



The Superior Court
COUNTY OF SAN JOAQUIN
222 E. WEBER AVENUE, ROOM 303
STOCKTON, CALIFORNIA 95202

TELEPHONE
(209)992-5695
WEBSITE
www.sjcourts.org

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Contact: Trisa Martinez
Judicial Secretary
(209) 992-5290

SAN JOAQUIN COUNTY CIVIL GRAND JURY RELEASES REPORT ON STOCKTON'S MUNICIPAL UTILITIES DEPARTMENT

Stockton officials should quickly address critical staffing needs in the City's Municipal Utilities Department, according to a report issued today by the San Joaquin County Civil Grand Jury.

The recommendation was one of a number made by the jurors who also expressed concerns about potential pipe failures caused by corrosion from hydrogen sulfide in sewer lines and levee settling at the Delta Water Treatment Plant's Intake Pump Station on the San Joaquin River that caused electrical and plumbing failures.

In March, MUD had 27 vacancies. In 2014, MUD overtime costs exceeded \$1 million. Jurors found significant worker turnover in the department that has had difficulty attracting and retaining skilled technical staff. At one point, the department's relatively new Delta Water Treatment Plant had to be closed four months because there was no one on staff with the proper certification to run it. The City then needed to obtain water from other sources at a higher cost.

The Grand Jury's recommendations are based on a months-long investigation that included witness interviews, tours of various facilities and the review of thousands of pages of documents. The Jury's recommendations are meant to strengthen MUD's operations.

The Stockton City Council is required to submit a response to each finding and recommendation in the report. Those responses must be sent to the Presiding Judge of the San Joaquin County Superior Court within 90 days.

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San Joaquin County Grand Jury



STOCKTON MUNICIPAL UTILITIES DEPARTMENT *Struggling in the MUD*

2014-2015 Case No. 1412

Summary

Most citizens take for granted that when they turn on the tap, flush the toilet or watch the rain fill the street gutters that systems are in place to make sure safe drinking water arrives, wastewater is eliminated, and the street drains carry away potential flood waters. These services are vital to the health and safety for all of us, but until there is a problem their functions are often “out of sight, out of mind.” Unfortunately, an investigation by the Grand Jury prompted by a complaint indicates serious, ongoing problems within the operations of Stockton Municipal Utilities Department (MUD). These problems exist, in large part, because of three major events over the years, including privatizing MUD operations for several years, the City bankruptcy, and staff turnover that has undermined much of the utility’s important institutional knowledge.

This is not to suggest that there are not good, dedicated, and knowledgeable people at MUD; it is to suggest there are problems that must be addressed in an open and transparent way.

Among the findings uncovered by the Grand Jury:

- There is ground settling at the relatively new Intake Pump Station (IPS) on the San Joaquin River that has resulted in the failure of electrical and plumbing fixtures.
- Corrosive hydrogen sulfide (H₂S), which builds up in sewer lines, has gone untreated for more than two years. This exacerbated infrastructure defects, resulting, among other things, in the collapse of a 36-inch sewer pipeline under a community garden, ongoing residential complaints about odors, and raising safety concerns for MUD workers.
- The City bankruptcy intensified staff turnover, including critical technical personnel and top management. Pay and benefit cuts have resulted in low staff morale.

Addressing these problems will not be quick, easy or cheap, but unless they are addressed future costs will be much higher. With that in mind, among the Grand Jury's recommendations are:

- The Director of MUD report at least annually to the Stockton City Council about ground settling and related repairs and costs at the IPS.
- The Director of MUD report plans for dealing with the hydrogen sulfide problems in the City's sewer lines.
- The City Manager conduct a salary survey of MUD positions with an eye toward bringing wages and benefits into line with other utility departments or water agencies so the City can better compete for these valuable employees.

Glossary

CCTV	Closed-Circuit Television
Cal/OSHA	California/Occupational Safety and Health Administration
City	City of Stockton
CMMS	Computer Maintenance Management System
COSMA	City of Stockton Metropolitan Area
CSPA	California Sportfishing Protection Alliance
DWTP	Delta Water Treatment Plant
Grade 5	Grade 5 Structural Defect – Immediate Failure Likely
HJTA	Howard Jarvis Taxpayers Association
H₂S	Hydrogen Sulfide
IIPP	Injury and Illness Prevention Program
IPS	Intake Pump Station
MUD	Municipal Utilities Department
NES	Network Environmental System
PEL	Permissible Exposure Limit
ppm	parts per million
SEWD	Stockton East Water District
SSOs	Sanitary Sewer Overflows
TWA	Time-Weighted Average

Background

The Municipal Utilities Department provides administration, planning, operations, and maintenance for the three utilities owned by the City: Water, Sanitary Sewer, and Stormwater. These services are provided to residential, commercial, and industrial customers within the City of Stockton Metropolitan Area (COSMA). MUD also furnishes wastewater services to several San Joaquin County service areas and special districts outside the City. MUD operates and maintains a water system that obtains raw water from wells and surface water it treats and delivers to connections via a pumping and piping system. MUD operates and maintains a wastewater system that collects wastewater from connections via a network of sewer pipes that flow by gravity to pump stations throughout the system. The pump stations send the wastewater to a treatment plant that removes the regulated pollutants from the wastewater prior to discharge in the San Joaquin River. MUD operates and maintains a stormwater system with pump stations that remove rainwater to control flooding.

MUD has undergone significant challenges and organizational transitions during the past 15 years. Most significantly, in 2003 the Stockton City Council awarded a \$600 million, 20-year contract to a private company, OMI/Thames, to manage and operate its utilities. Control of the utilities was returned to the City when the service contract with OMI/Thames terminated in March 2008.

On March 24, 2009 the Stockton City Council approved a settlement with the Howard Jarvis Taxpayers Association (HJTA). The association sued in an effort to invalidate the City's practice of charging water, sewer, and stormwater customers a fee in lieu of property tax on their utility bills, transferring that revenue to the City's general fund and the infrastructure reinvestment fund, and expending it for general governmental purposes (e.g. Stockton Arena and Ballpark). In the settlement with HJTA, the City agreed to repay the City utility fund approximately \$34 million over a 30-year period.

On July 28, 2009 the City Council approved a settlement agreement in the form of a Consent Decree with the California Sportfishing Protection Alliance (CSPA). The City had been sued by the CSPA that alleged the City had violated the Federal Clean Water Act for discharges of pollutants in violation of the 2002 National Pollution Discharge Elimination System Permit. The CSPA's research identified over 1,500 overflow/spills, or almost 25 spills per 100 miles of sewer line per year. The main objective of the Consent Decree was a spill reduction performance standard of five reportable sanitary sewer overflows (SSOs) per 100 miles of sewer line. It also mandated that the City complete a one-time closed circuit television (CCTV) inspection of all sanitary sewer pipelines between 6- and 72-inches in diameter in order to assess the condition, rehabilitation, and replacement of its pipelines. Because the City did not meet the requirement of five SSOs per 100 miles of sewer lines by 2013, the CSPA agreed to extend the end date of the Consent Decree to December 31, 2015. In a multi-million dollar effort, over 737 miles of sewer mains (24-inch and smaller pipes) have been cleaned and inspected. The remaining work will focus on the CCTV inspection and cleaning of 115 miles of sewer mains 24-inch and larger.

On May 26, 2010 the City Council declared a state of emergency based on fiscal circumstances. The City's fiscal health continued to deteriorate in fiscal years 2010-11 and 2011-12 despite various cost cutting measures. The Delta Water Supply Project, completed on June 26, 2012, was the largest capital improvement project in Stockton's history at \$217 million. Two days later, on June 28, 2012, the City filed a petition for Chapter 9 bankruptcy relief.

On March 4, 2014 the City Council approved a settlement and paid \$2,675,000 to Preston Pipelines, which had sued for breach of contract related to the Delta Water Supply Project Intake and Pump Station Facility (Preston served as the general contractor).

On February 25, 2015 the City's Plan of Adjustment, or "bankruptcy exit plan," became effective. The remaining \$30 million still owed from Stockton's general fund to its water and wastewater funds (as stipulated in the HJTA settlement) was extinguished as a result of the bankruptcy. Though MUD operates with enterprise funds, which are separate from the City's general fund, it suffered collateral damage during the bankruptcy and now struggles with issues related to significant staff turnover, aging infrastructure, and impaired ability to recruit and retain skilled technical staff, due to below-market compensation.

Reasons for Investigation

The Grand Jury received a complaint on September 10, 2014 alleging mismanagement of MUD assets and failure to comply with safety regulations or to address infrastructure deficiencies. Allegations included safety and infrastructure concerns related to ground elevation changes on non-pile supported areas of the levee at the inlet site for the Delta Water Supply Project; hydrogen sulfide (H₂S) exposure to employees and its corrosive effects on infrastructure; and descriptions of a stressful work environment and low employee morale. Through its investigation the Grand Jury found that H₂S treatment had been discontinued in 2012, allowing pipe corrosion to worsen, and in one instance caused a 36-inch sanitary pipeline collapse in Boggs Tract Community Garden; solid manhole covers were used to decrease H₂S odor complaints particularly in Southern Industrial Collection Systems 7 and 8 [See **Appendix A**]; Cal/OSHA violations and fines were levied against the utility; and MUD was compelled to devote significant staff time and millions of dollars toward efforts to comply with the CSPA Consent Decree. During the time the utility was operated by OMI/Thames equipment appeared to be operated in a "run-to-fail" mode. In a "run-to-fail" strategy, assets are deliberately allowed to operate until they break down, at which point reactive maintenance is performed. No maintenance, including preventative maintenance, is performed on the asset up until the failure event. This left MUD with prematurely deteriorated assets, the effects of which the utility continues to address.

Method of Investigation

The 2014-15 Grand Jury's investigation was comprised of MUD facility tours, staff interviews, and the review of hundreds of pages of materials provided by MUD, the City's Administrative Services department, as well as publicly available documents.

Materials Reviewed

- MUD Safety Committee meeting minutes (January 2013 to August 2014)
- Communications to and/or from Caltrans, Cal/OSHA, Environmental Protection Agency
- Maps indicating location of pipes with Grade 5 structural defects
- MUD Safety Policies and Procedures
- Reports of odor complaints to MUD (2008 to November 2014)
- Agreement for Purchase of Goods 50% Sodium Hydroxide (2013)
- Work order for repair due to sanitary pipeline collapse in Boggs Tract Community Garden
- National Pollution Discharge Elimination System Permit
- CCTV inspection schedule
- California Sportfishing Protection Alliance Consent Decree, Annual Reports, SSO Cause Determination and Reduction Action Plan
- MUD and Public Works budgetary information
- Preston Pipelines, Inc., Santa Clara County Superior Court Case No. 113CV252946
- Reclamation District 2029 communication pertaining to Intake Pump Station
- Kleinfelder Preliminary Assessment of Ongoing Settlement DWSP Intake Facility (October 29, 2012)
- HDR Levee Settlement Monitoring DWSP Intake and Pump Station Facility (February 12, 2015)
- State Water Resources Control Board regulations

Interviews Conducted

- During this investigation the Grand Jury interviewed 16 people consisting of the complainant, management and staff at various levels and divisions of MUD, as well as Public Works and the City's Administrative Services department.

Sites Visited

- Delta Water Treatment Plant and the Intake Pump Station (November 3, 2014)
- Regional Wastewater Control Facility (November 10, 2014)
- Duck Creek Pump Station (November 14, 2014)
- Boggs Tract Community Garden (November 20, 2014)
- Van Buskirk Park Utility Vault (December 2014 and March 2015)

Facts, Findings, and Recommendations

1.0 Delta Water Treatment Plant/Intake and Pump Station Facility

On November 3, 2014 the Grand Jury toured the Delta Water Treatment Plant (DWTP) and Intake Pump Station (IPS). The primary purpose of the Delta Water Supply Project was to provide a secure, reliable supplemental supply of water for the City of Stockton Metropolitan Area (COSMA), to replace declining and unreliable surface water supplies, and to protect and restore groundwater resources. The DWTP is capable of supplying up to 30 million gallons per day of drinking water to Stockton residents. The IPS is located on the south bank of Empire Tract, 6,000 feet south of the intersection of West Eight Mile Road and Correa Road at the San Joaquin River. The IPS draws water from the Sacramento-San Joaquin Delta for treatment and distribution to the COSMA. The facility was constructed on an existing levee, which was raised and widened with engineered fill. The existing levee is underlain by a layer of 10 to 25 feet of peat soils, which are compressible and have low strength. All non-pile supported areas on the levee, including the generator yard, are subject to changes in soil compaction. The February 12, 2015 HDR, Inc. Levee Settlement Monitoring report states that the total settlement along the 54-inch diameter water line between July 2, 2012 and January 14, 2015 was nearly one foot.



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At the time of the Grand Jury's tour signs of ground elevation changes were visible at the IPS, e.g. sections of concrete and asphalt were out of alignment and were roped off with yellow caution tape. [See **Appendix B**] During its investigation, the Grand Jury learned that the employee bathroom at the IPS had not been functional since August 2013, due to ground settlement. Despite repeated staff requests, a portable toilet was not installed until March 2015.

The Grand Jury requested copies of all work orders for the IPS and were informed that the system that manages and produces the work orders, referred to as the Computer Maintenance Management System (CMMS), was not producing work orders from 2012 through 2014, due to City staff oversight. In 2015 this system became operational. MUD acknowledged that maintenance activities had been performed at the IPS, but not tracked through the CMMS. Information provided to the Grand Jury regarding repairs completed at the IPS since 2012 included approximately \$8,000 for fish screen cleaner replacement, \$1,000 for alarm repair, and more than \$27,000 to replace a flexible expansion joint on the 54-inch raw water pipeline.

A Cal/OSHA complaint was filed regarding conditions at the IPS and MUD acknowledged in its January 2, 2015 response that the area experienced subsidence. As a result, electrical wiring was exposed at the north side of the pump house and the generator yard. Repairs by an outside contractor were expected to proceed by the end of March 2015 at a cost of nearly \$40,000. An assessment of the potential settlement in the area of the IPS by its design engineer HDR, Inc. was to be completed by April 30, 2015.



North Side of Pump House

Electrical repairs necessitated by ground settling on the north side of the IPS pump house. Source: Bid Request - Delta Water Supply Project, Intake Pump Station

In order to operate the DWTP, minimum certification levels of T5 for the chief plant operator and T3 for the shift operator are required in accordance with Title 22 of the California Code of Regulations. “Chief Plant Operator” is defined as the person who has overall responsibility for the day-to-day, hands-on, operation of the water treatment facility. DWTP currently has only one staff member with a Grade T5 certification. Without a T5 operator the DWTP has to shut down and water is drawn from other sources, such as Stockton East Water District (SEWD), which draws its water from New Hogan and Melones reservoirs. MUD also needs to pump wells to meet peak demand during hot, dry months. When this occurs, the City is charged a pumping tax. The table below, provided by MUD, shows the pumping tax paid since 2012. The February 28, 2015 payment of more than \$1 million covered the calendar year of 2014. The DWTP was shut down for approximately four months in 2014 due to low staffing levels.

Stockton East Water District Pumping Tax				
Payment Date	Amount		F/Y	YTD
02-28-12	\$630,385.34		11/12	\$630,385.34
10-25-12	\$597,985.64		12/13	
2012 Total		\$1,228,370.98		
02-28-13	\$77,721.22		12/13	\$675,706.86
10-01-13	\$339,550.93		13/14	
2013 Total		\$417,272.15		
02-28-14	\$425,535.81		13/14	\$765,086.74
10-01-14	\$403,790.47		14/15	\$403,790.47
2014 Total		\$829,326.28		
02-28-15	\$1,122,000.00		14/15	\$1,122,000.00

Source: MUD

Findings

F1.1 Non-pile supported areas at the IPS are shifting as evidenced by changes in ground elevation, which has caused concern about employee safety and the integrity of equipment and buried electrical systems and conduits in the generator yard and other areas.

F1.2 The DWTP was shut down for approximately four months in calendar year 2014 due to low staffing levels, which caused an increase in the SEWD pumping tax and further depleted declining water supplies.

Recommendations

R1.1 The City Council direct (*through the City Manager*) the Director of MUD to complete needed repairs at the IPS by September 2015 to ensure work areas are safe for employees and to report back annually to the Council regarding the status of IPS ground settling and associated repairs and costs.

R1.2 The City Council direct (*through the City Manager*) the Director of MUD to determine what portion of the SEWD pumping tax is directly related to DWTP shutdown due to the lack of qualified staff in calendar year 2015 and report findings to the City Council by January 2016.

2.0 Safety and Infrastructure Concerns

The complainant alleged that mismanagement of assets included the discontinuance of H₂S treatment. This prematurely corroded infrastructure and worsened a problem that was known to exist for many years. H₂S is a colorless, flammable, extremely hazardous gas with a “rotten egg” smell. H₂S is produced by bacterial breakdown of organic materials and human and animal wastes (e.g. sewage). H₂S can also exist as a liquid compressed gas. H₂S is heavier than air and may travel along the ground. It collects in low-lying, enclosed, and poorly ventilated areas such as manholes and sewer lines. The primary route of exposure is inhalation and the gas is rapidly absorbed by the lungs. People can smell the “rotten egg” odor of H₂S at low concentrations in the air. However, with continuous low-level exposure, or at high concentrations, a person loses the ability to smell the gas even though it is still present.

Nearly 200 customer odor complaints were received by MUD from 2008 to 2013, the most recent data requested, of which more than 30 were specifically described as a “rotten egg” smell. One method MUD used to deal with these complaints was to install solid non-vented manhole covers.

A visual inspection of the utility vault at the southeast corner of Van Buskirk Park showed significant deterioration on the two-year-old vault doors and hinges. [See **Appendix C**] In December 2014, a strong “rotten egg” odor emitted from open spaces on top of the vault. Additionally, the cyclone fence and posts, 26 feet from the utility vault, showed signs of corrosion.

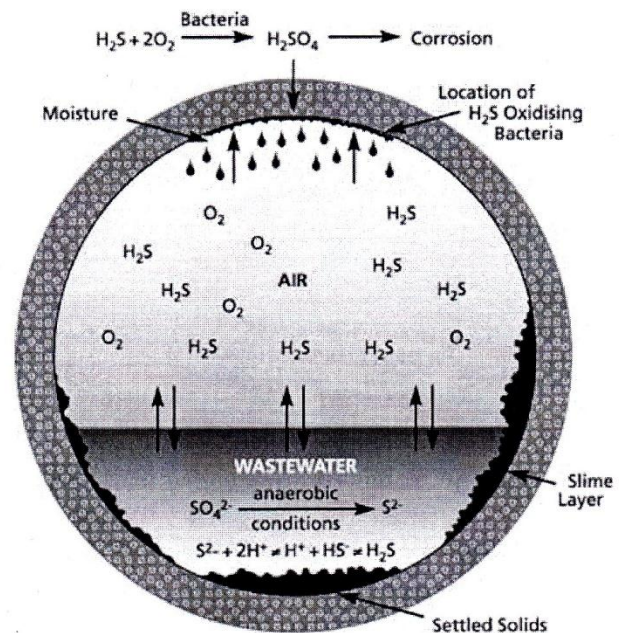
The Grand Jury learned there has been no treatment of H₂S in the sewer lines since 2012. Reasons cited included lack of staff to manage the program and continued study of best treatment methods. In its

March 19, 2012 proposal, US Peroxide noted that the City was interested in conducting a demonstration program for evaluating the use of sodium hydroxide along the industrial segment of Systems 7 and 8 as part of a comprehensive plan to control H₂S-related odors and corrosion. It was noted that sodium hydroxide (caustic shocking) is widely used in the municipal wastewater treatment industry to control sulfide generation within collection systems. Caustic shocking involves adding periodic slugs of sodium hydroxide solution into the wastewater in order to inhibit the growth of sulfide-reducing bacteria within the conveyance system. US Peroxide conducted a survey of the Stockton Industrial Collection System from May 2011 to April 2012. It issued an executive summary on June 5, 2012 recommending biofilm shocking along with continuous chemical treatment as the most effective treatment method for the Stockton Industrial Collection System.

On June 25, 2014 AMEC Environmental & Infrastructure reported the following in its Commercial Wastewater Discharge Analysis (Sulfide Evaluation Sodexo/Aramark Stockton, California), section 2.0 Existing Conditions:

A previous study done for the City by US Peroxide found annual average H₂S levels of 100-250 parts per million (ppm) with spikes exceeding 1,000 ppm at many sampling locations in the City's wastewater collection system; to put these numbers in perspective, the U.S. Occupational Safety and Health Administration established a permissible exposure limit of 10 ppm H₂S and a lethal concentration for five minute exposure is 800 ppm H₂S. It was determined in that study that the majority of the H₂S stemmed from industrial discharge to System 8. High concentrations ranging from 57-1,508 ppm H₂S were measured

from May 27 to June 3, 2014 downstream at Van Buskirk Park. H₂S in wastewater collection systems stems mainly from biological activity in anaerobic slime layers. Sulfate and nutrients from the wastewater diffuse into anaerobic slime layers located on pipe walls and sewer debris where bacteria then reduce the sulfate to sulfide; this is typically referred to as biogenic sulfide. Biogenic sulfide then diffuses back into the main wastewater stream. Sulfide within the wastewater consists of both sulfanide and H₂S, with the ratio depending upon PH. Only the H₂S molecules can volatilize into gas. H₂S volatilization increases with turbulence and is often found at forcemain transitions to gravity, hydraulic jumps, and siphons. Once in the gas phase, H₂S not only poses a health threat to humans, but can also be oxidized to sulfuric acid in aerobic sections on the pipe wall by bacteria. Sulfuric acid then drips down the pipe wall back into the wastewater where it decreases alkalinity and can corrode concrete and metal infrastructure.



AMEC concluded:

The City has a significant sulfide problem in its wastewater collection system.... This impact can be mitigated by various treatment options, including bio-shock treatment or continuous chemical addition in the wastewater collection system.

In response to a complaint filed with the San Joaquin County Environmental Health Department in August 2014, the MUD Deputy Director of Maintenance and Collections Systems on September 3, 2014 wrote:

The City of Stockton Municipal Utilities Department is monitoring the hydrogen sulfide issue at two industrial collection systems in the southern part of the City's services area. These systems are known as System 7 and 8. They transport mostly industrial wastewater. The City has installed several Odalog meters in both systems. Odalog is a portable gas detector specifically designed for the wastewater industry. Recent hydrogen sulfide readings recorded per the Odalog, field observations by City Collections personnel and San Joaquin Valley Air Pollution Control District Inspector did not substantiate or confirm the dangerous levels alleged in the complaint. The City is investigating the issues in the complaint. The City has placed the Odalogs in manholes at Van Buskirk Park, Houston and 8th Street, and Houston and Fresno, in an effort to determine if there are problems with excessive H₂S. ... Based on research of past and ongoing industry studies, it has been recommended to use a shock treatment with 50% sodium hydroxide reducing the hydrogen sulfide gas formation. The City will conduct a pilot study to evaluate the effectiveness of the chemical treatment to reduce odor. The start of the pilot study will begin this fall.

Network Environmental Systems, Inc. (NES) was retained by MUD to assess potential worker exposures to H₂S. NES reported that the Cal/OSHA permissible exposure limit (PEL) for H₂S exposure is 10 ppm. The PEL represents a time-weighted average (TWA) exposure over the course of an entire work shift. Cal/OSHA also has established a short-term exposure limit for H₂S, which represents a 15-minute TWA of 15 ppm. Cal/OSHA has established a ceiling limit for H₂S exposures of 50 ppm. The ceiling limit is that H₂S concentration that should not be exceeded at any time during the course of a work shift. NES performed the worker exposure monitoring on September 29, October 2, and October 7, 2014. In its October 23, 2014 Worker Exposure Monitoring Report, NES Inc. stated that the highest measurement was collected from a worker preparing to replace a manhole on the System 7/System 8 sewer line, immediately following removal of the manhole cover. Initial H₂S monitoring that was performed prior to removal of the manhole cover revealed H₂S levels in the sewer to be greater than 400 ppm and immediately following removal of the manhole cover up to 9 ppm. NES concluded that MUD workers have the potential for work place exposures to H₂S during the course of their assigned work. However, the results of the personal H₂S monitoring that was performed during the three days of monitoring revealed no worker exposures that exceeded the worker exposure criteria (permissible exposure limit, short-term exposure limit, and ceiling concentration) as established by Cal/OSHA.

MUD reported in March 2015 that it intends to begin a pilot study during the summer of 2015, upon the completion of equipment installation, to determine the effectiveness of adding caustic soda (50 percent sodium hydroxide solution) at the manholes located at the intersections of Polk and Industrial, and Perlman and Duck Creek. This pilot study will be a full-scale test of the proposed treatment to

determine if the method and/or chemical application are effective and if further evaluation is necessary to determine the long term application of the chemical.

The Grand Jury also learned that water infiltration occurs in certain deteriorated pipes when the tidewater level rises, which increases the amount of water going to the treatment plant, raising costs to the utility and ultimately its customers. A flow monitoring report is being analyzed by MUD to determine the extent of this problem. It is expected to be completed by mid-April 2015.

Findings

F2.1 Both the US Peroxide study in 2012 and the AMEC analysis in 2014 recommended biofilm shocking and/or continuous chemical treatment for H₂S, yet none was conducted by MUD for more than two years, allowing continued sewer pipe corrosion.

F2.2 The utility vault at the southeast corner of Van Buskirk Park is extensively corroded and at times emits a strong H₂S odor, which raises concerns about public safety.

Recommendations

R2.1 The City Council direct (*through the City Manager*) the Director of MUD to make a presentation to the Council no later than September 2015 identifying the process and timeline to manage the H₂S problem in the sewer pipeline system.

R2.2 The City Council direct (*through the City Manager*) the Director of MUD to ensure the utility vault at Van Buskirk Park is safe for the public (i.e. determine H₂S exposure level and integrity of corroded vault doors) and report back to the Council by September 2015 identifying what repairs are necessary, why the cyclone fence and posts 26 feet away are showing signs of corrosion, and what effect H₂S exposure may have on people in the vicinity.

3.0 Management

The complainant placed blame for workplace difficulties, in part, on the fact that staff turnover, especially of management, has been significant. The Grand Jury confirmed the following:

- the Director of MUD was hired in March 2012;
- the Deputy MUD Director of Wastewater was hired in December 2012;
- the Deputy MUD Director of Collections and Maintenance was hired in February 2013;
- the MUD Finance Officer was hired in April 2013; and
- as the result of promotions, the Assistant MUD Director began in November 2013 and the Deputy MUD Director of Water Resources Planning began in July 2014.

The Municipal Utilities Department facilities operate 24/7 and are required to have skilled technical personnel in many of the positions. As of March 10, 2015 MUD had 217 approved positions, 27 were vacant. The table below shows the cost of overtime, which has risen to over \$1 million annually.

Overtime Costs of Municipal Utilities Department and Delta Water Treatment Facility		
Fiscal Year	Hours	Amount
2012	16,319.24	\$646,831.11
2013	22,965.94	\$914,065.62
2014	27,177.19	\$1,093,666.23

Source: MUD

In March 2009 a MUD Business Plan was developed at a cost of more than \$25,000. Under “Urgent Action Items” the Plan recommended the development of a strategic succession plan to ensure that MUD had sufficient staff to operate and maintain its assets. Unfortunately, a succession plan was not implemented and, as predicted following the initiation and termination of the contract to privatize the utility, MUD went through frequent staff turnover. Worsening the situation was the subsequent bankruptcy of the City, which decreased employee salaries and benefits. Today MUD has a difficult time recruiting and retaining skilled technical personnel because it is competing with agencies offering significantly higher compensation. Loss of institutional knowledge is particularly detrimental in a critically important operation the size of MUD. During the Grand Jury’s investigation it became apparent that few MUD employees had an in-depth understanding of important historical matters related to the utilities.

In an April 23, 2014 response letter to the U.S. Environmental Protection Agency’s inspection of the City of Stockton’s Regional Wastewater Control Facility Tertiary Treatment Facility Risk Management Plan and Process Safety Management Program, the MUD Deputy Director of Wastewater wrote:

- Violation Section C; Prevention Program-Process Hazard Analysis: 68.67(e) Response: *“Due to a high turnover in the City of Stockton’s management team, the RMP/CalARP Process Hazard Analysis sections were either not completed when the program was approved, or the history of the completed work has been lost.”*
- Section H; Risk Management Plan [40 CFR 68.19-68.195] Response: *“Due to a high turnover in the City of Stockton’s management team the RMP/CalARP emergency contact information was not changed within the 30 day time limit.”*

The complainant also identified a perceived conflict of interest due to management’s decision to assign the Deputy Director of Wastewater to serve in the capacity of Interim Safety Program Manager beginning in May 2013. Some employees expressed concern about the ability of a division supervisor to serve as an impartial and unbiased safety investigator. MUD’s Injury and Illness Prevention Program (IIPP) Section 5.3 states that, *“Noncompliance with any provision of this IIPP may subject...employee to disciplinary action”*; and Section 5.4 states, *“All employees shall be evaluated on compliance with safe work practices in their biennial performance appraisals.”* The classification of Safety Program Manager had previously been a full-time, independent position. MUD’s IIPP, Safety Policy Statement stipulates that, *“Employees should immediately report to their supervisor any conditions which they feel present a hazard to themselves, other employees, or the public.”* In spite of this, some employees continue to file complaints directly to Cal/OSHA.

On December 9, 2013 Cal/OSHA issued six citations against MUD with proposed penalties totaling \$14,810. One of the citations brought to light the need to develop numerous safety programs to adequately protect the health and safety of MUD's employees. Because of the nature of the work performed, MUD requires 22 different major safety programs to meet Cal/OSHA requirements. A \$369,381 professional services contract with NES, Inc. was approved to evaluate, update, and develop the safety programs including training modules to educate staff on systems procedures and the use of specialized safety equipment. As of December 2014, six safety programs had been completed. It is expected to take two to three years to complete all the safety and training programs.

Findings

F3.1 MUD failed to develop a succession plan as recommended in its 2009 Business Plan, causing difficulties during transitions and the unnecessary loss of valuable institutional knowledge.

F3.2 As of March 10, 2015 MUD had 27 vacancies. Staff shortages contributed to delays in progress of capital improvement projects, caused more than \$1 million in annual overtime costs in 2014, and threaten the operation of critical facilities if qualified technical positions are not filled.

F3.3 The independent, full-time position of Safety Program Manager has been vacant since May 2013 and the decision to fill the position on an interim basis with the Deputy Director of Wastewater caused some employees to perceive it to be a conflict of interest.

F3.4 Complaints regarding safety concerns have often been filed directly to Cal/OSHA by MUD employees intimating a lack of trust in management personnel to solve issues.

Recommendations

R3.1 The City Council direct *(through the City Manager)* the Director of MUD to develop and implement a succession plan by September 2015.

R3.2 The City Council direct the City Manager to conduct a salary and compensation comparison study of municipal utility technical positions and prioritize the hiring of these essential positions by December 2015.

[Note: MUD employees are paid through Enterprise Funds, which will not affect the City's General Fund.]

R3.3 The City Council direct *(through the City Manager)* the Director of MUD to formulate the job description and organizational development for the position of MUD Safety Program Manager and initiate the hiring process by September 2015.

R3.4 The City Council direct *(through the City Manager)* the Director of MUD to assign and meet benchmarks for the safety programs being developed by NES, Inc. and by December 2015 prepare a timeline for completion of the safety project and report to the Council annually on its progress.

Conclusion

The Grand Jury's investigation found validity in many issues cited in the complaint it received regarding MUD. Continued deterioration of infrastructure (e.g. concrete sewer pipes) due to H₂S corrosion is indisputable and delay in treatment for more than two years did not improve the situation. Persistent staff turnover and vacancies cause challenges for MUD, delay progress, and create a stressful work environment. The loss of institutional knowledge from the exodus of former senior staff is incalculable.

During its investigation the Grand Jury also became concerned about what appeared to be a lack of communication in MUD, both vertically – from top-to-bottom and from bottom-to-top within the department's three divisions – and horizontally, across divisions. Safety violations have occurred, however, new management appears to be making necessary changes to correct deficiencies by utilization of a professional services contract to expedite development of MUD's safety and training programs. New management has also implemented production standards and productivity has improved. An emphasis has been placed on providing training opportunities for MUD employees. This investment will be lost if MUD continues to lose skilled technical staff to other municipalities and water agencies offering significantly higher compensation.

Services provided by MUD are essential. It cannot function optimally without being fully staffed with skilled, experienced employees. Specialists such as engineers, electricians, mechanics, and plant operators are in high demand. In order for MUD to recruit and retain qualified, skilled technical personnel it must regain a competitive hiring position. Planning is now underway for a \$150 million wastewater treatment plant upgrade that is necessary due to the facility's age and to improve the treatment process in order to ensure compliance with deadlines under the National Pollution Discharge Elimination System Permit. In accordance with the California Sportfishing Protection Alliance Consent Decree, MUD needs to complete the CCTV requirement of the entire sanitary system by December 31, 2015. MUD will then need to analyze all the data collected, prioritize, and organize it into a Capital Improvement Program. California is entering into a fourth year of drought, making water more precious each day. Paying more than \$1 million a year in overtime and more than \$1 million a year in Stockton East Water District pumping tax, due to a lack of qualified MUD personnel, is not a long term solution and is ultimately counterproductive for the workforce, as well as the groundwater.

Water, wastewater, and stormwater services are invaluable, yet typically taken for granted by users. Though much of its underground infrastructure is “out of sight, out of mind”, its function is crucial to the citizenry and inattention can result in perilous consequences.

Disclaimers

Grand Jury reports are based on documentary evidence and the testimony of sworn or admonished witnesses, not on conjecture or opinion. However, the Grand Jury is precluded by law from disclosing such evidence except upon the specific approval of the Presiding Judge of the Superior Court, or another judge appointed by the Presiding Judge (Penal Code Sections 911, 924.1 (a) and 929). Similarly, the Grand Jury is precluded by law from disclosing the identity of witnesses except upon an order of the court for narrowly defined purposes (Penal Code Sections 924.2 and 929).

Response Requirements

California Penal Code Sections 933 and 933.05 require that specific responses to all findings and recommendations contained in this report be submitted to the Presiding Judge of the San Joaquin County Superior Court within 90 days of receipt of the report.

The Stockton City Council shall respond to each Finding and Recommendation contained in this Report.

Mail or hand deliver a hard copy of the response to:

Honorable Lesley D. Holland, Presiding Judge
San Joaquin County Superior Court
P.O. Box 201022
Stockton, CA 95201

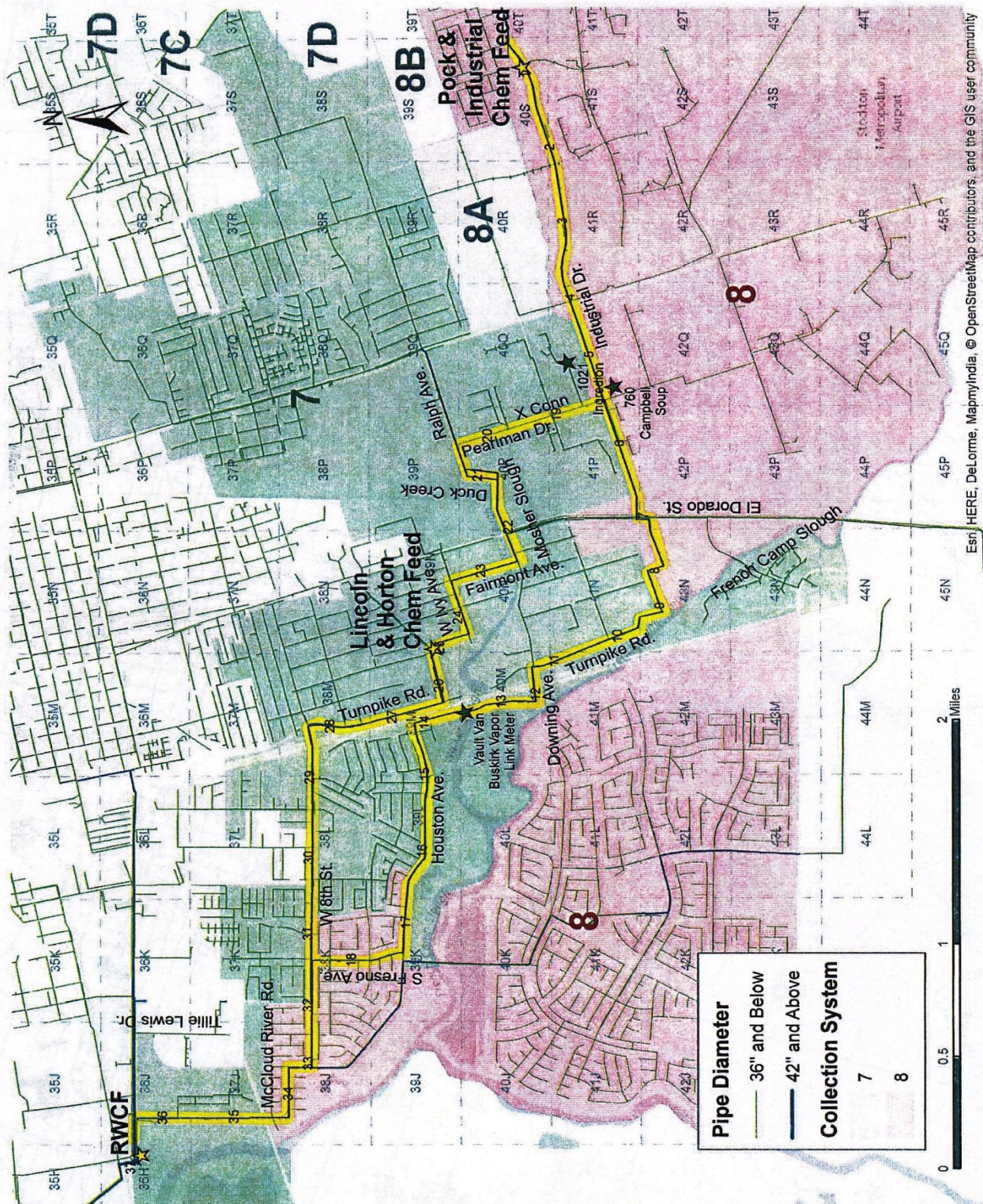
Also, please email the response to Ms. Trisa Martinez, Staff Secretary to the Grand Jury at grandjury@sjcourts.org

Appendices

Appendix A: *Map of Southern Industrial Collection Systems 7 & 8*

Appendix B: *Delta Water Supply Project Intake Pump Station; elevation changes on non-pile supported areas of the levee.*

Appendix C: *Effects of H₂S corrosion on utility vault at Van Buskirk Park.*



Appendix A: Map of Southern Industrial Collection Systems 7 & 8

Appendix B: Delta Water Supply Project Intake Pump Station; elevation changes on non-pile supported areas of the levee.



The Intake Pump Station (IPS) on the San Joaquin River west of Interstate 5.



A concrete slab has shifted due to soil settling at the IPS.



Buckled asphalt at the IPS because of soil settling.

Appendix C: Effects of H₂S corrosion on utility vault at Van Buskirk Park.



A utility vault at Van Buskirk Park with a cyclone fence in the background. Both show signs of corrosion.



Photos above and at the right are close-ups of corrosion on the two-year-old utility vault doors in Van Buskirk Park.