost	Effective Unit Rate/kWh
July 2011	636	\$133	\$0.209
August 2011	558	\$123	\$0.220
September 2011	563	\$124	\$0.220
October 2011	963	\$178	\$0.185
November 2011	915	\$175	\$0.192
December 2011	988	\$185	\$0.188
January 2012	1,003	\$187	\$0.187
February 2012	911	\$174	\$0.191
March 2012	974	\$183	\$0.188
April 2012	1,041	\$192	\$0.184
May 2012	851	\$166	\$0.195
June 2012	677	\$143	\$0.211
<b>12-month Average</b>	<b>840</b>	<b>\$164</b>	<b>\$0.197</b>

**Table 2-12**  
**Lift Station No. 4 Electrical Consumption Cost History**  
**July 2012-June 2013**

Month Year	KWh	Cost	Effective Unit Rate/kWh
July 2012	688	\$145	\$0.211
August 2012	458	\$114	\$0.249
September 2012	572	\$129	\$0.226
October 2012	777	\$157	\$0.202
November 2012	908	\$174	\$0.192
December 2012	950	\$180	\$0.189
January 2013	936	\$185	\$0.197
February 2013	919	\$190	\$0.207
March 2013	1,034	\$207	\$0.200
April 2013	1,109	\$226	\$0.204
May 2013	644	\$144	\$0.223
June 2013	608	\$139	\$0.228
<b>Current 12-month Average</b>	<b>800</b>	<b>\$166</b>	<b>\$0.211</b>

**Table 2-13**  
**Lift Station No. 5 Electrical Consumption Cost History**  
**July 2011-June 2012**

Month Year	KWh	Cost	Effective Unit Rate/kWh
July 2011	204	\$58	\$0.286
August 2011	204	\$58	\$0.282
September 2011	240	\$67	\$0.279
October 2011	216	\$55	\$0.255
November 2011	240	\$56	\$0.233
December 2011	252	\$56	\$0.222
January 2012	264	\$57	\$0.217
February 2012	240	\$55	\$0.231
March 2012	252	\$55	\$0.217
April 2012	290	\$60	\$0.208
May 2012	276	\$59	\$0.215
June 2012	264	\$67	\$0.254
<b>12-month Average</b>	<b>245</b>	<b>\$59</b>	<b>\$0.242</b>

**Table 2-14**  
**Lift Station No. 5 Electrical Consumption Cost History**  
**July 2012-June 2013**

Month Year	KWh	Cost	Effective Unit Rate/kWh
July 2012	249	\$70	\$0.282
August 2012	256	\$72	\$0.282
September 2012	254	\$71	\$0.279
October 2012	274	\$67	\$0.246
November 2012	254	\$56	\$0.221
December 2012	261	\$58	\$0.222
January 2013	301	\$68	\$0.227
February 2013	294	\$67	\$0.227
March 2013	257	\$61	\$0.236
April 2013	267	\$67	\$0.250
May 2013	193	\$50	\$0.261
June 2013	213	\$60	\$0.282
<b>Current 12-month Average</b>	<b>256</b>	<b>\$64</b>	<b>\$0.251</b>

The 12-month average power usage for the period July 2012 through June 2013 for all of the lift stations was 11,399 KWh/month. Based upon this latest 12 month average (July 2012 through June 2013), this equates to a Lift Station electrical cost of \$23,160 per year as shown in Table 2-14 below.

**Table 2-15**  
**12-month Average Power Usage and Costs for all Lift Stations**  
**July 2012-June 2013**

Lift Station	Ave KWh/ month	Ave Monthly Cost	Ave Effective Unit Rate/kWh	Est. Annual Cost
1	8,708	\$1,295	\$0.153	\$15,988
2	1,296	\$265	\$0.223	\$3,468
3	339	\$74	\$0.223	\$ 907
4	800	\$166	\$0.211	\$2,026
5	256	\$64	\$0.251	\$ 771
<b>Total</b>	<b>11,399</b>			<b>\$23,160</b>

## 2.7.2 Wastewater Treatment Plant Energy Management Study

Section 5.2, part t of the Agreement states that Veolia shall prepare and deliver an energy management study for the Treatment Facility. The study will assess current usage at the WWTP and potential and cost effective methods for reducing electricity consumption. A draft Energy Management Study was prepared by Veolia in January 2007. The study addressed the following topics: energy usage and historical power consumption; historical natural gas consumption; energy load and costs; plant power and digester models; gas sampling/testing; digester gas utilization options such as a comparison of various cogeneration systems, use of digester gas for internal combustion engines, and options for supplementing bioenergy; photovoltaic power systems; development of a comprehensive energy plan; and recommendations. According to Veolia, the recommendations were discussed with the City and several recommendations were eliminated due to feasibility or return on investment issues associated with the options. Microturbines were eliminated due to the low summer electrical ratings. The study indicated that during the summer months the two microturbines were only able to produce 94 kW of the full 120 kW design power generation capacity. Installation of Photovoltaic panels had a lengthy payback period. The City did agree to move forward with the recommended digester gas treatment 30% design and to look further into different types of fuel cells. Chevron completed an energy valuation but no recommendations were provided. Currently these energy projects are considered a low priority due to limited sources of both outside and City funding and return on investment considerations.

Currently Veolia energy management efforts amount to re-programming the pump running times of the large Mixing Pump on the secondary digester (digester #1) and the trickling filter channel air blower is manually started after 6:00 pm to reduce running pumps during the summer peak cost time (between 12-6 pm). Pumps that require motor replacements are being

replaced with high efficiency motors and variable frequency drives have been added to the sludge pumps.

### 2.7.3 Natural Gas Usage

Natural gas bills for the WWTP and WWTP Administration Building are billed to, and initially paid by Veolia and then passed through to the City for reimbursement to Veolia within the monthly invoice. The City receives the statements and pays the bills. The data provided on natural gas consumption and costs for the WWTP is based on billing statement information provided by the City. Natural gas has historically been utilized at the WWTP for the natural gas powered trickling filter pumps and the digester boiler systems. The natural gas powered trickling filter pumps trickling filter pumps have recently been replaced with conventional electric motor driven pumps. The WWTP natural gas consumption and cost data for are shown below in Tables 2-16 through 2-19.

**Table 2-16**  
**Primary WWTP Natural Gas Consumption Cost History**  
**July 2011-June 2012**

Month Year	Therms	Cost	Effective Unit Rate/Therm
July 2011	*****	*****	*****
August 2011	*****	*****	*****
September 2011	*****	*****	*****
October 2011	1,664	\$1,370	\$0.823
November 2011	2,883	\$2,443	\$0.847
December 2011	4,189	\$3,150	\$0.752
January 2012	3,255	\$2,326	\$0.715
February 2012	3,768	\$2,519	\$0.668
March 2012	2,849	\$1,872	\$0.657
April 2012	2,198	\$1,390	\$0.632
May - June 2012	*****	*****	*****
<b>12-month Average</b>	<b>2,972</b>	<b>\$2,153</b>	<b>\$0.728</b>

**Table 2-17**  
**Primary WWTP Natural Gas Consumption Cost History**  
**July 2012-June 2013**

Month Year	Therms	Cost	Effective Unit Rate/Therm
May 2012	989	\$692	\$0.670
June 2012	477	\$399	\$0.836
July 2012	1	\$18	\$18
August 2012	0	\$15	\$15
September 2012	41	\$52	\$1.268
October 2012	1,372	\$1,009	\$0.735
November 2012			
December 2012	2,937	\$2,235	\$0.761
January 2013	2,879	\$1,814	\$0.630
February 2013	2,696	\$1,708	\$0.633
March 2013	2,569	\$1,884	\$0.733
April 2013	2,057	\$1,631	\$0.793
May – June 2013	*****	*****	*****
<b>Current 12-month Average</b>	<b>1,456</b>	<b>\$1042</b>	<b>\$3.64</b>

**Table 2-18**  
**WWTP Administration Bldg. Natural Gas Consumption Cost History**  
**July 2011-June 2012**

Month Year	Therms	Cost	Effective Unit Rate/Therm
July 2011	**	***	****
August 2011	**	***	****
September 2011	**	***	****
October 2011	8	\$23	\$2.88
November 2011	21	\$37	\$1.76
December 2011	62	\$79	\$1.27
January 2012	24	\$38	\$1.58
February 2012	10	\$26	\$2.60
March 2012	7	\$21	\$3.00
April 2012	9	\$23	\$2.56
May 2012 – June 2012	**	***	****
<b>12-month Average</b>	<b>20</b>	<b>\$35</b>	<b>\$2.23</b>

**Table 2-19**  
**WWTP Administration Bldg. Natural Gas Consumption Cost**  
**History**  
**July 2012-June 2013**

Month Year	Therms	Cost	Effective Unit Rate/Therm
July 2012	9	\$25	\$2.78
August 2012	8	\$22	\$2.75
September 2012	8	\$22	\$2.75
October 2012	7	\$22	\$3.14
November 2012	10	\$27	\$2.70
December 2012	46	\$56	\$1.22
January 2013	37	\$51	\$1.38
February 2013	13	\$26	\$2.00
March 2013	10	\$25	\$2.50
April 2013	12	\$28	\$2.33
May – June 2013	**	***	****
<b>Current 12-month Average</b>	<b>16</b>	<b>\$30</b>	<b>\$2.36</b>

The 12-month average gas usage for the WWTP in total the for the period May 2012 through April 2013 was 1,472 Therms/month. Based upon this latest 12 month average (May 2012 through April 2013), this equates to a treatment plant gas cost of \$12,864 per year.

### 2.7.4 Potable Water Usage

DWA produces potable water for its customers in the City of Palm Springs. DWA provides the potable water to the WWTP for its use at the WWTP. DWA bills Veolia for the potable water that is used at the WWTP through six accounts. Veolia receives the statements and pays the bills. The data provided on potable water consumption and costs for the WWTP are based upon billing statement information provided by the City. Potable water is being utilized at the WWTP for general purposes in the buildings and for filling the Jet/VAC truck. Summaries of the total WWTP potable water consumption and cost data for the last two years are shown below in Tables 2-20 and 2-21.

Table 2-20  
 WWTP Potable Water Consumption Cost History  
 July 2011-June 2012

Month Year	Usage (100's cfs)	Cost	Effective Unit Rate/100's cfs
July 2011	75	\$ 418	\$ 5.57
August 2011	107	\$ 456	\$ 4.26
September 2011	74	\$ 417	\$ 5.64
October 2011	140	\$ 497	\$ 3.55
November 2011	137	\$ 493	\$ 3.60
December 2011	135	\$ 492	\$ 3.64
January 2012	131	\$ 487	\$ 3.72
February 2012	105	\$ 454	\$ 4.32
March 2012	124	\$ 478	\$ 3.85
April 2012	139	\$ 495	\$ 3.56
May 2012	88	\$ 434	\$ 4.93
June 2012	117	\$ 469	\$ 4.01
<b>12-month Average</b>	<b>114</b>	<b>\$ 466</b>	<b>\$ 4.22</b>

**Table 2-21  
WWTP Potable Water Consumption Cost History  
July 2012-June 2013**

Month Year	Usage (100's cfs)	Cost	Effective Unit Rate/100's cfs
July 2012	131	\$ 486	\$ 3.71
August 2012	88	\$ 438	\$ 4.98
September 2012	69	\$ 448	\$ 6.49
October 2012	124	\$ 528	\$ 4.26
November 2012	115	\$ 516	\$ 4.49
December 2012	49	\$ 418	\$ 8.53
January 2013	111	\$ 509	\$ 4.59
February 2013	88	\$ 476	\$ 5.41
March 2013	91	\$ 480	\$ 5.27
April 2013	162	\$ 585	\$ 3.61
May 2013	98	\$ 490	\$ 5.00
June 2013	103	\$ 499	\$ 4.84
<b>Current 12-month Average</b>	<b>102</b>	<b>\$ 489</b>	<b>\$ 5.10</b>

The 12-month average potable water usage for the WWTP in total for the period July 2012 through June 2013 was 102 cfs /month. Based upon this latest 12 month average (July 2012 through June 2013), this equates to a treatment plant potable water cost of approximately \$6,242 per year.

## 2.8 Record Documents and O & M Manuals

Schedule C of the Agreement states that Veolia shall update its O & M Manual for the WWTP as needed for major facility changes or as required by applicable law. The following documents were reviewed by SAIC for compliance with this requirement.

- Emergency Response and Contingency Plan
- Sanitary Sewer Collection System Emergency Response Plan
- Hazardous Materials Inventory and Business Emergency Plan
- Site Specific Emergency Health and Safety Plans
- Sanitary Sewer System Management Plan
- Fats, Oils, and Grease (FOG) Control Program
- Sewer Master Plan
- Spill Prevention Control and Counter Measure Plan
- WWTP Storm Water and Pollution Prevention Plan (SWPPP)

### **2.8.1 Emergency Response and Contingency Plan**

Section 5.2, part k of the Agreement states that Veolia shall prepare and revise, as necessary, an Emergency Preparedness Plan consistent with the requirements of applicable law, establishing procedures for managing emergencies or abnormal conditions affecting the Treatment Facility, the Sewage Collection System or the Down and Under System, and for maintaining and restoring wastewater treatment services as rapidly as reasonably possible following an emergency or abnormal condition.

Veolia has an Emergency Response and Contingency Plan that meets the requirements of the Agreement. The emergency call list contact information provided in this plan is scratched out and handwritten in. Although the contact information in the plan was correct, this information should be updated in a typed format (vs. hand written into the document). SAIC recommends that the Emergency Response and Contingency Plan should be updated in a typed format (vs. hand written into the document) and that the update date and the signature of the authorized representative of party responsible be added to the document and the document be updated, only as needed, annually. All outside phone numbers should also be validated annually to determine they are still valid.

Emergency preparedness drills are conducted at the site with facility staff. Veolia also participates annually in earthquake drills as part of the Great California Shake Out program. As part of this drill, Veolia coordinates with police and fire authorities on appropriate means to delegate authority in the event of an emergency.

### **2.8.2 Sanitary Sewer Collection System Emergency Response Plan**

Schedule Z of the Agreement states that Veolia will develop and implement an overflow emergency response plan that identifies the measures to protect public health and the environment. Veolia has prepared and has implemented a Sanitary Sewer Collection System Emergency Response Plan which meets the requirements of the overflow emergency response plan as indicated in Schedule Z.

### **2.8.3 Hazardous Materials Inventory and Business Emergency Plan**

The Hazardous Materials Inventory and Business Emergency Plan was reviewed. The certification form, located within this plan, was last signed in 2007 indicating that the emergency contact names and phone numbers were updated. SAIC recommends that the Hazardous Materials Inventory and Business Emergency Plan be should be updated in a typed format (vs. hand written into the document) and that the update date and the signature of the authorized representative of party responsible be added to the document and the document be updated, only as needed, annually. The annual update should include, at a minimum, the section that validates that relevant contact names and phone numbers are current on the date recorded for that update.

### **2.8.4 Emergency Health and Safety Plan**

Section 5.2, part l of the Agreement states that Veolia shall be responsible for adopting and implementing an Occupational Safety and Health Act ("OSHA") compliance program for all

personnel employed by Veolia that will be involved with the operation and maintenance of the WWTP, the Sewage Collection System and the Down and Under System.

The current site specific Emergency Health and Safety Plan covers the following topics:

- Electrical Safety
- Emergency Action
- Excavation
- Fall Protection
- Fire Protection
- Ladders
- Hand Tools
- Hazard Communications
- Hearing Conservation
- Heat Stress
- Hot Work
- Housekeeping
- Injury and Illness Prevention
- Lock Out/Tag Out
- PPR
- Power Tools Industrial Trucks
- Respiratory Protection
- Used Oil
- Visitor Safety
- Blood Borne Pathogens
- Bulk Chemical Receiving
- Compressed Gasses
- Confined Spaces
- Contractor Safety
- Cranes and Slings

An annual OSHA compliance report has been completed using the OSHA 300 form. According to the last annual report, Veolia's Palm Springs Staff had no OSHA recordable accidents over the past 22 months.

Andy Kaufman, the Veolia site safety coordinator, indicated that in an effort to keep employee health and safety a top of mind concern in everyday activities, a safety topic is typically discussed in the morning staff meeting, there are also routine safety training topics discussed at regular intervals and Veolia provides a monthly safety training presentation. In addition, supervisors are encouraged to monitor staff personnel during routine activities for any observed marginally safe activities, incidents, or any outright work safety standard violations. If any of these marginally safe activities or incidents are witnessed they are used in safety topic or training session to clarify and correct work place behaviors on a near real time basis. If a violation is encountered, they are instructed to stop the work and to tell the employee about their observation and record incident information. Veolia also conducted an outside audit of their Health and Safety program in March of 2012. Veolia corporate audits the EHS every other year.

Based upon the Employee Health and Safety (EHS) program Veolia presented, the interview of EHS key staff, observed Veolia employee work behaviors and site safety features, the extent of specific relevant EHS training of the site safety manager, the levels of ongoing staff training, the means utilized to ingrain workplace safety into all everyday workplace activities, SAIC finds that the EHS program performance to be consistent with a state-of-the industry EHS program.

### **2.8.5 Sanitary Sewer Management Plan**

Schedule Z of the Agreement states that Veolia shall implement a Sanitary Sewer Management Plan (SSMP). SAIC has reviewed and Veolia has prepared and implemented a Sanitary Sewer System Management Plan that meets WDR requirements per Schedule Z. The plan was submitted electronically into the California Integrated Water Quality System (CIWQS) and was certified by the City. A screen shot of the CIWQS data base is included in Appendix C and indicates a 5-year certification updates for each element are required by the California Regional Water Quality Control Board. Several SSMP elements, those certified prior to 2008, may need to be updated and recertified. Specifically Section 2.6 in the report should be updated to reflect the current Veolia management information. There are several employees listed that are no longer working at the Palm Springs WWTP. SAIC recommends that the Sanitary Sewer Management Plan be updated and recertified by the City as required, and thereafter be updated annually only as needed. The annual update should include, at a minimum, the section that validates that relevant contact names and phone numbers are current on the date recorded for that update.

Schedule Z of the Agreement states that Veolia shall implement Storm Water Quality Program. According to the 2012 Annual Report submitted by Veolia to the City, the City of Palm Springs program is currently under the management of the Riverside County Flood Control Agency. Veolia inspects and cleans the storm water inlet boxes.

### **2.8.6 Sewer Master Plan**

Section 5.2, part d of the Agreement states that Veolia shall deliver a revised scope of work and fixed price to complete a Sanitary Sewer Master Plan consistent with Schedule DD. In February of 2009, the Sanitary Sewer Master Plan was prepared for the City under the direction of Veolia. SAIC reviewed the Sanitary Sewer Master Plan and found that it complies with general industry practices and the scope requirements set forth in Schedule DD.

### **2.8.7 Fats, Oils, and Grease (FOG) Control Program**

Schedule Z of the Agreement states that Veolia shall implement a Fats, Oils, and Grease (FOG) Program. Veolia has prepared FOG Program guidance which includes the following topics: Characterizing FOG sources; Waste discharge requirements; Regulatory requirements; Legal Framework; Program administration; FOG Control Program; Outreach; Inspecting food service establishments; and record keeping. Veolia has conducted the initial inspections and administers a database for on-going inspections and documentation. Section 2.4.3 of this report addresses on-going FOG inspection activities.

### **2.8.8 Spill Prevention Control and Counter Measure Plan**

SAIC reviewed Veolia's Spill Prevention Control and Counter Measure Plan. The facility contact information within this plan need to be updated to reflect current staff.

We recommend that the Spill Prevention Control and Counter Measure Plan should be updated, only as needed, annually. The annual update should include at a minimum the section that validates that relevant contact names and phone numbers are current on the date recorded for that update.

### **2.8.9 WWTP Storm Water Pollution Prevention Plan**

Veolia provided to SAIC for review the WWTP's Storm Water Pollution Prevention Plan (SWPPP) that was prepared for compliance with the State Water Quality Control Board, Water Quality Order No. 97-03Q, NPDES General Permit CAS000001. The plan includes an annual site inspection form that was filled out for an inspection in March 2012 and not signed on page 2. There should be a signed inspection form for the March 2013 annual inspection. The plan is dated March 2009 and has outdated contact information. The plan should be updated to provide current contacts. SAIC recommends that WWTP's Storm Water Pollution Prevention Plan should be updated, only as needed, annually. The annual update should include at a minimum the section that validates that relevant contact names and phone numbers are current on the date recorded for that update.

Schedule Z of the Agreement states that Veolia shall implement Storm Water Quality Program. According to the 2012 Annual Report submitted by Veolia to the City, The City of Palm Springs program is currently under the management of the Riverside County Flood Control Agency. Veolia inspects and cleans the storm water inlet boxes. Veolia has also followed-up regarding Riverside County Storm Water inspections of food service facilities to identify and address any potential impacts to the storm water conveyance system.

## **2.9 Renewal and Replacement Plans**

Section 5.3, part i of the Agreement states that Veolia shall perform certain Capital Projects described in Schedule AA. Schedule AA provides a list of four pre-approved Capital Projects, which include:

- Secondary Digester Rehabilitation
- Lift Station #1, Wet Well Rehabilitation Project
- Percolation Ponds 7A, 7B, and 8
- Plant Reclaimed Water Pump Station

In addition, a Wastewater Treatment Plant Capital Rehabilitation and Repair Plan was prepared by Carollo to provide a long term financial plan and schedule to maintain the City's wastewater treatment needs, to support the projected population base in the service area, and to uphold compliance with regulatory standards. The report provided a summary forecast of the capital rehabilitation and repair requirements for the WWTP over the next 20-years (2009-2029). The report recommended the following Priority 1 Capital Repair and Replacement Projects for implementation over the first 5 years (2009-2014):

- Digester 1 Upgrade
- Boiler and Gas Piping Repair
- Plant Reclaimed Pump Station Upgrade
- New perimeter security fence and gates
- Electrical System Upgrades
- Water system upgrade for fire protection
- East side storm drain line
- Filtrate Pump Station Upgrade
- WWTP Facility Plan
- Septage Receiving Station
- Access Road
- Digester Gas Treatment System
- Fuel Cell
- FOG Receiving Station
- Digester No. 2 Dome Replacement

Veolia indicated that the Plant Reclaimed Pump Station Upgrade, the new perimeter security fence and gates, the Digester 1 Upgrade, and the Electrical System Upgrades have been completed.

### **2.9.1 Major Maintenance, Repairs, and Replacements**

Veolia has completed three of the four pre-approved capital projects listed as having been specifically identified in the Agreement scope. The Secondary Digester Rehabilitation was completed on 7/1/2008 and a Notice of Completion, signed by the City, was included in the Agreement for this project. The Lift Station #1, Wet Well Rehabilitation Project was completed on 3/2/2007 and a Notice of Completion, signed by the City, was included in the Agreement for this project. The additional percolation ponds project was not implemented with the mutual consent of the City because additional percolation capacity was not deemed needed primarily due to increased effluent reuse and some of the reserve land was as a consequence utilized by the City for other purposes. Desert Water Agency utilizes a large amount of the secondary effluent from the WWTP and as a result significantly less effluent is being sent to the percolation ponds.

In addition to the pre-approved capital projects some of the projects listed as priority 1 in the WWTP Capital Rehabilitation and Repair Plan have also been implemented. In 2008, a new perimeter fence and gate were installed. The reclaimed water pump station project was completed which included the installation of new motors with VFD's and rebuilt pumps, a new PLC control system, and piping modifications. Digester #1 was rehabilitated with cover repairs and recoating, new external sludge mixing system and heat exchange equipment, new flow meter, and a new boiler. A gravity thicker upgrade project was completed which included new piping, new polymer feed systems, and sludge flow metering was replaced. Electrical system upgrades were completed in April 2013 to address code violations. The electrical upgrade included a new main transformer, a new whole plant emergency generator, new main electrical switch gear, new ducts and conduits, two new Motor Control Centers, and two new electrical motors were installed on Trickling Filter pumps 4 and 5 to replace the existing natural gas engines.

Veolia identified several large scale collections system capital projects that have been forwarded to the City for the City's consideration to have them implemented. The next capital project Veolia anticipates to be implemented is the Digester #2 cover rehabilitation. According to Veolia, this cover had a five year warranty and has been in place for 7 years and requires replacement due to corrosion.

Veolia has performed a number of major maintenance equipment renewal and replacements or upgrades that have included:

- A snail removal hydra cyclone unit was piloted.
- The Installation of a Vaughan chopper pump at Lift Station #2 and Lift Station #5 to reduce clogged pumps and improve system performance.
- Tipping weirs are currently being fabricated for the secondary clarifiers and will be installed once the fabrication is complete.
- Trickling filters arms are planned to be replaced once the equipment, which is on order, arrives.
- The Primary sludge pump #1 has been replaced with a Seepex progressive capacity pump.

Replacement of piping and of the 14-inch valves on the discharge lines of the Trickling Filter Feed Pumps #4 & #5. Veolia has also recently replaced the valves and made some piping changes to Primary Sludge Pump #1, the Gravity Thickener Sludge Pump #1, and the two Gravity Thickener scum pumps.

## 2.10 Laboratory Data Reporting Requirements

Schedule S of the Agreement provides that Veolia will perform process control testing in the laboratory. SAIC reviewed the management and operation of the sampling and laboratory service provided by Veolia. Juan Garcia is the identified laboratory supervisor for the WWTP. The on-site Laboratory is certified only to perform certain minimal daily testing that requires the test to be done on the samples near instantaneously, such as pH and the Settleable Solids tests. Veolia is currently participating in a Proficiency Testing Program which requires testing to be performed on unknown samples to maintain this proficiency. Weekly tests for parameters such as influent and effluent Total Suspended Solids and Biochemical Oxygen Demand are sampled for by Veolia on-site personnel and sent out for analysis at the TestAmerica Laboratory. Samples for weekly analysis are taken on a regularly scheduled basis and are 24-hour composites samples. The samples taken are logged in a manner that provides adequate documentation of sample locations and specific sampler, which is a standard industry practice. SAIC reviewed the Chain-of-Custody procedures with Mr. Garcia for compliance with applicable regulatory rules. Veolia also takes groundwater monitoring samples for compliance with the discharge permit.

The following information was reviewed by SAIC in conjunction with laboratory reporting requirements.

- Contract laboratory NELAC certifications;
- Examples of Chain of Custody Records;
- Sample Log

Laboratory tests requiring certification are performed by two certified laboratories, TestAmerica and the WWTP laboratory. Additionally, certain limited tests on the sludge are performed by TestAmerica. The Palm Springs WWTP has a current California Environmental Laboratory Accreditation Certificate No. 1089 that expires on 12/31/2013. Test America has a current California Environmental Laboratory Accreditation Certificate No. 1108CA that expires on 1/31/2014. A sludge test analytical report from Test America dated February 2013. Current NELAP certification numbers are provided for both labs in Appendix D.

SAIC finds that the laboratory services provided by Veolia are performed generally in consistence with the terms of the Agreement and applicable governing rules and regulations.

## Section 3

# VISUAL INSPECTION OF READILY ACCESSIBLE FACILITIES

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A visual top-side inspection was performed by SAIC representatives Neil Callahan and Kristen Whatley on July 8-10, 2013 and Momo Savovic and Marek Przywara on July 10, 2013. The site visits consisted of a tour of the WWTP facility that generally followed the order of the treatment processes. The following day Neil Callahan and Kristen Whatley toured the lift station and storm water facilities. On the final day, Momo Savovic and Marek Przywara were given a tour of the WWTP facilities and Lift Station #1 to visually inspect the mechanical and electrical equipment. Photos of the facilities were taken on the site visits. During the site visits, SAIC also discussed WWTP and collection system operations and maintenance with Jack Martin, Doug Loar, Juan Garcia, Ken Huntzinger, Andy Calhoun, and Greg Paige.

### 3.1 Process Systems

SAIC finds the WWTP equipment and facilities overall to be in conditions consistent with the age of the system and its renewals and replacements. The following remarks represent areas or items where conditions were found that may require additional consideration for maintenance and repair or capital replacement.

#### 3.1.1 Anaerobic Digester Gas Collection and Flare

The anaerobic gas collection system is comprised of a stainless steel connection pipeline that feeds anaerobic digester gas to a flare. The collection pipeline is made of stainless steel yet the flow metering section is not made of stainless steel. The flow metering section is visibly deteriorated and possibly corroded. Also there are parts of an abandoned cogeneration system that are connected to the digester gas metering section. SAIC recommends that Veolia and the City consider rehabilitation of the anaerobic gas collection system to change the materials to be corrosion resistant and made of corrosion resistant materials like stainless steel. Sections of the abandoned cogeneration system should be disconnected and removed from the system. Photos of the digester gas flow metering sections are shown in Appendix E – Photos.

The digester gas flare that is connected to anaerobic gas collection system appears to be outdated. It is approximately 8 ft tall. Veolia reported that the flare controls are connected to temperature transducer. A photo of the digester gas flare is provided in Appendix E - Photos.

#### 3.1.2 Anaerobic Digester No. 1

The Anaerobic Digester No. 1 cover is visibly corroded and Veolia indicated it is being considered by the City for replacement. It was previously repaired and a corrosion protective layer was applied during the CIP implementation, however signs of corrosion are visible. See Appendix E – Photos.

### **3.1.3 WWTP Electrical System**

#### **3.1.3.1 Electrical System Improvements**

The recently upgraded Palm Springs WWTP electrical distribution system provides the wastewater treatment plant with the very reliable and redundant power supply. The utility power, as well as the emergency power capacity, is sufficient to carry the continuous WWTP plant motor loads and station auxiliary power. The main switchgear lineup and automatic transfer switches are designed to continuously feed the plant equipment without interruption during the power outages or disturbances.

Southern California Edison (SCE) supplies medium voltage power to Palm Springs WWTP site via 12 (kV) circuit. The new SCE's 12kV-480/277V transformer reducing the 12 kV voltage to the 480V primary distribution voltage, was recently installed to provide WWTP with reliable primary power.

#### **3.1.3.2 WWTP Power Distribution System**

The WWTP electrical distribution system consists of a main lineup of metal-enclosed 480V switchgear; a line-up of several 480 volt, 3-phase MCCs; automatic transfer switches (ATS's); lighting transformers; distribution panels; and a standby generator set.

The main switchgear capacity is sufficient to carry the continuous WWTP plant motor loads and station auxiliary power, and of sufficient interrupting rating to interrupt the maximum fault current.

The recently installed main switchgear (MSG) contains two independent busses "A" and "B" with a key interlocked tie switches to allow the plant power to be fed from either bus. The utility power distribution system is integrated with the recently installed 1,600 kW emergency standby generator capable of supplying power to plant loads in case of the utility power outage or failure.

#### **3.1.3.3 Motor Control Centers**

The Motor Control Centers (MCCs) consist of standardized, free-standing structures bolted together to form a single dead-front panel assembly containing combination motor control units; feeder units; transformers; lighting panels; and metering, relaying, interlocking, and miscellaneous control devices, as required. The recently installed main MSG switchgear feeds the motor control centers MCC-1, MCC-3 and MSG panelboard. The automatic transfer switches (ATSs) installed in switchgear MSG, transfer electric loads from one (e.g. bus A) power source to the redundant (bus B) power source if there is an interruption or power fail signal of the connected power source.

The redundant MCC-1 and MCC-3 feed the remaining motor control centers, secondary distribution centers, and all other installations required to operate the plants.

The motor control centers are either new, were refurbished recently or converted to the pull box enclosures.

#### **3.1.3.4 Standby Generator Set**

The plant is equipped with standby generator capable of supplying power to entire plant in case of the utility power outage or failure. The engine-generator is a skid-mounted package unit consisting of an engine, an alternator, auxiliary systems, controls, and accessories, all mounted in a weatherproof enclosure and furnished as a complete operating system. The engine-generator automatically starts when initiated by the automatic transfer switch or the plant control system. The engine-generator unit is furnished with a complete fuel system, including diesel fuel storage tank; gauges; fittings; truck unloading facility; all piping, valves, and solenoid valve; all stainless steel flexible connections; and all accessories required for proper operation. The unit is provided with a complete exhaust system, including an exhaust silencer, exhaust piping, expansion joints, and accessories, as well as the radiator cooling system, complete with radiator, expansion tank, water pump, belt driven fan, fan guard, thermostatic temperature control, high water temperature cutout, electric jacket water heater, and all accessories required for proper operation.

The 1,600 kW standby generator seems to be oversized for the current operating wastewater treatment plant capacity. Although, the generator is most likely sized to serve the full permitted capacity of the wastewater treatment plant.

#### **3.1.3.5 Automatic Transfer Switches**

The Automatic Transfer Switch (ATS) transfers electric loads from the normal electric power source to an emergency power source. In case of ATS-1, ATS-2 and ATS-3, switches transfer the power from bus A to bus B or vice versa. The transfer switch shall automatically transfer the electrical load circuits upon an interruption or a decrease in the voltage of the normal power source. The electrically operated automatic transfer switches provide the power in such way that the load circuits cannot be connected to more than one power source at a time.

#### **3.1.3.6 SCADA System**

SCADA systems send supervisory control commands to remote equipment and acquire status and analog data from remote equipment and systems. SCADA historian is a central data repository for all process control information, encompassing all real-time and historical information (time series) collected from field instrumentation, equipment and control systems. The data historian allows users to collect all the relevant information they need and analyze. The SCADA System consists of main server, Remote Terminal Units (RTUs), PLCs, Instrumentation and a Communication Network.

The SCADA system hardware and software is provided by up to date Allen-Bradley equipment. Since SCADA is a system of monitoring and controlling of remote systems, communication is central to the SCADA system's operation. The communication backbone at Palm Springs WWTP is provided by a robust, redundant and reliable fiber optic network.

#### **3.1.3.7 Arc Flash**

During our inspection, only a couple of field-affixed arc flash warning labels were located on VFDs and MCC's. Based on this observation, the Palm Springs WWTP may not comply fully with the Arc Flash Protection Warning Signs requirements which state:

1. Provide field-affixed arc flash warning labels on all switchboards, panelboards, industrial control panels, and motor control centers in accordance with National Electrical Code Article 110.16 and per design specifications.
2. As a minimum, warning signs shall state “WARNING: Arc Flash and Shock Hazard, Appropriate PPE required”, and shall be designed in accordance with ANSI Z535.4-2002. Where available, additional information including Flash Hazard boundary, incident energy, voltage shock hazard, PPE required, etc., shall be provided.

The labels shall include a summary of the flash boundary, incident energy, PPE classification, and the Limited, Restricted and Prohibited Approach boundaries based on the nominal system voltage. The Arc Flash Study shall be in accordance with the procedure outlined in IEEE Standard 1584 and NFPA 70E. The arc flash study shall begin with the utility company’s feeder protecting device and include all of the electrical distribution equipment down to and including low voltage motor control centers and power distribution panelboards and lighting panels.

SAIC recommends Veolia review this matter to determine what additional labeling may be required for compliance with the Arc Flash Protection Warning signage standards.

### **3.2 Grounds**

The WWTP grounds are fenced and entry is controlled by a key pad or operator actuated gate. The grounds appear to be relatively neat, clean, and generally maintained in reasonable condition. The grounds adjacent to the process units are covered with gravel with the other areas covered by grass. Throughout the site, there are numerous palm trees that should be trimmed regularly to reduce the likelihood of palm frawns falling into the open air trickling filters, trickling filter effluent channel, and/or the secondary clarifier and causing equipment problems. There appears to be some slight erosion occurring on the bare earth slope between the Trickling Filter Pump Station and Trickling Filter #1. Veolia and/or the City may want to consider erosion control measures in this area including regrading and covering the area with rip rap or other suitable means of stabilization to reduce the potential for continued erosion. Photos of the grounds are shown in Appendix E - Photos.

### **3.3 Buildings/Structures**

SAIC found the WWTP buildings and structures to be in a generally good condition and state of repair. There was a concrete lip which provides secondary containment near the plant head works that appeared to have the concrete being clipped away. See Appendix E - Photos.

The public areas and the work areas in the Administration Buildings appeared to be well maintained, organized, and clean. The Control Room and Laboratory appeared well organized and clean.

### **3.4 Pavement**

Pavement throughout the WWTP site appeared to be in good condition with some areas of minor cracking consistent with age of the pavement. As the pavement continues to age these

cracks will require monitoring to determine appropriate maintenance actions needed to prolong the pavement's useful life.

### **3.5 Pump Stations**

All five lift stations were inspected. Inspections at Lift Station Nos. 2-5 were limited to above ground inspections as these are confined spaces and as a result fall protection activities would have been required to enter the below ground facilities. Lift stations were found to be in a condition consistent with the age of the stations. Veolia has upgraded the control and alarm systems for the pumps stations to improve their reliability. The effluent recycled water pump station was also inspected. The following remarks represent areas or items where conditions were found to be out of the ordinary or to potentially require maintenance and repair.

#### **3.5.1 Lift Station No. 1**

The Lift Station No. 1 has a hydropneumatic (surge control) tank with combination air valves that appear heavily corroded. A surge control system based on hydropneumatic tank may not be necessary for the relatively low pressure sewer conveyance system. This observation is based on the fact there is approximately 10 psi discharge head on the discharge header. It may be possible to remove heavy corroded items and prevent possible spread of corrosion to the interconnecting pipeline. See Appendix E - Photos.

The Lift Station No. 1 HVAC system did not operate during the site visit. An operating HVAC system is generally required to meet confined space regulations and requirements. SAIC recommends that Veolia repairs or rehabilitates the existing Lift Station No. 1 HVAC system up to a fully operational condition or validate that the ventilation is adequate to maintain the pumps station's current categorization as not being a confined space under the OSHA confined space standard.

The Lift Station No. 1 new wet well coating was damaged close to the entrance. Coating damage should be repaired and brought to acceptable standard. See the photo in Appendix E - Photos.

Lift Station No. 1 pumps and valves with adjacent piping system, while represented to be fully functional, appears to be at or near the end of their anticipated useful life and perhaps should be considered for future equipment renewal. See the photos in Appendix E - Photos.

#### **3.5.2 Lift Station No. 4**

The Lift Station No. 4 emergency generator, while represented to be fully functional, appears to be at or near the end of its anticipated useful life and perhaps should be considered for equipment renewal with more current technology. See Appendix E - Photos.

#### **3.5.3 Recycled Water Pump Station**

A small amount of standing water was found on the slab below the pumps and pump discharge piping at the reclaimed water pump station. Veolia represented that the cause of the water was due to normal pump shaft seal leakage and discharges for air relief valves on the

## VISUAL INSPECTION OF READILY ACCESSIBLE FACILITIES

discharges of the pumps. While not unusual to find small discharges related to the use of these types of equipment, good design and/or housekeeping practices would be to direct the discharge to a floor drain or sump and limit pooling on a floor slab. See Appendix E - Photos

## **4.1 Operations**

As part of the Performance Review, a Facility Review was conducted to provide a condition assessment of all facilities. A visual inspection was performed by SAIC on July 8-10, 2013. The site visit inspection consisted of a tour of the WWTP facility that generally followed the order of the treatment process. The following day included a tour of the lift station and storm water facilities. During the site visits, SAIC also discussed WWTP and collection system operations and maintenance with Veolia staff.

### **4.1.1 Headworks**

The headwork facilities are located at the WWTP near the entrance gate. The headworks equipment consists of: a bar screen and bar rack, grit chambers and screw auger, Parshall flume, and blowers. A single mechanical bar screen removes large debris. A manual bar rack is provided as a back up or bypass for the bar screen. The primary and secondary grit chambers are covered and aerated by the blowers. The screw auger moves the cleaned grit from the chambers to a waste bin. The Parshall flume is located after the bar screen and measures the flow rate of influent into the WWTP. There is also a location for septage trucks to dump hauled waste into the headworks. Veolia indicated that the elevation of headworks is not far enough below the elevation of the gravity main into the plant resulting in surcharging of the gravity main. In addition, there have been odor complaints due to the proximity of the headworks to surrounding buildings and park activities. During inspection, the headworks facilities were functioning normally and no excessive odors were encountered. There is no reliable mechanical redundancy for the mechanical bar screen should it need to be taken out of service for an extended period of time.

### **4.1.2 Primary Clarifiers**

The primary clarifiers are located south of the headworks facilities adjacent to the eastern fence of the WWTP facility. The primary clarifiers consist of three rectangular covered clarifiers each approximately 6 feet deep, 160 feet long, and 32 feet wide. Sludge is collected off the center of the clarifiers and pumped to the gravity thickeners. Foul air from the primary clarifiers is collected and sent through the trickling filters and an adjacent carbon adsorber to treatment of hydrogen sulfide. During inspection, the primary clarifiers were functioning normally and no excessive odors were encountered.

### **4.1.3 Primary Effluent Pump Station**

Primary effluent is pumped to the top of the trickling bio filters. The primary effluent pump station consists of two underground rooms with electric and natural gas powered pumps and an air tank. There are several different pump sizes with the smaller, electrically powered, pumps functioning during our inspection. Two of the smaller pumps appeared to have new motors installed. The piping and valves in these rooms appeared to be recently installed and/or coated and the area was neat and clean.

#### **4.1.4 Bio Filters**

Primary effluent is pumped into four open air trickling bio filters via a distribution box located on the east side of the filters adjacent to the fence. Each bio filter is filled with rock approximately 9 feet deep and primary effluent is sprayed onto the rock by rotating arms. The treated effluent from the trickling bio filters is collected at the bottom of the filters and directed to an open air, concrete, effluent channel that distributes the treated wastewater to the secondary clarifiers via gravity. The trickling bio filters appearing to be functioning normally during our inspection and no excessive odors were encountered.

#### **4.1.5 Secondary Clarifiers**

The secondary clarifiers are located east of the gravity thickeners and north of the sludge drying beds. The secondary clarifiers consist of six rectangular, open air, clarifiers each approximately 10 feet deep, 160 feet long, and 25 feet wide. Sludge is collected off the clarifiers and pumped to the primary clarifiers and/or gravity thickeners. Treated secondary effluent is sent to the percolation ponds for recharge or in the alternative is pumped to the Desert Water Agency where they do further treatment to meet Title 22 quality standards and they distribute the product locally for reuse. . During inspection, four of the six the secondary clarifiers were functioning normally and no excessive odors were encountered.

#### **4.1.6 Percolation Ponds**

There are six percolation ponds located at the WWTP. During the summer and at the time of our visit, no effluent was being disposed of into the percolation ponds due to the high demand for reuse water for irrigation purposes. Veolia reported that the percolation capacity of the ponds is unknown.

#### **4.1.7 Sludge Disposal System**

Thickened sludge is sent to two anaerobic digesters where is mixed and heated, if necessary during the winter months, until the sludge is ready for disposal. Sludge is spread into 26 sludge drying beds located in the southwest part of the WWTP. Sludge is dewatered in the beds. During the summer sludge is sent directly to the beds and during the winter sludge is run through a trailer mounted belt press before being spread into the beds. Once the sludge reached approximately 75% solids, then it is transported to a lined storage area for further drying. During inspection, sludge was drying in both the drying beds and storage area and no excessive odors were encountered.

#### **4.1.8 Emergency Generator and Power Production**

The WWTP electrical distribution system consists of a main lineup of metal-enclosed 480V switchgear; a line-up of several 480 volt, 3-phase MCCs; automatic transfer switches (ATS's); lighting transformers; distribution panels; and a standby generator set.

The main switchgear capacity is sufficient to carry the continuous WWTP plant motor loads and station auxiliary power, and of sufficient interrupting rating to interrupt the maximum fault current.

The recently installed main switchgear (MSG) contains two independent busses "A" and "B" with a key interlocked tie switches to allow the plant power to be fed from either bus. The utility power distribution system is integrated with the recently installed 1,600 kW emergency standby generator capable of supplying power to plant loads in case of the utility power outage or failure.

The MCCs consist of standardized, free-standing structures bolted together to form a single dead-front panel assembly containing combination motor control units; feeder units; transformers; lighting panels; and metering, relaying, interlocking, and miscellaneous control devices, as required. The recently installed main MSG switchgear feeds the motor control centers MCC-1, MCC-3 and MSG panelboard. The automatic transfer switches (ATSs) installed in switchgear MSG, transfer electric loads from one (e.g. bus A) power source to the redundant (bus B) power source if there is an interruption or power fail signal of the connected power source.

The redundant MCC-1 and MCC-3 feed the remaining motor control centers, secondary distribution centers, and all other installations required to operate the plants.

The motor control centers are either new, were refurbished recently or converted to the pull box enclosures.

The plant is equipped with standby generator capable of supplying power to entire plant in case of the utility power outage or failure. The engine-generator is a skid-mounted package unit consisting of an engine, an alternator, auxiliary systems, controls, and accessories, all mounted in a weatherproof enclosure and furnished as a complete operating system. The engine-generator automatically starts when initiated by the automatic transfer switch or the plant control system. The engine-generator unit is furnished with a complete fuel system, including diesel fuel storage tank; gauges; fittings; truck unloading facility; all piping, valves, and solenoid valve; all stainless steel flexible connections; and all accessories required for proper operation. The unit is provided with a complete exhaust system, including an exhaust silencer, exhaust piping, expansion joints, and accessories, as well as the radiator cooling system, complete with radiator, expansion tank, water pump, belt driven fan, fan guard, thermostatic temperature control, high water temperature cutout, electric jacket water heater, and all accessories required for proper operation.

The Automatic Transfer Switch (ATS) transfers electric loads from the normal electric power source to an emergency power source. In case of ATS-1, ATS-2 and ATS-3, switches transfer the power from bus A to bus B or vice versa. The transfer switch shall automatically transfer the electrical load circuits upon an interruption or a decrease in the voltage of the normal power source. The electrically operated automatic transfer switches provide the power in such way that the load circuits cannot be connected to more than one power source at a time.

#### **4.1.9 Pumping Equipment**

The WWTP contains numerous small pumps for pumping sludge from the primary and secondary clarifiers, and the gravity thickeners. In addition, polymer is pumped to the gravity thickeners via a progressive cavity pump. These pumps were reported to operate as intended.

## 4.2 Maintenance

Veolia provided monthly reports showing the tracking of maintenance at the WWTP, the collections system, and the down and unders. Maintenance work orders are regularly generated, tracked, and logged using JOB Plus software. SAIC finds based on the information reviewed with Veolia and the records provided, all of the WWTP's systems are being well maintained in accordance with the requirements of the Service Agreement.

## Section 5 FACILITY PERFORMANCE

### 5.1 Facility Performance

The purpose of this section is to determine the compliance of the WWTP performance with the following contractual obligations as set forth in the Agreement Section 5.8:

- Performance Guarantee (ability to meet Effluent Specifications in Schedule M)
- Developing Class “A” Bio-solids
- Change of Law (ability to meet Effluent Specifications under a Change of Law)

### 5.2 Effluent Quality

Section 5.8, part b of the Agreement indicates that Veolia shall operate and maintain the WWTP to treat specification influent in order to produce effluent meeting the specifications in Schedule M. According to Veolia’s annual reports, the plant met all the effluent specifications except for Chloride and Sulfate. Notices of Violation were issued by the California Regional Water Quality Control Board (CRWQCB) for the Chloride and Sulfate exceedances. The chloride and sulfate influent concentrations also exceeded the influent specification levels. The annual average concentrations of BOD<sub>5</sub>, TSS, and Settleable Matter for the last two and a half years are compared to the effluent specifications in Table 5-1 and the annual average concentrations of TDS, Chloride, Sulfate, and Flouride for the last two and a half years are compared to the effluent specifications in Table 5-2.

**Table 5-1  
Effluent Concentrations vs. Effluent Specification Limits**

Year	BOD <sub>5</sub> WWTP Effluent (mg/L)	BOD <sub>5</sub> Effluent Spec (mg/L)	TSS WWTP Effluent (mg/L)	TSS Effluent Spec (mg/L)	Settleable Matter WWTP Effluent (ml/L)	Settleable Matter Effluent Spec (ml/L)
2011	9.87		11.68		<0.1	
2012	11.10	30	14.00	30	<0.1	0.3
2013 <sup>1</sup>	16.40		20.46		<0.1	

<sup>1</sup> Based on data from January through May.

**Table 5-2  
Effluent Concentrations vs. Effluent Specification Limits**

Year	TDS WWTP Effluent (mg/L)	TDS Effluent Spec (mg/L)	Sulfate WWTP Effluent (mg/L) <sup>1</sup>	Sulfate Effluent Spec (mg/L)	Chloride WWTP Effluent (mg/L) <sup>1</sup>	Chloride Effluent Spec (mg/L)	Fluoride WWTP Effluent (mg/L)	Fluoride Effluent Spec (mg/L)
2011	488	400	86.50		83.4		0.38	
2012	488	greater than level in water supply	86.50		78.7		0.50	
2013 <sup>2</sup>	488		91.78	90	77.1	70	0.45	1.2

<sup>1</sup> The influent concentrations of chloride and sulfate exceeded the specification levels indicated in Schedule N of the Agreement.

<sup>2</sup> Based on data from January through May.

The WWTP is not designed to remove chloride and sulfate. Therefore when the influent concentrations exceed the influent specifications then the effluent concentrations follow the same pattern. The concentrations of chloride and sulfate must be controlled at the source to maintain influent specification concentrations. Veolia reports that they have conducted testing in the collection system to identify sources. Veolia has contacted the CRWQCB to provide the collection system testing information and request variances for the allowed effluent concentrations. CRWQCB has indicated to Veolia that they would not be taking any action on the Notices of Violation and may re-evaluate the Waste Discharge Requirements. Veolia reported that CRWQCB is planned to renew the Palm Spring WWTP discharge permit this year.

The 30-day average removal of the pollutant parameter BOD<sub>5</sub> was not less than 65% and typically was in the range of 92.8-94% for BOD<sub>5</sub> between 2011 and 2012 and 91% for the first five months of 2013. The 30-day average removal of the pollutant parameter TSS was not less than 65% and typically was in the range of 99% between 2011 and 2012 and 90% for the first five months of 2013.

The PH of the effluent was maintained within the limits of 6.0 to 9.0 and typically was in the range of 7.3-7.6 of the past two and a half years.

A Notice of Violation was issued to Veolia on April 23, 2013 for a TSS exceedance that occurred on January 24, 2013. This exceedance occurred on a single day due to the tank cleaning and subsequent discharge of sediment from Desert Water Agency. Veolia has requested prior notice from DWA on these types of discharges to allow time to modify system processes and avoid this type of exceedance. On this day, DWA did not contact Veolia about the discharge until after it had already occurred thus not allowing enough time to modify the necessary system processes before the discharge arrived at the plant. No additional exceedances have occurred since then.

### 5.2.1 Compliance Sampling Reports

Veolia's on-site Lab provides daily compliance sampling reports for influent and effluent pH and Settleable Matter. TestAmerica Labs provides compliance sampling reports for the following:

- Biweekly influent and effluent BOD and TSS samples;
- Monthly influent and effluent Chloride, Fluoride, Nitrate, Nitrite, Total Nitrogen, Sulfate, and TDS samples;
- Quarterly effluent samples for Fluoride and VOC;
- Quarterly monitoring well samples for TDS, Sulfate, Chloride, Fluoride, Nitrate, Nitrite, Total Nitrogen and VOC;
- Quarterly sludge samples for Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Molybdenum, Nickel, Selenium, and Zinc.

The compliance sampling reports are submitted to CRWQCB on a daily, semi-weekly, monthly, and/or quarterly basis. Veolia utilizes Hach WMS equipment to obtain 24-hour single composite influent samples at the bar screen and 24-hour single composite effluent samples at the after the secondary clarifier. A check of the compliance sampling reports provided with the monthly operations reports revealed that the WWTP met the monitoring requirements set forth in Schedule E of the Agreement .

### 5.3 Sludge Disposal

Section 5.8, part c of the Agreement indicates that Veolia shall, as an efficiency goal, use commercially reasonable efforts to develop Class A biosolids at the treatment plant. Land application of Class B biosolids is illegal in Riverside County according to Riverside County Ordinance No. 812. Veolia reports that the WWTP is producing a Class B biosolids that is sent to Liberty Composting, where it is treated in the composting process to meet Class A requirements before land application. Liberty Composting provided a certification statement in their 2012 annual report regarding the WWTP biosolids meeting the requirements for Class A certification.

## **6.1 Regulatory Compliance**

Veolia has submitted monthly Discharge Monitoring Reports (DMRs) and annual summaries on the WWTP performance during the reporting period to the California Regional Water Quality Control Board (CRWQCB). During our period of review (last two years - July 2011 through June 2013), the WWTP has complied with regulatory permit limitations for the WWTP except for chloride and sulfate. The discharge permit for the WWTP contains a limit of 70 mg/l of chloride and 90 mg/l of sulfate. Notices of Violation were issued by the California Regional Water Quality Control Board (CRWQCB) for the chloride in January 2013 for exceeding annual average limits for chloride in the Annual Report for 2012 exceedances. In May of 2013, Veolia reported that the average chloride levels in the WWTP effluent had exceeded the permit limitations for 54 consecutive months.

Veolia's obligation to meet the effluent specifications contained in Schedule M of the Agreement is conditioned on the influent to the plant meeting the influent quality specification found in Schedule N. The influent specification limitation found in Schedule N of the O&M Agreement for chloride is 63 mg/l and the sulfate Schedule N influent specification 79 mg/l. Veolia reported in May of 2013 that the chloride influent annual average through May 2013 was 101 mg/l. Additionally, Veolia reported that the influent annual average sulfate through May 2013 was 89 mg/l. SAIC experience also suggests that these levels of sulfate and chlorides in wastewater are within the generally expected range for these constituents found in wastewater.

Chloride and sulfate are natural dissolved minerals present in water as the result of the chemical weathering of rocks. These minerals can also be added to a water to increase their concentration through the use of water softeners, or by additions of these minerals in significant quantities by commercial or industrial dischargers into the WWTP's collection system. Additionally, human wastes also contain an appreciable concentration of chlorides which adds to the dissolved salt loading on a wastewater plant.

Given that the Agreement's provisions are such that Veolia would in all probability be entitled to a grant of relief from compliance with the effluent specifications, the general applicable standard of operator care would be to attempt to mitigate any potential liability of the owner associated with the permit violations. Veolia reported that they "conducted an enhanced monitoring program for chloride and sulfate to better understand their variability and to identify possible sources of these substances. We maintained a bi-weekly testing schedule for chloride in the plant influent and effluent. Additionally, we have sampled the collection system and the water system to identify areas of the highest concentrations. We have also surveyed 286 commercial establishments in Palm Springs to identify those using salt-regenerated water softeners or other processes that may be contributing higher levels of chloride to the wastewater. Only 19 of the 286 commercial establishments use salt-regenerated water softeners at this time." This effort demonstrates that commercial water softeners are not a likely significant cause of the influent water's chloride and sulfate levels.

Veolia reported to SAIC that after their diligence testing on the collections system they found no identified or known significant commercial or industrial source of chlorides and sulfates that appear to be discharge to the collection system.

Veolia represented to SAIC that they had contacted the CRWQCB to provide the collection system testing information and to discuss requesting a variance from the effluent limitations. Veolia further represented that CRWQCB had indicated that they would not be taking any action on the Notices of Violation and may at some point consider re-evaluating the Waste Discharge Requirements. Veolia reported that the WDR Permit Renewal Process is currently underway and that CRRWQCB should send the City a draft proposed permit for the WWTP discharge for review and comment in the near future.

SAIC concurs with Veolia that the City's WWTP is not designed to treat or to remove chloride and sulfate. Further, we concur that there is no economically achievable, best available treatment that would meet this effluent limit at the WWTP. SAIC finds that Veolia, notwithstanding the issuance of Notice of Violations, has complied with the terms and conditions of the Agreement and industry standards for regulatory compliance.

The majority of wastewater treatment facilities have discharges to surface waters and generally do not have discharge limitations on chloride and sulfate. These facilities do have implicit or often explicit limitations on Total Dissolved Solids (TDS) of 500 mg/l. Chloride can constitute up to 50% of the mineral salt that are measured as TDS. The regulatory basis for the TDS limit in wastewater effluents comes from a 500 mg/l limit on TDS in drinking water that is codified in the Safe Drinking Water Act regulations as a secondary drinking water standard. The recommended limit for chloride in drinking water in the Safe Drinking Water Act is 250 milligrams per liter (mg/l). This is the concentration in water where people may begin to notice a salty taste.

SAIC is unaware of any specific regulatory standard that would provide the basis for establishing these specific effluent limitations for groundwater protection.

SAIC strongly recommends that the City seek appropriately qualified technical and/or regulatory expertise to support it during the next WWTP discharge permit renewal to assure that the solution to this matter adequately serves both the general public's and the City's public interests without undue financial hardship to the City's wastewater customers.

## 6.2 Changes in Regulatory Requirements or Standards

SAIC is not aware of any additional proposed changes in Federal and State water quality standards that are probable to affect the WWTP operations.

Presently the WWTP operates under a number of different permits. The permits that SAIC reviewed are as follows:

The California Regional Water Quality Board's Order NO. 93-076 regulating the operation and monitoring of discharge of the WWTP and authorizing the discharge from the plant. The permit does not have a renew date or an expiration date indicated. Veolia represented that the Regional Board's local representative, Jose Cortez, had indicated that they were looking to renew the permit.

The South Coast Air Quality Management District's has issued a "Permit to Operate" for the Diesel Generator at the plant, the Diesel Generator at LS No. 1, the Plant treatment processes in total, the Plant's carbon adsorber and the Waste Gas Burner Assembly (digester gas Flare). These permits all require an annual renew but do not have a specific expiration date indicated.

The copy of the Riverside County DEH Hazardous Material Management Permit for the underground diesel fuel tank at the Wastewater lift Station we received had an expiration date of 7/31/2013. Veolia indicated that they had filed the renewal form and fee on time and that it was a relatively routine procedural matter to get the permit renewed.

## Section 7

# BILLING AND CUSTOMER SERVICES

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### 7.1 Billing Services

Amendment No. 9 to the Agreement states that Veolia shall provide sewer service charge billing services as set forth on Schedule FF. Schedule FF indicates that the sewer service charge customer billing services shall include:

- Billing database auditing
- Payment delinquency program
- Data management
- Monthly billing
- Billing database conversion
- Reporting and data transfer

SAIC reviewed each of these services with Greg Paige, Veolia's Billing Assistant, and a description of how each service has been addressed is provided below.

#### 7.1.1 Billing Database Auditing

Billing database auditing is defined in Schedule FF of the Agreement as the identification of all new customers not currently paying a sewer service charge fee, or all existing customers who have modified their plumbing systems requiring a change to their current sewer service charge fee.

A portion of the City's sewer fees are set by fixture unit counts. Veolia is actively auditing approximately 570 multi-family building parcels to confirm existing database fixture unit counts. Veolia indicated that they recently completed an audit of approximately 800 commercial parcels. Audit activities entail sending out letters to customers requesting their fixture unit counts and verifying counts in the database with customer responses. If the fixture unit counts do not match what is currently in the database then Veolia will conduct an on-site visit to the customers home or facility to physically verify the fixture unit counts and update the database accordingly. Veolia reported that they are currently conducting 15 to 30 on-site visits a month for auditing purposes. Typically on-site visits are conducted on facilities that have large accounts.

In addition, Veolia is working with the City Accounting Department to compile the necessary data for submittal to Riverside County for completion of annual property tax fees.

#### 7.1.2 Payment Delinquency Program

According to Schedule FF of the Agreement, the payment delinquency program shall consist of the following tasks: evaluation of payment delinquency programs from other municipalities; evaluate current State and/or Federal law applicable to sanitary sewer services

and payment delinquency programs; identify and prepare an appropriate payment delinquency program for the City of Palm Springs.

Veolia follows the procedures for managing delinquent accounts outlined below:

**Residential**

- Payments not received within 30 days a past due notice sent to home address or billing address on file.
- Payments not received after past due notice a second past due notice is delivered to residence requesting payment within 10 days.
- Payment not received within the 10 day period a Certified/Return Receipt letter is mailed requesting immediate payment.
- Payment still not received will check ownership of property and a past due letter is mailed directly to the owner if different from person residing at the address. (certified/return receipt)
- If payment is still not received account is transferred to Lola Goetz at City Hall for further processing

**Commercial**

- Payments not received within 10 days after second billing (Approx. 45 days late ) is mailed a past due notice is sent to the tenant or current billing address on file.
- Payments not received within 10 days from past due notice a Certified/Return receipt is mailed to business address or billing address on file requesting immediate payment.
- If Return/Receipt is received by Veolia and payment still not received within 10 days property ownership is determined and a Certified Return/ Receipt is mailed to property owner advising tenant is late and further actions may be taken including court actions and or property liens.
- If tenant still fails to pay the case is transferred to Lola Goetz at City hall for further Processing.

SAIC finds that the payment delinquency programs implemented and managed by Veolia are managed well and consistent with good industry practices.

**7.1.3 Data Management**

According to Schedule FF of the Agreement data management services include: recording ongoing changes in the customer billing data since July 1, 2009, additions and deletions of customers to the billing database, and preparation of electronic billing database reports required by the City.

Veolia indicated that City Hall reviews completed building permits for changes to the number of plumbing fixture units and sends this information to Veolia to update the database with the changes. In addition, Veolia obtains a monthly log provided by the City Building Dept. on new construction. Veolia adds new customers to the database from this information.

Typically customers are not deleted from the database, but instead are inactivated and monitored because the homes or businesses are only temporary vacant.

### **7.1.4 Monthly Billing**

According to Schedule FF of the Agreement monthly billing services include: Coordination of monthly billings for customers not billed through the annual Riverside County tax roll, preparation and mailing of monthly sewer bills, coordinate delinquency program, provide customer service, coordinate sewer service fee charge funds collection to a lock box or via on-line payment; and facilitate monthly funds transfer to the City.

Veolia is currently preparing and sending out 600-700 monthly sewer bills. Veolia's corporate office generates and sends out the monthly bills and inputs payment information. Monthly payments received from customers are sent to a lockbox which is managed by Lighthouse Payments. Lighthouse Payments then electronically transfers the funds generated to the City's Bank of America account. Veolia generates a monthly Accounts Receivable report that provides information on which customers provided payment. Veolia reports the current delinquency rates are low with no accounts greater than 60 days past due. If an account is past 60 days overdue, then Veolia will contact the customer by phone to follow-up on payment. If a bill is still not paid then Veolia may send out certified return-receipt letters and visit the delinquent customer to provide them a copy of the bill. If additional follow-up is required to obtain overdue payment Veolia will contact City Hall.

Customer service tasks performed by Veolia are discussed in Section 7.2 below.

### **7.1.5 Billing Database Conversion**

According to Schedule FF of the Agreement the billing database conversion will include the transfer of all existing data from the City's current billing database to Veolia's billing database system.

Veolia provided the database conversion services required to transfer all existing data from the City's current billing database to Veolia's billing database system.

### **7.1.6 Reporting and Data Transfer**

According to Schedule FF of the Agreement Veolia shall program and produce up to 10 routine billing database reports as required by the City. The billing database reports shall be transmitted electronically.

Veolia provides monthly and annual billing reports to the City. Information summarized in these reports includes: billing adjustment-related activities, audit-related activities, future plans, and customer service data. The billing database is available to the City for viewing and Veolia coordinates directly with the City on any questions.

SAIC finds the Billing Services to be managed consistent with good industry practices. SAIC found the data as represented up to date, and the management of the billing data base quality was being pursued with diligence.

## 7.2 Customer Service

Section 5.2, part i of the Agreement states that Veolia shall maintain a 24-hour telephone number where customers can report emergencies or service problems. Section 5.2, part j of the Agreement states that Veolia shall respond promptly to normal problems and emergencies relating to the WWTP, the Sewage Collection System and/or the Down and Under System, and shall rectify such problems as expeditiously as is reasonably possible.

Customer complaints are logged and tracked back to 2007. The log includes the following information: type of complaint; who took the complaint; location; status of complaint; who responded to the complaint; who did staff talk to when responding; what was said to the customer when responding; and how the complaint was resolved. Veolia indicated that responding to customer complaints is considered a high priority for maintenance staff.

SAIC finds the Customer Services provided by Veolia to be managed consistent with good industry practices.

## Section 8 LEGAL

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SAIC reviewed Veolia's contractual performance to verify that they complied with the provisions of the Agreement. The activities reviewed included auditing permit compliance activities, permit and renewal effective dates, verifying appropriate National Environmental Laboratory Accreditation Conference (NELAC) or state certifications for analysis of wastewater constituents, and review of any noticed of any claims for uncontrollable circumstances during the period of review. Our Contractual (Legal) Review consisted of a review of Veolia's performance to assure that it is in full compliance with the provisions of the Agreement and all other applicable law. In each of the relevant, respective sections of this report SAIC has indicated the applicable contract standard for that area of work and our findings regarding Veolia's contractual performance. These respective sections also provided an individual finding relative to Veolia's performance in that aspect of the Agreement. During our performance review SAIC finds that the overall services Veolia is rendering to be in general conformance to all the requirements of the Agreement and with good industry practices. The existing facilities are aged but remain functional and are maintained regularly. Maintenance management systems and technology utilized were considered best in class with features such as GIS collection mapping and CCTV inspections. Monitoring, documentation and reporting appeared to be compliant with current regulatory requirements. SAIC found Veolia no incidences where Veolia's performance was not in material compliance with the Agreement.

With regard to the provisions of the Agreement indicating the City will lease to Veolia the rolling stock identified in the Agreement (list in Schedule U), Veolia reports that most of the City vehicles in service at the WWTP at the end of the prior Agreement were replaced in 2006/07. Of the vehicles on that list, only the John Deere L6200 and the Camel Jet/Vac are still in use.

## Section 9 FINANCIAL

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Our Financial Review consists of a summary comparison of the overall cost of the operation and maintenance of the wastewater treatment facility in Palm Springs with the overall cost of the operation and maintenance of similar wastewater treatment facilities in the area. The comparison includes direct operating expenses for each of the wastewater treatment facilities to illustrate and compare the power, natural gas, and appropriate solids disposal costs.

In a comparison of this nature, there can be a variety of factors that influence a collection and treatment system's unit cost of operations. Several that we have encountered in this review were economies of scale (utility's size) and the type and extent of treatment performed (e.g. secondary vs. tertiary). These factors are summarily described in the material provided to allow qualitative consideration of these relative differences between the systems compared. Two of the factors that this review could not significantly address, but should nonetheless be kept in mind are; service levels and the concept of value for money. Service levels are accounting for the differences in the level of the services that are actually provided. For a hypothetical example, a water system that provides fire hydrants and full fire flow protection throughout its service area versus another water system that does not provide fire hydrants or fire flow protection in its service area. Both would have actual distribution system costs, but on a unit cost basis, all other characteristics being equal, the second system's unit costs would most likely be significantly lower. The second factor, value for money, is a far more complex concept. As it relates to contract operations, it is the differences between any "off the books" actual O&M costs of a public agency versus the actual fee for service nature of an O&M agreement. For example, once the company is paid for services rendered, an O&M contractor has no further recourse to the City for addition expenses. The O&M agreement is arms-length and has reasonably discrete boundaries. Public agencies do not always have such discrete boundaries around departmental or utility costs, there are often unallocated expenses, and retained liabilities. Pension liabilities are an often-cited example of just such differential that would fall under a value for money consideration.

### 9.1 Introduction

The City's wastewater collection system ("Collection System") and wastewater treatment facilities ("WWTP") serves a permanent population of approximately 45,000, with an additional "seasonal" population of about 30,000. The Sanitary Sewer Collection System consists of approximately 250 miles of collection pipelines. The WWTP is designed for a 30-day average flow of 10.9 MGD. City data indicates the WWTP operated at an average daily flow of approximately 6.05 MGD in 2012 and treated approximately 2,208 million gallons in 2012. Table 9.1 present the monthly data.

**Table 9-1  
Wastewater Treatment Quantities**

Month Year	Volume Treated (MGD)
January 2012	\$ 177.48
February 2012	\$ 171.02
March 2012	\$ 188.52
April 2012	\$ 188.02
May 2012	\$ 188.65
June 2012	\$ 184.66
July 2012	\$ 192.95
August 2012	\$ 179.83
September 2012	\$ 175.26
October 2012	\$ 190.83
November 2012	\$ 190.12
December 2012	\$ 180.81
<b>Total Volume in 2012</b>	<b>\$ 2,208.16</b>
<b>Average Monthly (MGD)</b>	<b>\$ 6.05</b>

Pursuant to the Professional Services Agreement, SAIC was asked to provide a quantitative comparison of the operation and maintenance (“O&M”) costs of the City’s collection and wastewater treatment facilities with up to three (3) similar California wastewater utilities in the region. SAIC prepared and conducted a survey of similarly sized California wastewater utilities to obtain comparable O&M cost information. As required by this report’s scope of work, the cost comparisons are presented in a tabular format on a unitized basis of cost per Million Gallons (MG) for the year 2012. The cost comparison includes the Annual O&M Budget, Average Annual Flow in 2012 in MGD, Total Flow for 2012 in MG and the O&M cost per Million Gallons Treated in 2012 for each utility.

## 9.2 Identification of Utilities for Financial Benchmarking

To provide a meaningful comparison, SAIC obtained data from utilities in the Southern California region with plants that bracketed the average daily flow in 2012 for the Palm Springs system. SAIC is of the opinion that such bracketing is important to provide a perspective about how the Palm Springs WWTP compares to similar utilities and the impact of facility size on unit cost. SAIC obtained data from three nearby utilities, the Valley Sanitation District (Indio, CA), Western Municipal Water District (Riverside, CA), and Eastern Municipal Water District (Perris, CA). Table 9-2 provides an overall comparison of the characteristics of the utilities with the City of Palm Spring’s facility.

**Table 9-2  
Comparison of Utilities Used in Benchmarking**

Utility Characteristic	Palm Springs	Valley Sanitation District	Western Municipal Water District	Eastern Municipal Water District	Eastern Municipal Water District	Eastern Municipal Water District	Eastern Municipal Water District
Plant	Palm Springs	Valley Sanitation District	Western Water Recycling Facility	San Jacinto Valley Regional Water Reclamation Facility	Moreno Valley Regional Water Reclamation Facility	Temecula Valley Regional Water Reclamation Facility	Perris Valley Regional Water Reclamation Facility
Average Daily Flow, MGD	6.05	6.18	0.77	6	11	14	14
Location	Southern California	Southern California	Southern California	Southern California	Southern California	Southern California	Southern California
Secondary or Tertiary Treatment	Secondary	Secondary	Tertiary	Tertiary	Tertiary	Tertiary	Tertiary
Sanitary Sewer Collection System Piping Length, miles	250	245	33	1,684 (total for 5 treatment plants, no breakdown per plant available)			
Number of Sanitary Sewer Pump Stations	5	5	11	45 (total for 5 treatment plants, no breakdown per plant available)			
Biosolids Quality	Class B	Class B	Class A, EQ	Class B	Class B	Class B	Class C
Wastewater Disposal Method	Percolation Pond	Chlorinate, Dechlorinate and Discharge to Surface Water	Reclaim Water	Reclaim Water	Reclaim Water	Reclaim Water	Reclaim Water

While no utilities are ever an exact match, the Valley Sanitation District’s (VSD) system is very similar to the City’s in terms of average daily flow, treatment steps, and collection system size. Some different factors between the City’s system and the Valley Sanitation District’s system relevant to the unit cost comparisons are the fact that the VSD system did not have digesters in 2012, does not pump the effluent to a water-recycling agency and the O&M costs shown for other agencies specifically exclude customer service and billing costs. The other utilities’ facilities who agreed to participate in the benchmarking study

are the Western Municipal Water District and Eastern Municipal Water District. Their facilities bracket the average flows at the City's plant in terms of average daily flow. However, they have more complex treatment processes since they provide tertiary treatment and reclaim water. The City's facility and the VSD's plant provide secondary treatment.

### 9.3 O&M Cost Comparison

Table 9-3 contains the O&M unit cost comparisons. As shown in Table 9-3, the City's composite unit costs per MGD for wastewater collection and treatment are higher than those reported by the Valley Sanitation District and those associated with the Perris Valley Regional Water Reclamation Facility. The City's unit costs are lower than those reported for the other wastewater systems. To determine the cause of the differential in cost between the O&M costs of the City's system and the Perris Valley Regional Water Reclamation Facility would require a detailed site-specific evaluation of the labor and expenses that Eastern Municipal Water District allocates to this plant. That effort is not supported by the O&M cost data provided. Consequently, there is no further information upon which to contrast the O&M unit costs beyond the data presented. SAIC, in consideration of the facts that the City's system does include anaerobic digesters, repumping of the effluent produced, and a provision of a customer service representative and invoicing services, finds that the City's O&M unit costs, given these service level considerations, are favorably comparable to the Valley Sanitation District O&M costs. Overall, SAIC, given the service level and value for money considerations, finds the City's O&M unit costs to favorably compare with the O&M unit costs of all the sampled utilities.

The data for Eastern Municipal Water District's facilities in Table 9-3 also illustrates another noteworthy point. Significant variation in treatment costs can exist even within a single utility. For example, budget information provided by Eastern Municipal Water District shows the San Jacinto Valley Regional Water Reclamation Facility had a unit treatment cost of \$3,248 per million gallons while the Perris Valley Regional Water Reclamation Facility had a unit cost of \$1,159. This is variation in costs within one utility is nearly by a factor of three. In this case, labor is one of the significant factors. The 2012 Labor cost for the San Jacinto Valley Regional Water Reclamation Facility is reportedly \$1,763,191, which translates to a unit cost for labor of \$805 per million gallons. In contrast, the Perris Valley Regional Water Reclamation Facility (lowest overall unit O&M cost) had a unit cost for labor of \$477 per million gallons. This data demonstrates the paramount impact of inherent plant efficiencies, or labor accounting allocations on unit costs.

Similarly, the data from the Western Municipal Water District and the Eastern Municipal Water District illustrate the impact of economies of scale. The Western Water Recycling Facility has an average flow of approximately 0.77 MGD and a unit treatment cost of \$3,863 per million gallons. Consequently, and consistent with expectations, the Western Water Recycling Facility has the highest unit cost of the facilities in the survey, and it is

more than double the average unit costs of the Eastern Municipal Water District's systems (\$3,863 per million gallons versus \$1,857 per million gallons). However, we also should note, that even though the total annual treated water volume in the Eastern Municipal Water District's systems is nearly 8 times larger than the City's wastewater volume, the City's unit cost is about 20 percent lower. This illustrates the impact of secondary versus tertiary treatment on unit costs.

To make the electricity consumption data more meaningful, SAIC has provided a comparison of unit costs for electricity based treatment plant consumption. SAIC selected this approach to minimize the impact of collection system pumping costs. The data shows that the City's unit cost for electricity is the lowest of the utilities participating in the benchmarking evaluation.

**Table 9-3  
Treatment Plant O&M Cost Comparison**

Comparison Factor		Palm Springs	Valley Sanitation District	Western Municipal Water District	San Jacinto Valley Regional Water Reclamation Facility	Moreno Valley Regional Water Reclamation Facility	Temecula Valley Regional Water Reclamation Facility	Perris Valley Regional Water Reclamation Facility
Wastewater Processed in 2012 <sup>(1)</sup>	MG	2,208	2,257	280	2190	4,015	5,110	5,110
Treatment Plant and Collection System O&M Budget for 2012	\$	4,234,000 <sup>(2) (3)</sup>	\$3,537,586 <sup>(4)</sup>	\$900,000	\$6,785,417	\$7,378,777	\$9,260,825	\$6,153,056
Actual Treatment Plant and Collection System O&M Cost in 2012	\$	\$3,392,430 <sup>(3)</sup>	\$3,156,494.00	\$1,081,761	\$7,113,936	\$7,282,186	\$9,226,548	\$5,924,559
Treatment Plant and Collection System Unit O&M Cost in 2012	\$/MG	\$1,536 <sup>(3)</sup>	\$1399	\$3,863	\$3,248	\$1,814	\$1,806	\$1,159
Treatment Plant Unit Cost of Electricity in 2012	\$/MG	\$138 <sup>(5)</sup>	\$232	\$613 <sup>(6)</sup> GD	\$167	\$255	\$151	\$244
Treatment Plant Unit Cost of Natural Gas in 2012	\$/MG	\$7.00	\$0.27	See Note 6	\$21.60	\$37.11	\$134.24	\$36.81

1) Rounded to nearest million gallons

2) 2012 budget calculated as 50 percent of FY 2011-12 and FY 2012-13 budgets for Materials, supplies, and services as presented in the "City of Palm Springs 2012-13 Annual Budget."

3) Budget and actual O&M costs based on Veolia invoices and bills for electricity and natural gas. Does not include Capital Projects, Depreciation, Special Charges, Debt Service, or Personnel Services.

4) Adjusted to exclude Capital Projects, Depreciation, Special Charges, Debt Service, and Personnel Services.

5) Electricity costs for the City of Palm Springs treatment plant estimated for January through March 2012 based on volume of wastewater treated and average unit price of \$0.105 per kWh. Actual electric bill information for the treatment plant was not available for the January through March 2012 time period.

6) Electricity value includes natural gas and water - No breakout for individual utilities provided.

Similarly, the City's unit cost for natural gas is lower than all those except for the Valley Sanitation District's unit cost. The Valley Sanitation District's unit cost is somewhat skewed because their facility did not have digesters during the period of time in which the cost histories were developed. These have only recently been installed. Thus, depending on digester gas production, energy content, and use as fuel for digester heating and on-site generation of electricity, we would expect Valley Sanitation District's unit cost for natural gas to increase and their unit costs for electricity to decrease to some extent.

## 9.4 Summary

Based on our review, we are of the opinion that:

1. The City's O&M unit cost per MGD for wastewater collection and treatment, given the service level considerations, overall compares favorably with the O&M unit costs of the sampled utilities that participated in the benchmarking study.
2. The City's unit cost per MGD for electricity and natural gas are comparable to the unit costs reported by the other utilities participating in the benchmarking study.
3. There are a multitude of factors such as economies of scale, treatment process steps, impact of inherent plant efficiencies that can affect unit costs both between utilities and within a single utility. Thus, benchmarking provides a high level comparison of unit costs unless a detailed evaluation is conducted for each utility/wastewater system included in the benchmarking analysis.

## Section 10 RECOMMENDATIONS

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In the course of our performance review SAIC witnessed a number of matters that bear being presented to the City and Veolia as recommendations for consideration of additional actions or future consideration. The following recommendations are excerpted from the body of this report for ease of consideration:

**Spill Prevention Control and Counter Measure Plan:** SAIC recommends that the Spill Prevention Control and Counter Measure Plan should be updated, only as needed, annually. The annual update should include at a minimum the section that validates that relevant contact names and phone numbers are current on the date recorded for that update.

**Emergency Response and Contingency Plan:** SAIC recommends that the Emergency Response and Contingency Plan should be updated in a typed format (vs. hand written into the document) and that the update date and the signature of the authorized representative of party responsible be added to the document and the document be updated, only as needed, annually.

**Hazardous Materials Inventory and Business Emergency Plan:** SAIC recommends that the Hazardous Materials Inventory and Business Emergency Plan should be updated in a typed format (vs. hand written into the document) and that the update date, and the signature of the authorized representative of party responsible be added to the document. The document should be updated, only as needed, annually.

**Sanitary Sewer Management Plan:** SAIC recommends that the Sanitary Sewer Management Plan be updated and recertified by the City as required, and thereafter be updated annually only as needed. The annual update should include, at a minimum, the section that validates that relevant contact names and phone numbers are current on the date recorded for that update.

**Anaerobic Digester Gas Collection System:** SAIC recommends that Veolia and the City consider rehabilitation of the anaerobic gas metering system to change the materials to be corrosion resistant and made of corrosion resistant materials like stainless steel.

**Arc Flash Protection Warning Signage: (3.1.3.7):** SAIC recommends that Veolia review the sufficiency of the arc flash warning labels posted on site to determine if additional labeling may be required for compliance with the Arc Flash Protection Warning signage standards.

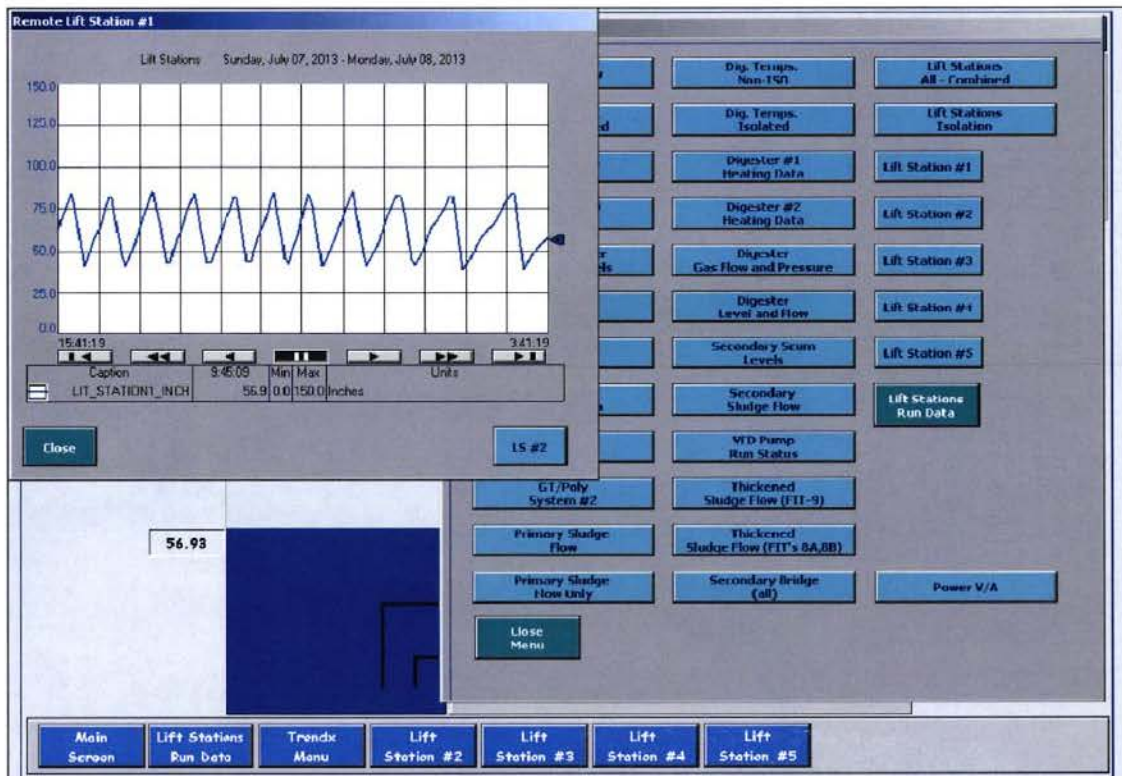
**Lift Station No.1 HVAC System:** SAIC recommends that Veolia repairs or rehabilitates the existing Lift Station No. 1 HVAC system up to a fully operational condition or validate that the ventilation is adequate to maintain the pumps station's current categorization as not being a confined space under the OSHA confined space standard.

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**Chloride and Sulfate Regulatory Compliance:** SAIC strongly recommends that at the appropriate time, the City seek appropriately qualified technical and/or regulatory expertise to support it during the next WWTP discharge permit renewal to assure that the solution to this matter adequately serves both the general public's and the City's public interests without undue financial hardship to the City's wastewater customers.

## Appendix A

### Lift Station pump run and trending data from the SCADA program



		Tuesday, July 09, 2013			Lift Stations Run Data		12:15:18 AM	
		Pump Run Hours						
		Current Day	Previous Day	Lifetime	Pump Starts Previous Day	Last Successful Communication		
Lift Station #1	Pump #1	0.08	3.78	6179.86	12.00	07 / 09 / 2013		
	Pump #2	0.00	3.47	6421.01	11.00	0 : 12 : 06		
Lift Station #2	Pump #1	0.00	2.20	8846.66	25.00	07 / 09 / 2013		
	Pump #2	0.08	2.27	7560.21	25.00	0 : 13 : 56		
Lift Station #3	Pump #1	0.00	0.36	1636.44	3.00	07 / 09 / 2013		
	Pump #2	0.03	0.37	1721.14	3.00	0 : 14 : 06		
Lift Station #4	Pump #1	0.00	0.26	1545.04	4.00	07 / 09 / 2013		
	Pump #2	0.00	0.22	1565.36	4.00	0 : 15 : 16		
Lift Station #5	Pump #1	0.00	0.47	1892.17	21.00	07 / 09 / 2013		
	Pump #2	0.00	0.55	1999.31	21.00	0 : 17 : 02		
							0.233333	

Close    Print Display

# Appendix B Pipe cleaning work order example

Pipe cleaning work order example

Page 1

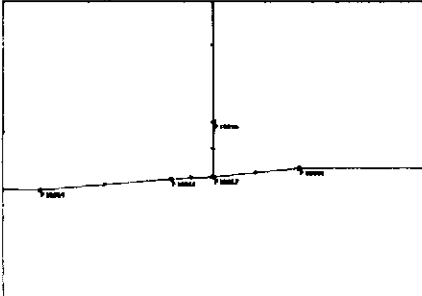
## Collection Pipe Clean

SOP and Literature:

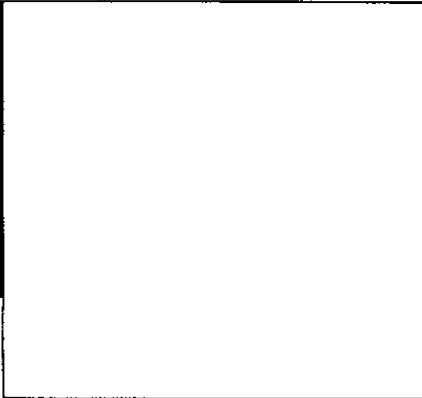
I have read and understand the cleaning and safety procedures associated with this task:

Yes

Location Sketch:



Location Photo:



Date/Time Scheduled:

US MH ID:

Street:

DS MH ID:

Purpose of Cleaning:

Project Number:	Priority:
33020100	Low
Date/Time Started:	Cleaning ID:
	F10096_F10067_531B7_46
Technician:	Contractor:
Hugo Guevara	Veolia Water North America
Distance Flushed: (ft)	# of Passes:
46	2
Crew Verified Distance Flushed is Accurate:	Cleaning Method:
Yes	Spinner Nozzle
Pipe Material:	Pipe Diameter: (in)
Vitrified Clay Pipe	8
DS Invert depth (ft):	
Flow before flushing	Flow after flushing
Water Used (gallons):	Location of Water Source:
Debris Type 1:	Debris Type 2:
Grease	
Debris Type 3:	Debris Tonnage (if applicable):

Attachments

No attachments provided in this example.

Notes:

Resource Details:

Resource ID:	Estimated hours	Actual hours:	Actual overtime hours:	Actual double time hours:
4011				
408				
409				
Buddy Knoles				
Hugo Guevara				
Eric Rymer				
Henry Bravo				
Manuel Lopez				

Date/Time Completed:


Status:

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# Appendix C

## Screen shot of the CIWQS data base

California Integrated Water Quality System (CIWQS 8.6.2) - Build Number: 06.06.2013.... Page 1 of 1



Menu Help Logout

Navigate to:

You are logged in as: dbaraban. If the account does not belong to you, please log out.

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**SSO - Sewer System Management Plan (SSMP)** SSO Menu

Regional Water Board: Region 7 - Colorado River Basin  
 Agency: Palm Springs City  
 Sanitary Sewer System: Palm Springs CS  
 WQID: 755010536

Last Updated:

SSMP Element	Certification Date
Development Plan and Schedule	11/01/2007 (Date Format: MM/DD/YYYY)
Section I - Goal	11/01/2007 (Date Format: MM/DD/YYYY)
Section II - Organization	11/01/2007 (Date Format: MM/DD/YYYY)
Section III - Legal Authority	10/01/2006 (Date Format: MM/DD/YYYY)
Section IV - Operation & Maintenance Program	08/02/2007 (Date Format: MM/DD/YYYY)
Section V - Design & Performance Provisions	11/01/2007 (Date Format: MM/DD/YYYY)
Section VI - Overflow Emergency Response Plan	12/01/2008 (Date Format: MM/DD/YYYY)
Section VII - FOG Control Program	12/01/2008 (Date Format: MM/DD/YYYY)
Section VIII - System Evaluation & Capacity Assurance Plan	02/01/2009 (Date Format: MM/DD/YYYY)
Section IX - Monitoring, Measurement, and Program Modifications	07/15/2009 (Date Format: MM/DD/YYYY)
Section X - SSMP Program Audits	07/07/2011 (Date Format: MM/DD/YYYY)
Section XI - Communication Program	08/02/2006 (Date Format: MM/DD/YYYY)
Complete SSMP Implementation	07/15/2009 (Date Format: MM/DD/YYYY)

Note: 'Complete SSMP Implementation' is only available for input only if all its above sections filled.

Note: The Certification Note and Certified By fields disappear after certifying your SSMP. Previous entries can be seen on the Historic SSMP Information screen.

Certification Note:


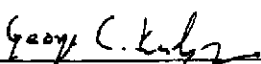
5-Year Update:  (Date Format: MM/DD/YYYY)

Certified by:

Note: Questions with "\*" are required to be answered before CERTIFY.

Historic

Appendix D  
NELAP certification

	
<p>CALIFORNIA STATE ENVIRONMENTAL LABORATORY ACCREDITATION PROGRAM BRANCH</p> <p><b>CERTIFICATE OF ENVIRONMENTAL ACCREDITATION</b></p> <p>Is hereby granted to</p> <p><b>Palm Springs Wastewater Treatment Plant</b></p> <p><b>Us Filter Operating Services</b></p> <p>4375 Mesquite Avenue Palm Springs, CA 92264</p> <p>Scope of the certificate is limited to the "Fields of Testing" which accompany this Certificate.</p> <p>Continued accredited status depends on successful completion of on-site, proficiency testing studies, and payment of applicable fees.</p> <p>This Certificate is granted in accordance with provisions of Section 100825, et seq. of the Health and Safety Code.</p> <p>Certificate No.: <b>1089</b> Expiration Date: <b>12/31/2013</b> Effective Date: <b>01/01/2012</b></p> <p>Richmond, California subject to forfeiture or revocation</p> <p style="text-align: right;"> George C. Kuisingam, Ph.D., Chief Environmental Laboratory Accreditation Program Branch</p>	



NELAP - RECOGNIZED



CALIFORNIA STATE

ENVIRONMENTAL LABORATORY ACCREDITATION PROGRAM BRANCH

**CERTIFICATE OF NELAP ACCREDITATION**

Is hereby granted to

**Testamerica Irvine**

**Irvine**

17481 Derian Avenue, Suite 100  
Irvine, CA 92614

Scope of the Certificate is limited to the  
"NELAP Fields of Accreditation"  
which accompany this Certificate.

Continued accredited status depends on successful  
ongoing participation in the program.

This Certificate is granted in accordance with provisions of  
Section 100825, et seq. of the Health and Safety Code.

Certificate No.: **01108CA**

Expiration Date: **1/31/2014**

Effective Date: **2/1/2013**

Richmond, California  
subject to forfeiture or revocation

  
David Mazzera, Ph.D., Assistant Division Chief  
Division of Drinking Water and Environmental Management

Appendix E  
PHOTOS

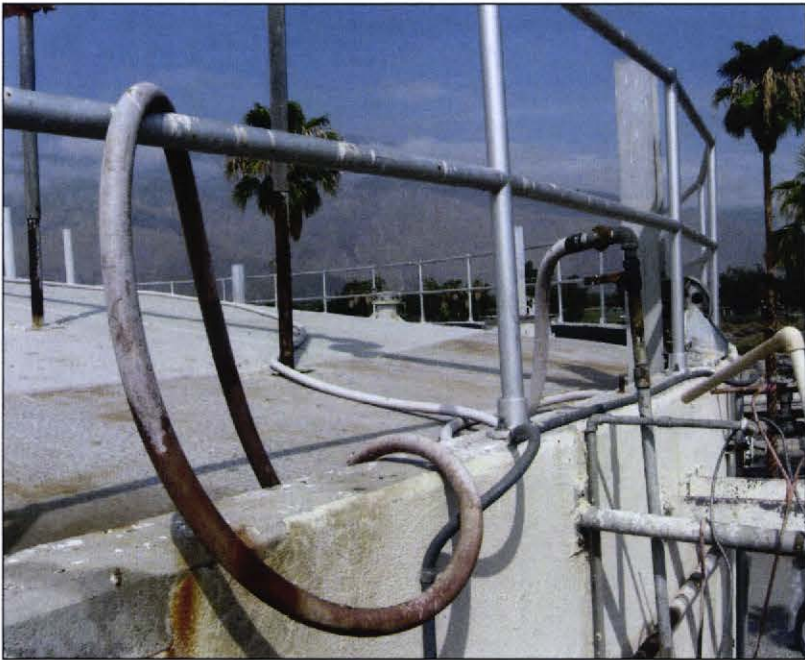
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Photo of Anaerobic Digester Gas Flow Metering Section



Photo of the Digester Gas Flare



Photos of Corrosion on Anaerobic Digester No. 1 Cover



Photos of Slope Erosion Occurring near Trickling Filter #1



Photo of Palm Trees adjacent to the Trickling Filter Effluent Channel



Photo of Palm Trees adjacent to the Secondary Clarifier



Photo of Palm Trees near Trickling Filters



Photo of Damage to Concrete Containment



Photo of corrosion on hydro-pneumatic tank at Lift Station No. 1



Photo of corrosion on hydro-pneumatic tank at Lift Station No. 1



Photo of Lift Station No. 1 wet well coating damage



Photo of Lift Station No. 1 Pumps and Valves



Photos of Lift Station No. 1 Pumps and Valves



Photo of Lift Station No. 1 Pumps and Valves



Photo of Emergency Generator at Lift Station No. 4



Photo of Standing Water at Recycled Water Pump Station