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VIA ELECTRONIC CORRESPONDENCE

April 2, 2015

CCN: 59265
File No: 8.DC.20.19

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RE: Consent Decree (Case: No. 1:12-cv-24400-FAM)
Reference DOJ Case No. 90-5-1-1-4022/1
Section VI – Pump Station Operations and Preventative Maintenance Program Submittal, Paragraph 19(f)

Dear Sir/Madam:

In accordance with the provisions of Paragraph 19 (f) of the above referenced Consent Decree, on behalf of Miami-Dade County, the Miami-Dade Water and Sewer Department (MDWASD) submits to the United States Environmental Protection Agency (EPA) and the State of Florida Department of Environmental Protection (FDEP) the Pump Station Operations and Preventative Maintenance Program.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering such information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Should you have any questions regarding this matter, please call me at (786) 552-8571.

Sincerely,

Juan Carlos Arteaga, AIA, NCARB, CBO, APA, LEED® AP
Deputy Director

Attachment: Pump Station Operations and Preventative Maintenance Program

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CMOM Program
Pump Station Operations & Preventative Maintenance Program

April 2, 2015

Prepared by

The Miami-Dade County Water and Sewer Department and the Consent Decree CMOM Program Team

Prepared for

United States Environmental Protection Agency and
Florida Department of Environmental Protection

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Pump Station Operations & Preventative Maintenance Program

PREPARED FOR:
Miami-Dade Water and Sewer Department (MDWASD)

PREPARED BY:
THE CONSENT DECREE CMOM PROGRAM TEAM, 10900 NW 25TH STREET, SUITE 100, MIAMI, FL 33172

Quality Information

Status: Final

Document	Pump Station Operations & Preventative Maintenance Program		
Ref	0206	Date	April 2, 2015
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Revision History

				Authorized by:	
Revision	**Revision Date**	**Status**	**Revised by:**	Name/Position	Signature
0.0	April 2, 2015	Final	Jane McLamarrah, PhD, PE	Bill Sukenik, PE, PMP	William Sukenik

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00. Acronyms / Glossary

00.01 Acronyms / Abbreviations

Table 00.1
Abbreviations Used in the PSOPMP

Abbreviation	Description
APTTC	Adequate Pumping Transmission & Treatment Capacity Program
AMS	Asset Management System
BFE	Base Flood Elevation
BHP	Brake Horsepower
CCTV	Closed-Circuit Television
CD	Consent Decree
CD PMCM Team	The Consent Decree Program Management and Construction Management Team
CMOM	Capacity, Management, Operations, and Maintenance
County	Miami-Dade County
CWA	Clean Water Act
DFE	Design Flood Elevation
ETM	Elapsed Time Meter
EPM	Electronic Preventative Maintenance
EAMS	Enterprise Asset Management System
EDMS	Electronic Document Management System
FDEP	Florida Department of Environmental Protection
FEMA	Federal Emergency Management Agency
FP&L	Florida Power and Light
FOG	Fats, Oils, and Grease
GPM	Gallons Per Minute
GIS	Geographic Information Systems
GSS	Gravity Sewer System
GSSOMP	Gravity Sewer System Operations and Maintenance Program
HVAC	Heating, Ventilation, and Air Conditioning
ID	Interior Diameter
IMS	Information Management System
IS	Information Systems
IT	Information Technology
KPI	Key Performance Indicator
LOS	Level of Service
MDWASD	Miami Dade County Water and Sewer Department
MGD	Million Gallons Per Day
MOM	Management, Operations, and Maintenance

Table 00.1
Abbreviations Used in the PSOPMP

Abbreviation	Description
NFPA	National Fire Protection Agency
NPDES	National Pollutant Discharge Elimination System
NEMA	National Electrical Manufacturers Association
O&M	Operations and Maintenance
OOL	Ocean Outfall Legislation
OSHA	Occupational Safety and Health Administration
OPP	Overflow Prevention Plan
PdM	Predictive Maintenance
PM	Preventative Maintenance
PD	Program Director, MDWASD Director or Delegate
PgM	Program Manager, Lead Executive for PMCM Team
PMCM	Program Management and Construction Management
Program	Consent Decree Program
PSD	Pump Station Division
PSIP	Pump Station Improvement Program
PSOPMP	Pump Station Operations and Preventative Maintenance Program
QA/QC	Quality Assurance/Quality Control
R&R	Rehabilitation and Repair
RAP	Remedial Action Plan
RPM	Revolutions Per Minute
RER-DERM	Miami-Dade County Department of Regulatory and Economic Resources – Division of Environmental Resources Management
RM	Routine Maintenance
SCADA	Supervisory Control and Data Acquisition
SFWMD	South Florida Water Management District
SOP	Standard Operating Procedures
SORP	Sewer Overflow Response Plan
SSAMP	Sewer System Asset Management Program
SPP	Spare Parts Program
SSES	Sanitary Sewer Evaluation Survey
SSO	Sanitary Sewer Overflow
TDH	Total Dynamic Head
USACE	U.S. Army Corps of Engineers
WCTL Division	MDWASD Wastewater Collection and Transmission Line Division
WCTS	Wastewater Collection and Transmission System
WMD	Water Management District
WWTP	Wastewater Treatment Plant

Table 00.1
Abbreviations Used in the PSOPMP

Abbreviation	Description
VSC	Volume Sewer Customer
VSCO	Volume Sewer Customer Ordinance

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00.02 Glossary

Building Backup: A wastewater release or backup into a building or private property that is caused by blockages, flow conditions, or other malfunctions in Miami-Dade's wastewater collection and transmission system (WCTS). A wastewater backup or release that is caused by blockages, flow conditions, or other malfunctions of a Private Lateral or internal building plumbing is not a Building Backup.

Capacity, Management, Operations, and Maintenance (CMOM): A program of accepted industry practices to properly manage, operate, and maintain sanitary wastewater collection, transmission, and treatment systems, investigate capacity constrained areas of these systems, and respond to sanitary sewer overflow (SSO) events.

Closed-circuit Television (CCTV): Technology by which Miami-Dade inspection crews and/or its outside contractors use a video camera to visually inspect the internal condition of pipes and sub-surface structures.

Consent Decree (CD): The Consent Decree, Case: 1:12-cv-24400-FAM, negotiated between Miami-Dade County, Florida (Defendant), the Florida Department of Environmental Protection and the U.S. Environmental Protection Agency (Plaintiffs).

Consent Decree Program Management and Construction Management Team (CD PMCM): The professional services consulting team competitively selected by the County to support MDWASD in the implementation of the requirements of the CD.

Environmental Protection Agency (EPA): United States Environmental Protection Agency and any of its successor departments or agencies.

Fats, Oils, and Grease (FOG) Control Program: "FOG" refers to fats, oils, and grease, which are generated by residents and businesses processing or serving food and other products. A FOG Control program aims to prevent FOG accumulation in sewer systems.

Force Mains: Any pipe that receives and conveys, under pressure, wastewater from the discharge side of a pump. A force main is intended to convey wastewater under pressure.

Geographic Information System (GIS): A system consisting of hardware, software, and data that is designed to capture, store, and analyze geographically-referenced information.

Gravity Sewer Line or Gravity Sewer: Pipes that receive, contain, and convey wastewater not normally under pressure, but are intended to flow unassisted under the influence of gravity.

Gravity Sewer System Operations and Maintenance Program (GSSOMP): The Consent Decree stipulated CMOM deliverable that sets forth the protocols and procedures associated with the operations and maintenance gravity sewer system.

Infiltration: As defined by 40 CFR § 35.2005(b)(20) shall mean water other than wastewater that enters the WCTS (including sewer service connections and foundation drains) from the ground through such means as defective pipe, pipe joints, connections, or manholes.

Inflow: As defined by 40 CFR § 35.2005(b)(21) shall mean water other than wastewater that enters the WCTS (including sewer service connections) from sources such as, but not limited to, roof leaders, cellar drains, yard drains, area drains, drains from springs and swampy areas, manhole covers, cross connections between storm sewers and sanitary sewers, catch basins, cooling towers, storm water, surface runoff, street wash waters, or drainage.

Infiltration and Inflow (I/I): The total quantity of water from inflow, infiltration, and rainfall-induced infiltration and inflow without distinguishing the source.

Lift Station: A facility in the WCTS comprised of pumps which lift wastewater to a higher hydraulic elevation, including related electrical, mechanical, and structural systems necessary to the operation of the lift station (referenced in this document as pump station). As defined in MDWASD's 1996 O&M Manual, lift stations discharge to a downstream gravity main.

Manhole or Junction Box: Part of the gravity sewer system. A structure which provides a connection point for gravity lines, private service laterals, or force mains, as well as an access point for maintenance and repair activities.

Master Pump Station: A Master Pump Station is a type A wet well / dry well pump station with a building housing five or more large pumps (greater than 25 brake horsepower (BHP) each). Master Pump Stations pump into large force mains that feed directly to a treatment plant.

Miami-Dade: Miami-Dade County, Florida, including all of its departments, agencies, instrumentalities such as the Water and Sewer Department and the Department of Regulatory and Economic Resources, and any successors thereto.

NPDES: The National Pollutant Discharge Elimination System (NPDES) authorized under Section 403 of the Clean Water Act (CWA).

Nominal Average Pump Operating Time (NAPOT): The criteria from the First Partial Consent Decree and the Second and Final Partial Consent Decree requiring that each pump station operate at a nominal average pump operating time of less than or equal to 10 hours per day with exceedances of the criteria requiring a Remedial Action Plan and no building permits issued for connection to the WCTS upstream of that station.

Private Lateral: The portion of a sanitary sewer conveyance pipe that extends from a single-family, multifamily, apartment or other dwelling unit, or commercial or industrial structure to which wastewater service is or has been provided up to the property line of such structure or to a public sewer in a proper easement.

Prohibited Bypass: The intentional diversion of waste streams from any portion of a treatment facility which is prohibited pursuant to the terms set forth at 40 CFR § 122.41(m).

Public Document Repository (PDR): The Miami-Dade Water and Sewer Department (MDWASD) located at 3071 SW 38th Ave and the Miami-Dade Water and Sewer Department's website, http://www.miamidade.gov/water.

Public Lateral: The portion of a sanitary sewer conveyance pipe that extends from the private lateral, which typically has a cleanout located at the property line or at the easement line, to the sewer main.

Pump Station: A facility in the WCTS comprised of pumps which transport wastewater from one location to another location, and which includes related electrical, mechanical, and structural systems necessary for the operation of the pump station. As defined in MDWASD's 1996 O&M Manual, pump stations discharge to a force main, to a booster station, or to a WWTP.

Pump Station Operations and Preventative Maintenance Program (PSOPMP): The Consent Decree stipulated CMOM deliverable that sets forth the protocols and procedures associated with the operations and maintenance of the pump station sewer system.

Sanitary Sewer Overflow (SSO): Any discharge of wastewater to waters of the United States or the State from Miami-Dade's WCTC through a point source not permitted in any NPDES permit, as well as any overflow, spill, or release of wastewater to public or private property from the WCTS that may or may not have reached waters of the United States or the State, including building backups. A wastewater overflow, backup, or release that is caused by blockages, flow conditions, or other malfunctions of a Private Lateral or internal building plumbing is not a SSO.

Sewer Overflow Response Plan (SORP): The SORP provides structured guidance, including a range of field activities to choose from, for a generalized uniform response to overflows, backup, or releases.

Supervisory Control and Data Acquisition (SCADA) System: A system of automated sensory control equipment that monitors the operation of lift stations (or pump stations) within the wastewater collection and transmission system (WCTS). The SCADA system is designed to convey alarms when predetermined conditions occur, to monitor pump stations operating parameters and to remotely operate pumps. Monitoring parameters may include, but are not limited to, power failures, high wet well levels, pump failures that could potentially cause

overflows, excessive pump runtimes, or other alarm set points as may be determined by system operators.

Wastewater System: The Wastewater Collection and Transmission System (WCTS) and the Wastewater Treatment Plants (WWTPs).

Wastewater Collection and Transmission System (WCTS): The municipal wastewater collection and transmission system, including all pipes, force mains, gravity sewer lines, pump stations, manholes, and appurtenances thereto, which are owned or operated by the Miami-Dade designed to collect and convey municipal sewage (domestic, commercial, and industrial to Miami-Dade's WWTPs.

Wastewater Treatment Plant (WWTP): Devices or systems used in the storage, treatment, recycling, and reclamation of municipal wastewater and include all facilities owned, managed, operated, and maintained by Miami-Dade, including but not limited to the North District WWTP, the Central District WWTP, and the South District WWTP, and all components of those plants.

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01. Introduction

The Miami-Dade Water and Sewer Department (MDWASD) prepared this Pump Station Operations and Preventative Maintenance Program (PSOPMP) plan in compliance with Section 19(f) of the Consent Decree (CD) between Miami-Dade County (County) and the plaintiffs, the United States of America, the State of Florida (State), and the Florida Department of Environmental Protection (FDEP), adjudicated by the United States District Court for the Southern District of Florida in Case No. 1:12-cv-24400-FAM. The CD requires the County to develop, submit, finalize, and implement plans for the continued improvement of its wastewater collection and transmission system (WCTS) and wastewater treatment plants (WWTPs) to eliminate, reduce, prevent, or otherwise control sanitary sewer overflows (SSOs); to correct effluent limit violations; and to properly manage, operate, and maintain its WCTS and WWTPs.

01.01 Summary of the Pump Station System

As of February 1, 2015, MDWASD's pump station system consists of 1,028 MDWASD-owned pump stations, and an additional 19 pump stations maintained under maintenance agreements with other agencies and departments. In addition, there are numerous private pump stations discharging wastewater into MDWASD's WCTS. The number of stations is subject to change due to additions and abandonments in a dynamic, urban service area such as Miami-Dade County.

The Pump Station Division (PSD) is responsible for the operation and maintenance (O&M) of the MDWASD stations and the stations under maintenance agreements, except for the two master pump stations, PS 0001 (a.k.a., Fourth Street) and PS 0002 (a.k.a., Ninth Street), that are WWTP influent pump stations operated and maintained by the Wastewater Treatment and Maintenance Division. The MDWASD pump station system has different types and sizes of pump stations ranging from smaller lift stations designed to handle individual flows from commercial establishments, to master stations that receive flows from a large service area and which pump directly to the treatment plant. For consistency with the CD, this document will refer to both types of stations as pump stations.

01.01.1 Pump Station Service Areas

The MDWASD treatment plant service area is divided into the North, Central, and South Districts, each served by separate wastewater treatment facilities. The PSD further divides the Central District into the Central West and the Central East Service Areas for operational and maintenance purposes. The WCTS covers approximately 443 square miles of area and, as of February 1, 2015, included approximately 6,300 miles of pipelines. The MDWASD system also receives flow from fifteen wholesale municipal customers, known locally as volume sewer customers.

01.01.2 Pump Station Flow Schematics

The pump station system includes booster stations, regional stations, and master stations (master stations are regional stations that pump directly into Central District WWTP). The centrally located Pump Station 187 (33-P1) is utilized to distribute flows between the three treatment plant service areas. Pump Station 187 has the ability to divert flow from any of the three districts to another district or to the other two districts. Pump Station 187 also has the ability to divert flow from any two districts and send their flow to the other district. SCADA controls are installed to allow PSD personnel to remotely monitor and operate the station. Diversion of flows requires manual operation of station and transmission valves. Appendix A, Pump Station Route Flow Schematics, contains flow schematics illustrating the flow path for each pump station within the various treatment plant service areas. The two Central District plant influent pump stations, Master Pump Stations 0001 and 0002, which are operated and maintained by the Wastewater Treatment and Maintenance Division, will be addressed as part of the WWTP Operations and Maintenance Program, which is a separate CMOM Program document from this PSOPMP document.

Figure 01.1 on the following page shows the maintenance service area boundaries for Miami-Dade County.

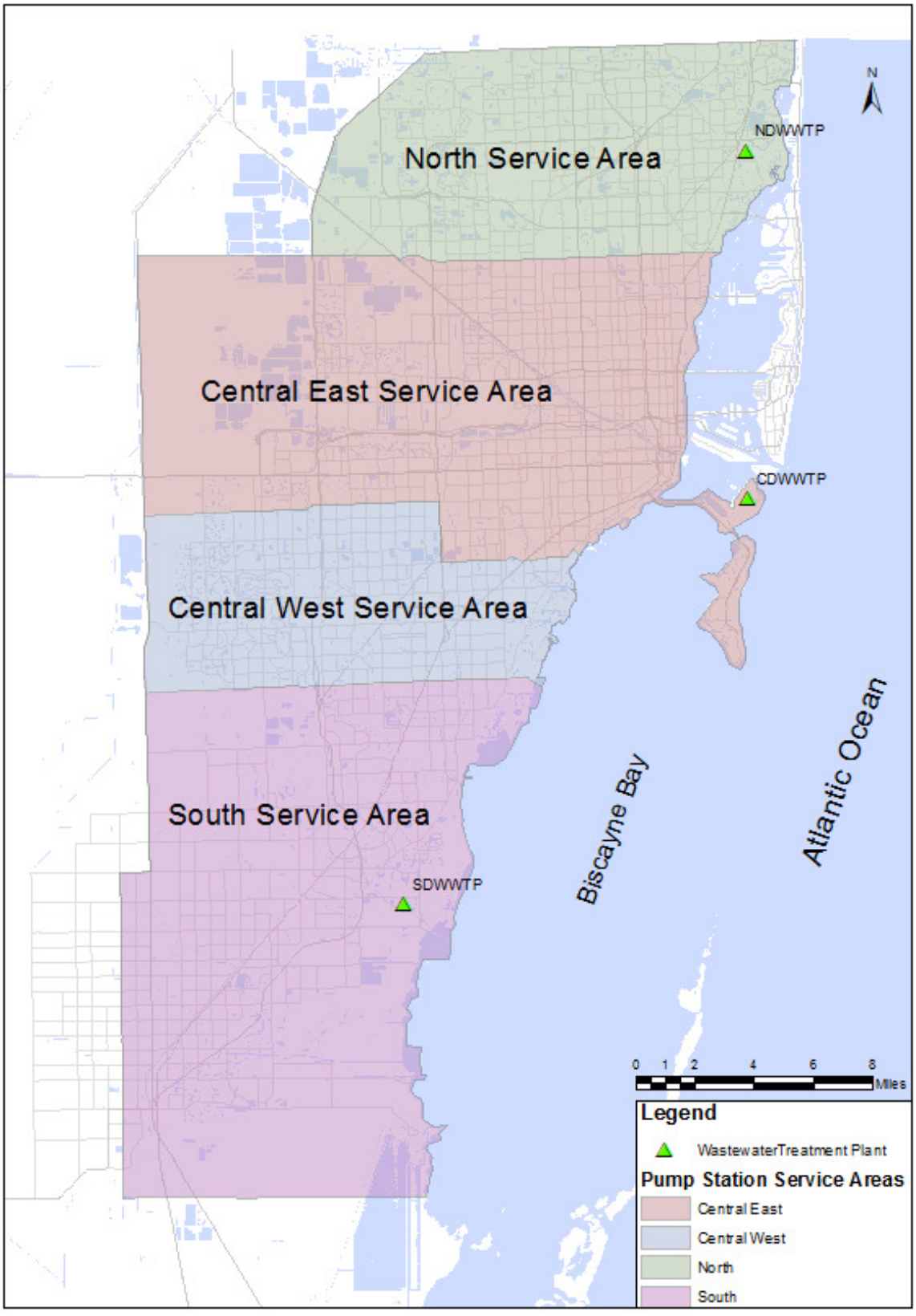

Figure 01.1
MDWASD Pump Station Maintenance Service Areas

01.02 Regulatory Drivers

Compliance with the requirements of the Clean Water Act (CWA) is the primary regulatory driver for the PSOPMP. The County negotiated the terms of the CD with EPA and FDEP in response to violations of the CWA, which consisted of unpermitted discharges of untreated sanitary sewage into waters of the United States from the WCTS and which are referred to as sanitary sewer overflows or SSOs.

To support realization of the goal of reducing, preventing, or otherwise controlling SSOs and prohibited discharges to waters of the United States, the CD, Section 18, requires MDWASD to continue programs initiated under previous CDs, and Section 19 stipulates the development of CMOM[1] programs across all areas of the wastewater, collection, transmission, and treatment systems, including: pump stations, force mains, gravity sewers, and wastewater treatment plants. CD Section 18 "existing" CMOM programs and Section 19 "new" CMOM programs are listed below. The CD Programs listed in ***bold italics*** have direct impact on elements and requirements of the PSOPMP.

1. ***18(a) Adequate Pumping, Transmission, and Treatment Capacity (APTTC) Program;***
2. ***18(b) Pump Station Remote Monitoring (PSRM) Program;***
3. ***18(c) WCTS Model;***
4. ***18(d) Spare Parts Program (SPP);***
5. *18(e) Volume Sewer Customer Ordinance (VSCO) Program;*
6. *19(a) Fats, Oils, and Grease (FOG) Control Program;*
7. ***19(b) Sewer Overflow Response Plan (SORP);***
8. ***19(c) Information Management System (IMS) Program;***
9. ***19(d) Sewer System Asset Management Program (SSAMP);***
10. ***19(e) Gravity Sewer System Operations and Maintenance Program (GSSOMP);***

[1] The MDWASD wastewater system has not experienced a capacity related SSO since 2002, and accordingly, the CD focuses on Management, Operations, and Maintenance, or MOM, related programs, but uses the familiar acronym of CMOM throughout the document.

11. ***19(f) Pump Station Operations and Preventative Maintenance Program (PSOPMP);***
12. **19(g)** ***Force Main Operations, Preventative Maintenance, and Assessment / Rehabilitation Program*****;**
13. *19(h) WWTP Operations and Maintenance Program;*
14. ***19(i) Specific Capital Improvements Projects****; and*
15. *19(j) Financial Analysis Program.*

The sub-paragraphs of 19(f) require specific actions to develop a preventative CMOM program plan for the pump station system. The PSOPMP must include the following:

- Identification of the means and modes of communication between pump stations, field crews, and supervising staff;
- Technical specifications of each pump station within the WCTS;
- Description of each pump station monitoring system;
- Written preventative operation and maintenance (O&M) schedules and procedures;
- Written standard emergency / reactive O&M procedures;
- An inventory management system, including critical equipment and critical spare parts;
- Reports listing equipment problems and the status of work orders generated during the prior month; and
- A staffing and funding plan with structure, skills, numbers, and funding to allow completion of the O&M activities required by the PSOPMP.

In addition to the specific requirements of Section 19, the CD references specific guidance tools that support the incorporation of industry CMOM “best-practices” in municipal wastewater utility operations. Industry CMOM best-practices are those core WCTS management attributes commonly found in highly performing utilities and often include adoption of asset and life-cycle-cost management concepts through implementation of preventative and predictive management policies and procedures. Reductions in emergency maintenance and repair activities leading to reductions in SSOs demonstrate the effectiveness of these best-practices. The CD requires concurrent development and implementation of the fifteen separate management programs

listed above. The programs' inherent interdependencies require an interdisciplinary and integrated approach to wastewater system management, operations, and management.

01.03 Miami-Dade County Organization

The County operates under Home-Rule Authority granted by the Florida State Constitution. The unincorporated areas of Miami-Dade County are governed by the 13 member Board of County Commissioners (Commission). The County government provides major metropolitan services countywide and city-type services for residents of the unincorporated areas. Miami-Dade County has a Mayor who oversees the day-to-day operations of the County. The County is organized into 25 Departments, each led by a Mayor-appointed Director.

01.03.1 Water and Sewer Department Organization

As shown in Figure 01.2, two Deputy Directors manage the MDWASD under the authority of the Director: the Deputy Director of Operations and the Deputy Director of Regulatory Compliance and Capital Improvements. There are four Assistant Directors under the Deputy Director of Operations, and two Assistant Directors and a Chief of Priority Capital Projects under the Deputy of Regulatory Compliance and Capital Improvements. As discussed in Subsection 01.03.2 below, the pump stations are under the Assistant Director for Wastewater System Operations.

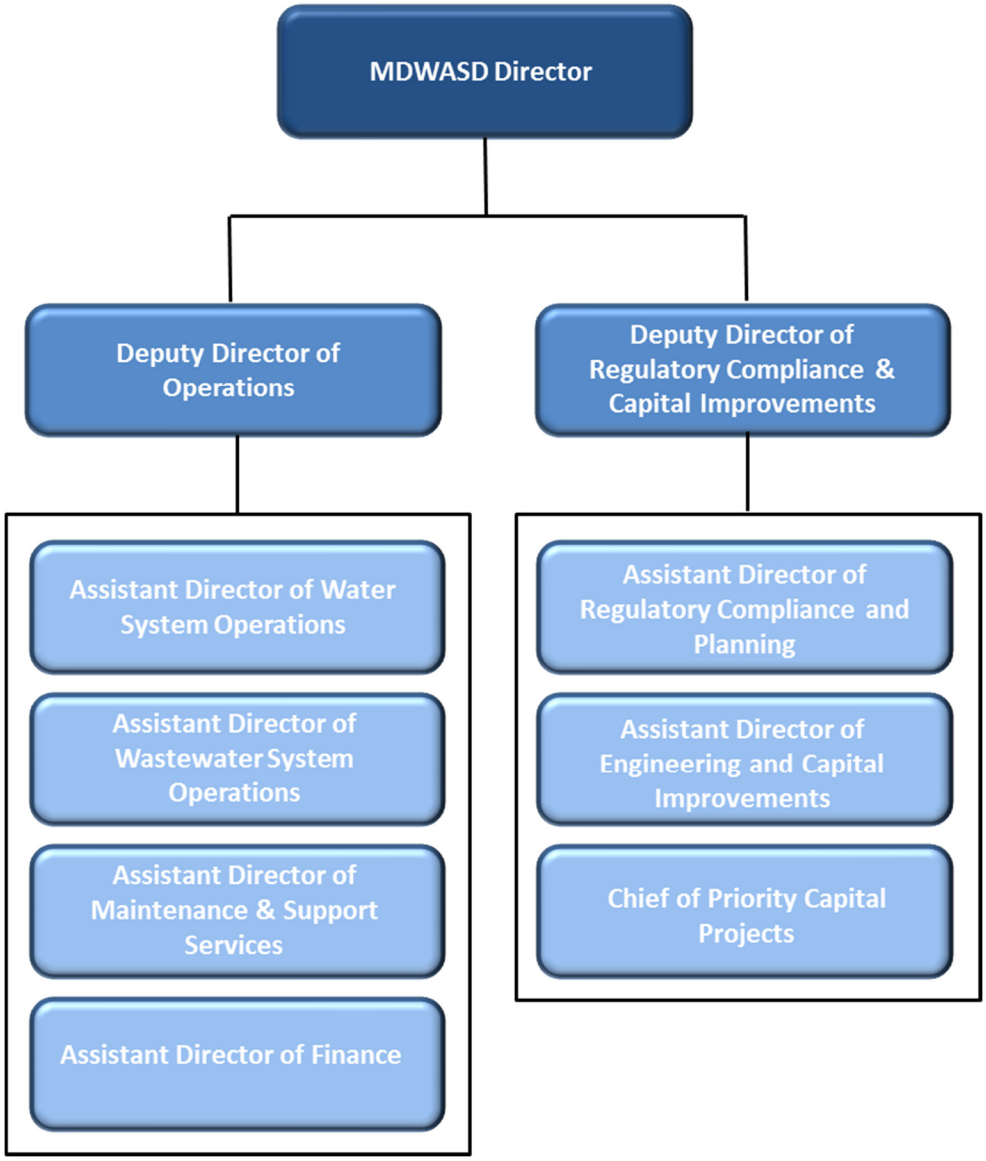

Figure 01.2
MDWASD Organization Chart

The MDWASD operates as an enterprise fund. Thus, the sale of bonds, grant awards, user and permitting fees, and water and sewer rates provide the revenue to fund its staff of nearly 2,500 and its $465 million annual budget in Fiscal Year (FY) 2014-2015, the last budget year with an approved budget at the time of writing of this PSOPMP. The MDWASD fiscal year is from October 1 through September 30. As of the writing of this document, the proposed budget for FY 2015-2016 has already been submitted.

01.03.2 Pump Station Division Organization

The Pump Station Division (PSD) Chief reports to the Assistant Director of Wastewater System Operations, as shown in Figure 01.3. The PSD Chief has five functional sections, as described following Figure 01.3.

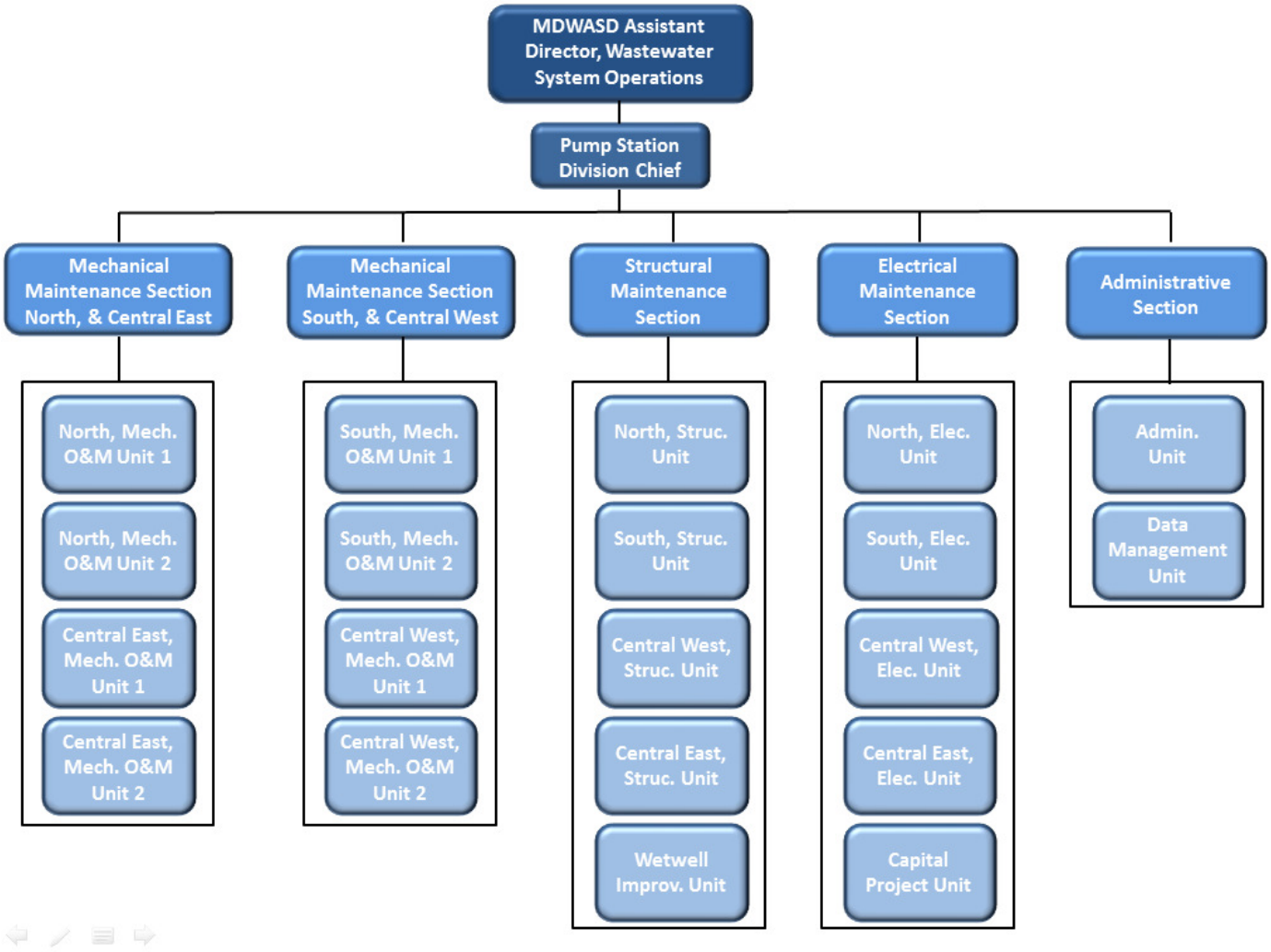

Figure 01.3
Pump Station Division Organization Chart

Mechanical Maintenance Section: The Mechanical Maintenance Section is subdivided into two sections based on geography: the North & Central East Section and the South & Central West Section. These sections are responsible for mechanical equipment.

Structural Maintenance Section: The Structural Maintenance Section is responsible for the pump station structures, including buildings, foundations, wet wells, gratings, grounds, etc.

Electrical Maintenance Section: The Electrical Maintenance Section is responsible for electrical and controls equipment.

Administrative Section: The Administrative Section provides administrative and accounting support to the other sections and directly to the Division staff.

In addition to the four Sections under the PSD Chief, the PSD obtains assistance from other groups within MDWASD. The key functional assistance areas are listed, and briefly described, below. More detailed descriptions are included in subsequent sections of this plan document as appropriate.

- Wastewater Collection and Transmission Line Division, which is responsible for the gravity sewer system and the force mains. This group will respond to pump station-related spills when the spill occurs at a manhole upstream of the pump station or in a force main downstream of the pump station.
- Emergency Communications Center, which is responsible for receiving “problem calls” and monitoring Supervisory Control and Data Acquisition System (SCADA) alarms for the pump stations.
- SCADA Section, which is responsible for implementation and maintenance of the supervisory control and data acquisition system, network, and infrastructure for all MDWASD’s pump stations and treatment facilities. Responsibility includes instrumentation and electronic equipment maintenance for the Pump Station Division.
- Meter Installation and Maintenance Section, which is responsible for meter installation and maintenance, including the pump station meters as well as the various volume sewer customer meters and other MDWASD system meters.
- General Maintenance Division, which is responsible for the grounds, fleet, and heating, ventilation, and air conditioning (HVAC) maintenance.

- Stores and Procurement Division, which is responsible for parts inventory, storage, and purchasing.

01.04 PSOPMP Overview

The considerations necessary for the development of PSOPMP include the regulatory drivers listed in the previous sub-sections, industry "best-practices" in pump station system O&M, the other existing and new CMOM Programs, and the local business needs of MDWASD. The designed interdependencies between regulatory requirements and the other CMOM Programs necessitate a phased implementation and adoption of a continuous improvement process. The resultant PSOPMP, the phased implementation, and the continuous improvement processes are detailed in subsequent sections of this document.

Industry best-practices used by MDWASD and the PSD include that of various professional organizations, CMOM publications, and national standard organizations for mechanical, electrical, and structural codes. Examples of such guidance documents used to develop the PSOPMP include, but are not limited to, *Occupational, Safety and Health Administration (OSHA), Core Attributes of Effectively Managed Wastewater Collection Systems, Effective Utility Management: A Primer for Water and Wastewater Utilities, Guide for Evaluating Capacity, Management, Operation, and Maintenance (CMOM) Programs at Sanitary Sewer Collection Systems, Optimization of Collection System Maintenance Frequencies and System Performance, Optimizing Operation, Maintenance, and Rehabilitation of Sanitary Sewer Collection Systems, Protocols for identifying Sanitary Sewer Overflows, Sanitary Sewer Overflow Solutions, National Electric Code, National Electrical Manufacturers Association (NEMA) standards and specifications, Electrical Safety Orders, General Industry Safety Orders, Uniform Building Code, and National Fire Protection Code.*

01.05 PSOPMP Document Organization

This PSOPMP plan document is organized to meet both the requirements of the CD as well as the business needs of the PSD. The PSOPMP plan organization is listed in Table 01.1. Where applicable, the corresponding CD section reference is listed adjacent to the section or subsection name and the associated document page number.

Table 01.1
Location of CD Requirements in PSOPMP

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02. PSOPMP Purpose and Goals

In accordance with the CD requirement to establish a written, defined purpose and written, defined goals, Section 02.01 provides the PSOPMP purpose and Section 02.02 provides the PSOPMP goals.

02.01 PSOPMP Purpose

The purpose of the PSOPMP is to establish and document processes and procedures to operate and maintain MDWASD's pump stations, and the pump stations under maintenance agreements with MDWASD, in a manner that ensures the pump stations:

- Operate as designed by trained, well-qualified staff,
- Provide uninterrupted service to customers,
- Extend the useful life of pump station assets, and
- Optimize operational and capital replacement expenditures to maintain affordable customer rates.

02.02 PSOPMP Goals

The PSOPMP goals are to:

- Operate and maintain the pump stations with minimal service interruptions,
- Perform preventative and predictive maintenance in a manner that minimizes the potential for structural, mechanical, electrical, instrumentation, or hydraulic failures that could result in SSO events,
- Ensure pump station-related malfunctions or failures are corrected in a timely, efficient, and effective manner, and
- Maximize the level of customer service, regulatory compliance, and the effective use of resources for pump station-related activities.

This document contains the initial phase of the PSOPMP plan and a schedule of specific recommendations intended to transition this program into subsequent phases.

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03. Phased PSOPMP Plan Development

PSOPMP development and implementation will be phased to ensure cohesiveness and proper integration of the PSOPMP with other CD-required CMOM Programs currently under development. The PSOPMP relies upon the management and implementation efficiency gained through incorporation of specific knowledge area policies, procedures, activities, technologies, and tools inherent to other CMOM Programs. Portions of the PSOPMP that are consistent with existing pump station O&M activities will be implemented immediately. Portions of the recommended PSOPMP activities that will require additional field investigations to fully populate databases, such as the Technical Specifications database, will be part of the phased implementation process. The phased implementation is summarized in Section 03.02, Planned Support Activities, below, as well as noted in the applicable detailed section of this plan document devoted to that particular implementation activity.

03.01 PSOPMP Plan Review and Revision

In accordance with the CMOM philosophy of continuous improvement, the PSD developed internal performance measures as described in Section 04, PSOPMP Performance Measures, to evaluate PSOPMP progress toward established goals. Monthly performance measure reports will be generated and evaluated on a semi-annual and annual basis.

The defined performance measures may be modified to better suit the business needs of the County. Material changes to the PSOPMP will be submitted to the EPA/FDEP for review and approval and documented in the Annual Report submitted to EPA/FDEP as part of CD reporting compliance.

During the annual review, the monthly reports and the semi-annual evaluation will be reviewed, and lessons learned will be noted to enable MDWASD to continuously improve the PSOPMP and other affected programs. The annual review will also include a review of the effect of other CMOM Programs, changing conditions, revisions to regulatory requirements, and other factors that may impact the pump station system. As the PSOPMP matures, less frequent evaluations may be recommended. The results will continue to be documented in the Annual Report to EPA/FDEP as part of CD reporting compliance.

03.02 Planned Supportive Actions

As noted above, the proposed PSOPMP depends on other yet-to-be-developed and implemented new CMOM Programs. The disparity between the required EPA/FDEP submittal dates for these CMOM Programs not only demonstrates a need for a phased implementation approach, but the need to consolidate new CMOM Program implementation schedules. Upon EPA/FDEP approval of other CMOM Program plan documents, MDWASD will submit a proposed consolidated implementation plan and schedule to include CMOM Programs. This will facilitate the task of tracking implementation for CMOM programs, individual CMOM elements, required resources, and schedules.

Implementation of the PSOPMP is contingent upon distinct CD controlled and non-CD controlled predecessors. These include, but are not limited to:

- Submittal, and subsequent EPA/FDEP approval, of the IMS, the SORP, and the Sewer System Asset Management CMOM Programs;
- Completion of, or updates to, existing CMOM Programs, i.e., Adequate Pumping, Transmission and Treatment Capacity, Pump Station Remote Monitoring (SCADA), the WCTS Model, Spare Parts, and the Volume Sewer Customer Ordinance Programs;
- Completion of the Miami-Dade GIS Updates and addition of accurate manhole rim and invert elevations upstream of pump stations;
- Implementation of the IMS and the SSAMP CMOM Programs; and
- Allocation and acquisition of PSOPMP staffing and funding resources to augment the PSD's existing resources to expand its preventative and predictive maintenance activities.

03.02.1 Phased Implementation Actions

The proposed staffing and associated funding for the phased implementation of the PSOPMP is detailed in Section 09, Staffing and Funding Plan, Table 03.1 on the following page summarizes the key implementation activities. Implementation of these activities will require additional staff and equipment as detailed in Table 09.2 in Section 09 as well as the consultant/vendor resources.

03.02.2 Implementation Schedule

The PSOPMP will be implemented in phases. Portions of the PSOPMP will be implemented immediately. The immediate implementation items include the routine and preventative maintenance activities that are currently being performed. Upon EPA/FDEP approval of this PSOPMP and the other CMOM Program documents for which PSOPMP dependencies exist, the activities listed in Table 03.1 will be implemented.

A consolidated implementation schedule will be developed as part of the Information Management System (IMS) Program. The IMS Program is required to be submitted by December 6, 2015.

Table 03.1
Proposed PSOPMP Phased Implementation Activities

Activity	Abbreviated Description
Wet Well Cleaning	Add PSD wet well crews to conduct routine inspections of wet well conditions, observe and document inspections, and subsequently perform wet well cleaning on an as needed basis to combat increasing clogging problems due to “non-flushable” materials, debris deposition, and grease buildup.
PS Technical Specifications Data Attribution	Add PSD staff to manage various consultant resources to conduct field site inspections of existing pump stations and to input resulting data into the EAMS database. This task is designed to ensure asset data fields in EAMS are populated with accurate asset data. This task also includes procurement of consultant or vendor resources as well as determining the best database repository for pump station asset positions, which currently reside within EAMS.
Critical Spare Parts	Subsequent to the completion of the Pump Station Technical Specifications Data Attribution, the asset inventory will be used to update and refine the spare parts (e.g., “insurance items”) list.
Diesel Equipment Maintenance	Add Mechanical trade staff for PSD to accomplish pump station emergency generator and portable pump diesel equipment maintenance (i.e., mobile and fixed) currently performed by Fleet Maintenance and Wastewater Plant Maintenance Divisions.
PS Operations & Instrumentation	Move SCADA alarm monitoring function to the PSD and add required shifts to ensure 24/7 monitoring. Add both PS Operations staff and Instrumentation Technician staff to maintain instrumentation located in the pump stations.
Maintenance Scheduling	Establish and provide oversight and development of maintenance scheduling for routine, preventative, and predictive maintenance in EAMS. Oversee the EAMS software for PSD. Work with in-house engineer to manage and maintain accurate database of assets in EAMS.
Submersible Repair Shop	Add PSD Mechanical trade staff to repair submersible pumps and PS Supervisor staff to adequately manage the current submersible pump repair shops. Due to the high number of submersible pumps utilized by the PSD, a 2nd submersible pump repair shop is required.
Mechanical Capital Improvement	Perform mechanical capital projects. Provide support to O&M staff and manage capital improvements to mechanical equipment.
Predictive Maintenance	Addition of new PSD staff to accomplish Predictive Maintenance activities, including vibration analysis, thermal imaging, insulation resistance, and oil analysis, which are used to find defects not typically discovered during routine or preventative maintenance inspections.
Analyze Communications	Analyze communications options, such as radio, cellular, beeper, etc., to determine best means of communications between field personnel and supervisors.

04. PSOPMP Performance Measures

In accordance with the CD requirement that MDWASD establish performance measures and develop written procedures for periodic review, Section 04.01 establishes the purpose for the performance measure program; Section 04.02 lists the PSOPMP performance measures; and Section 04.03 describes the on-going evaluation and review activities.

04.01 Purpose of Performance Measures

Performance measures, which compare actual performance against an established performance standard, benchmark, target, or level of service (LOS), help identify the relative health of specific operational areas. Performance measures include a subset of measures termed key performance indicators (KPIs). KPIs measure the relative health of the pump station system by comparison of actual system performance to system LOS targets. System managers will use performance measures to justify, allocate, and/or reallocate resources to underperforming areas; plan and develop budgets for additional resources; evaluate and document the effectiveness of different practices and procedures. In addition to efficiently conveying system and sub-system performance to wide audiences, system managers will use performance measures to make comparisons of systems across time and geography. MDWASD will implement use of a performance measure and KPI target system to evaluate pump station system O&M activity progress towards achieving the CD goal in accordance to the CMOM philosophy for continuous improvement.

04.02 Established Performance Measures

MDWASD has adopted a limited number of initial performance measures and KPIs to meet County and PSOPMP goals, and to ensure that MDWASD's successes are properly documented and reported. These measures and KPIs will aid MDWASD in assessing the overall effectiveness of the PSOPMP and will enable MDWASD to make adjustments in the program to achieve the established performance goals or targets to meet CD and LOS requirements. Table 04.1 presents the KPIs specified by the CD and MDWASD's target performance level for each which MDWASD will employ to measure, track, and report performance of the pump station system.

Table 04.1
Key PSOPMP Performance Indicators

Key Performance Indicator	Target
Annual number of pump station-related SSO events	9
Percentage of pumps in service	99%
SCADA network availability [1]	100%
Ratio of planned work orders to unplanned work orders	70%
Annual average time a budgeted position remains vacant	3 months
Annual average percentage of end of month vacant budget positions within PSD [2]	7%
Annual hours of PSD employee technical training	20

[1] MDWASD system-wide.

[2] The average of the 12 end of month values.

In developing the KPIs listed in Table 04.1, the PSD considered including an SSO response time measure. However, this performance measure was considered more applicable to the Sewer Overflow Response Plan (SORP) program. The first responders to a potential spill event are the WCTLD crews. The PSD is only notified of a potential spill event once the first responders have verified the spill event and performed a cursory cause analysis to determine that the spill is related to problems associated with the pump stations.

For pump station problems that do not result in a spill, the PSD is typically made aware of such problems through SCADA alarms and PSD or other MDWASD personnel visiting the station. Under current business processes, the work order tracking system in EAMS cannot easily track response times for such events because each activity and each trade requires a separate work order to be generated.

04.03 Performance Metric Reviews and Revisions

Since one purpose of the PSOPMP is to achieve continuous improvement, the PSD's management team will periodically evaluate each performance measure and may revise or change performance measures based on relevancy and value to the successful implementation and management of the PSOPMP. The PSD will review KPI actual performance versus target measures on a monthly basis to track performance versus progress toward the goal. The

monthly report reviews will be designed to identify areas where additional resources or attention is required to meet the annual target.

A semi-annual review will be conducted to determine if more wide-spread program-level modifications may be needed to meet overall system goals.

On an annual basis, the overall performance will be assessed and appropriate corrective measures identified and implemented to improve performance. The PSD's management team annual review will assess trends and needs for adjustments to preventative maintenance schedules and staffing and funding levels. These annual reviews may also drive modification of other CMOM Program element changes or revisions.

The PSD management review team responsible for periodic performance measure reviews will include:

- The PSD Division Chief,
- The PSD Assistant Superintendents, and
- The Trade Supervisors from each Maintenance Service Area.

For semi-annual reviews, the Assistant Director Wastewater is included. For Annual reviews, both the Assistant Director Wastewater and the Deputy Director of Operations are included.

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05. Pump Station Maintenance

Section 5 briefly outlines PSD's routine maintenance activities. The subsections are organized to generally follow the contents of Section 19(f)(i) through 19(f)(iii) as follows:

- Section 05.01, Means and Modes of Communication, addresses CD Section 19(f)(i).
- Section 05.02, Pump Station Technical Specifications, addresses CD Section 19(f)(ii).
- Section 05.03, Updating Pump Station Specifications, addresses the continuous improvement procedures that will be required under the PSOPMP's phased implementation plan to fully address CD Section 19(f)(ii).
- Section 05.04, Pump Station Monitoring Systems, addresses CD Section 19(f)(iii).

05.01 Means and Modes of Communication

The MDWASD wastewater collection system has one permanently manned pump station, Master Pump Station 0001. Master Pump Station 0002 has been automated and is no longer manned 24 hours per day. Operation and maintenance of Master Pump Stations 0001 and 0002 falls under the Wastewater Treatment and Maintenance Division. Regional/Booster Pump Stations 187, 300, 307, 536, 559, and 1310 are manned depending on system requirements. As part of the implementation phase of the PSOPMP, an independent analysis of the proper communication technology to be used in the future will be completed.

05.01.1 Personnel Communications

The primary means of communication between field crews and management personnel are direct telephone lines, cellular phones (i.e., personal cell phones), and radio. PSD utilizes three radio groups to facilitate communications. Radio communications are typically routed through the Communications Center, which is located at the Douglas Road main office. Currently, radio communication is the preferred method of communication because of the ability to go back and review recorded messages and track information about the transmission. Since the radio system has been taken over by the Police Department, the ability to review historical information has been cumbersome and inefficient. If the Communications Center has the recording, the

historical information can be provided, but there are times when the Police Department either are unable to provide the information or getting the information is not timely.

Work order communications rely heavily on the Enterprise Asset Management System (EAMS). The PSD Planners/Schedulers generate EAMS work orders for routine and preventative maintenance at frequencies described in later sections of this PSOPMP. EAMS also tracks unplanned, corrective, and emergency work orders that are generated by supervisors or the Communications Center. PSD maintenance staff generate work orders that are reviewed and assigned by supervisors to the appropriate resources. As the PSD implements the planned predictive maintenance activities under the CD, the EAMS work order system will be enhanced and extended to predictive maintenance activities.

Routine and preventative maintenance activities for PSD are documented by hand-written standardized forms, which are then scanned and attached to the correlating EAMS work order for closure. For the SCADA Section, routine and preventative maintenance activities are documented using digital hand held devices that allow the crew to pull up and check off a list of maintenance items. Upon completion of the checklist items, the EAMS work order is closed.

05.01.2 Equipment Communications

A Supervisory Control and Data Acquisition (SCADA) system is used to facilitate communication of equipment alarms and operating conditions. The system allows remote monitoring, data capture, and control of pumps stations.

The SCADA system monitors, transmits, and records data on various pump station parameters as listed at the end of this subsection. All MDWASD owned and operated wastewater pump stations, have SCADA installed. All new donated stations have SCADA installed within 6 months after MDWASD becomes operationally responsible, as required by the Consent Decree.

The Communications Center has access to remotely control all pump stations via SCADA; however, since they are not part of the PSD and lack operational knowledge, they are prohibited from doing so unless given specific instructions by a PSD Supervisor. During implementation, the PSD plans to move forward with activating the staffing plan, as defined in Section 09,

Staffing and Funding Plan, to assume the operational monitoring of the pump stations by creating positions for trained SCADA operators and expanding to multiple shifts. These staffing changes will enable the PSD to make informed decisions about the system and improve reaction time to alarms in the system.

The SCADA system monitors the following parameters:

- Elapsed run times per pump,
- Total run times by unit,
- Number of starts,
- Discharge pressure,
- Wet well level,
- Pump indication,
- Calculated flow,
- Rainfall gage data, and
- Generator indication.

SCADA alarm points include:

- Control unit (RTU) battery,
- Power (AC) failure,
- High level,
- Low level,
- Station flooding,
- Intrusion,
- High pressure (suction & discharge),
- Pump failure, and
- Other abnormal condition(s) depending on the facility.

05.02 Pump Station Technical Specifications

The PSD system has several types of pump stations as defined below. Stations are organized into one of four maintenance service areas: North, Central West, Central East, and South.

Master Stations. A Master Station is a type A wet well / dry well pump station with a building housing five or more large pumps (greater than 25 BHP each). Master Stations pump into large force mains that feed directly to a treatment plant. Currently, MDWASD has two master stations which pump directly into the Central District WWTP: Master Pump Station 0001 and Master Pump Station 0002. Design is currently underway for the addition of a sixth pump at Master Pump Station 0002. As previously indicated, the master pump stations are considered influent pump stations and are operated and maintained by the WWTPs. The master pump stations will be addressed in the WWTP Operations and Maintenance Program.

Table 05.1
Master Pump Station Listing

Number	Code	District	Station Name	Station Address	Atlas Pg.
0001	A52M+	SACE	4th Street WW Station	390 N. River Dr. NW	F-14
0001A	A32M+	SACE	4th Street WW Station	390 N. River Dr. NW	F-14
0002	A5RM+	SACE	9th Street WW Station	925 Biscayne Blvd. NE	E-13

Regional Stations. A regional station is a type “A” wet well/dry well structures with buildings. The regional categorization definition is a combination of station function and geographic location. Regional stations typically receive flow from other lift stations. These stations are categorized as such because they were constructed to replace small package-type wastewater treatment facilities that were acquired by MDWASD from 1973 to the mid-1980s.

Table 05.2
Regional Pump Station Listing

Number	Code	District	Station Name	Station Address	Atlas Pg.
0301	A31R+	SAN	Sunny Isles	350 Sunny Isles Blvd.	A-4
0307	A41R+	SAN	Hialeah WW Pump	7545 2nd Ave. W.	L-6
0310	A21R+	SAN	North E. Dade (R)	16650 Glades Dr. NE	D-4
0346	A32R+	SAN	N. Miami WW Pump	13760 5th Ave NE	E-5
0348	A4MR+	SAN	Hialeah East WW Pump	5700 8th Ave E.	K-7
0414	A32R+	SAN	Miami Lakes, #E-5, S-176	13920 60th Ave. NW	M-5
0415	A42R+	SAN	Carol City #8-P3, S-159	3750 181th St. NW	K-3
0417	A32R+	SAN	Palm Spring No. #7-P2	7950 178th St. NW	P-3
0418	A3MR+	SAN	Hialeah West WW Pump	3330 76th St. W	Q-6
0423	A32R+	SAN	Golden Isles, #12-PL	2451 203rd St. NE	C-1
0424	A32R+	SAN	Proj 12-P2, S-180	21101 28th Ave., NE	B-1
0516	A32R+	SAS	FW&U 21-PL, S-186	10350 Puerto Rico Dr.	R-27
0517	A32R+	SAS	Cutler Ridge Station	18445 Old Cutler Rd.	P-26
0571	A31R+	SACW	Sunset Park	9775 83rd St. SW	R-19
0681	A21R+	SAS	GSA Station #2	15840 127th Ave. SW	U-24
0683	A32R+	SACW	WWL Station	4801 117th Ave. SW	S-17
0685	A22R+	SACW	Village Green Station	11991 34th St. SW	T-16
0691	A42R+	SAS	Homestead Lift Station	551 8th St. SE	Y-34
0692A	A32R+	SAS	Rex Lift Station	30211 147th Ave. SW	V-33
0698	A31R-	SAS	SMH Station	20820 117th Ave. SW	S-27
1072	A32R+	SAS	Gateway Pump Station	35250 177th Ct. SW	Z-36

Booster Stations. Booster Stations are type “A” stations which house three or more large centrifugal pumps. Booster stations are designed to maintain constant pressures in the force main system on the suction side for effective and efficient operation of local pump stations. These station types discharge through large diameter force mains for transmission of flow to the treatment facility. Booster stations use variable frequency drives that are controlled by suction and discharge pressure, or 2-speed motors, and commonly are equipped with cone type flow control valves and standby engine-generators.

Table 05.3
Booster Pump Station Listing

Number	Code	District	Station Name	Station Address	Atlas Pg.
0187	A32B+	SACE	Flagler Street	1 Blvd. NW	N-14
0300	A52B+	SAN	Opa Locka WW Pump	12700 30th Ave. NW	J-6
0306	A3RB+	SAN	Myrtle Grove	17800 29th Ct. NW	J-3
0345	A3MB+	SAN	Opa Locka Airport, S-145	15000 37th Ave. NW	J-5
0347	A3MB+	SAN	N. Miami #2, E-1, S-141	1825 150th St. NE	C-4
0416	A3MB+	SAN	Sunshine Util., #7-PL	7301 186th St. NW	N-2
0421	A3MB+	SAN	Andover #10-PL, S-161	20215 2nd Ave. NW	F-1
0422	A3MB+	SAN	Riverdale, #9PL, S-163	3150 208th Ter. NW	J-1
0425	A3MB+	SAN	Aventura #12-P3, S-165	19201 29th Ave. NE	B-2
0426	A32B+	SAN	Eastern Shores	3801 Sunny Isles Blvd., NE	A-4
0522	A42B+	SAS	Goulds Perrine	20820 117th Ave. SW	S-27
0536	A3MB+	SACW	Kendall WW Pump	8989 117th Ave. SW	S-20
0559	A52B+	SACW	K-Land Sewer PS	8700 95th Ave. SW	Q-19
0692B	A42B+	SAS	Rex Lift Station	30211 147th Ave. SW	V-33
1073	A42B+	SAS	Florida City Station	461 5th Ave. NW	Z-35
1310	A4VB+	SAN	Not assigned in EAMS	1500 37th Ave. NW	J-5

Wet Well / Dry Well Stations (With Buildings). Wet Well/Dry Well Stations (With Buildings) have a classification type of “A”. In these stations, the pumps are separated from the wastewater being pumped. This type of station allows maintenance personnel to perform hands-on inspection without removing it. These stations have two or more dry well pumps.

Wet Well / Dry Well Stations (Underground). Wet Well/Dry Well Stations (Underground) have a classification type of “B”. In these stations, the pumps are separated from the wastewater being pumped and are located below grade either in a structure made of steel or concrete.

Wet Well Station: Submersible Pumps. Submersible Pump Stations have a classification type of “C”. These stations have pumps that are designed to operate submerged in the wastewater being pumped. These stations have 2 or more pumps.

Wet Well Station: Submersible Pumps with Building. Submersible Pumps with Building have a classification type of "D". These stations are submersible pump stations that are located within a building.

Wet Well Station: Self-priming Pumps Above Ground. Self-priming Pumps Above Ground have a classification type of "E". These stations have self-priming pumps mounted above ground (or partially above ground). They are typically fenced in for security, but have no buildings or enclosures.

Miscellaneous Stations: Stations that do not fall within the above listed station classes including pneumatic ejector dry well stations, air compressor stations, and vent stations have a classification type of "F". This class is being phased out.

Appendix B, EAMS Pump Station Database, is an example of the PSD-maintained stations organized by classification.

05.03 Updating Pump Station Specifications

MDWASD has the ability to enter pump station asset data into the Infor EAM System (EAMS) database for ease of data retrieval and to have a common data source. The EAMS database can be used to track systems, assets, inventories, work orders, etc. EAMS manages data by packaging it into three different types of entities: systems, positions, and assets. A "system" is a compilation of features that function as one entity with a single function. System entities can contain other entities, including position entities and other system entities. "Position" entities are used as placeholders for "asset" entities, and define the specific tasks needed to achieve a system goal. EAMS is a hierarchical system with the system entities at the top level, and the assets at the bottom level. The hierarchy of entities within a system entity is known as the "structure" and it defines sub-systems, positions, and assets that are part of the parent system.

Assets can be moved within the system from position to position, or they can be moved to a storeroom as inventory items or to a garage for repair. A "position" entity will describe what type of assets that particular position should accept. The "asset" will describe a specific piece of equipment down to the serial number. Assets should be assigned only to a position that

matches its characteristics. Each asset, position, or system can potentially have a class associated with it. A class has custom fields associated with it, and each time the class is associated with an entity, EAMS will apply those custom fields to the item so that information can be captured by the end user. The assignment of an asset to a position has to be done manually.

Each entity in EAMS has a set of standard fields, and user-defined custom fields, that capture the engineer's requirement that is pertinent to that particular entity. This capability allows a pump station to be described at a high level as a "system" entity, and at a low level in the "position" entities where specific component-level details are described. For example, at the "system" level the pump station can have a field such as "number of pumps", voltage, emergency portable generator kilowatt requirement, and station design capacity, which is more representative of the overall system operation. At the pump "position" level, the pump class identifies characteristics such as the pump total capacity, net capacity, horsepower, revolutions per minute (RPM), impeller size, impeller outer diameter (OD), total dynamic head (TDH), flow, etc. At the "asset" level, a pump asset will contain the same parameters as the "position" and will also include other asset-specific fields such as serial number, manufacturer, year built, etc.

Pump stations are entered into the EAMS database as "system" entities, and these in turn are part of a maintenance service area "system" entity, which are ultimately part of the parent PSD "system" entity. The four maintenance service areas are described as Service Area North (SAN), Service Area Central East (SACE), Service Area Central West (SACW), and Service Area South (SAS). In EAMS pump station system entities are identified by their class field "PUMPST", and belong to the Equipment Owner field "830" which refers to the PSD. Appendix B, EAMS Pump Station Database, contains a figure depicting a typical pump station asset hierarchy within EAMS.

Currently, only a limited number of EAMS pump station data fields are populated. The PSOPMP implementation plan will include the proper development of EAMS to handle capturing pertinent data for pump station components and subsequent field data acquisition activities to verify the currently populated data and to acquire new data. During field data acquisition activities, the following EAMS data fields will be filled in as part of the requirement for a technical specification

for each of the MDWASD-owned pump stations. The following list identifies a sample of some of the parameters which will be collected. A more complete list will be developed with PSD during the process of implementation.

- Station number,
- Address,
- Atlas page,
- Station classification,
- Station capacity (gpd),
- Number of pumps,
- Station speed,
- Station type,
- Station horsepower,
- Station phase,
- Station voltage.

The following list identifies some of the detailed information that the current EAMS database is lacking:

- Equipment type/class,
- Manufacturer,
- Model number,
- Equipment type,
- Impeller size,
- Impeller unit measure,
- Impeller interior diameter (ID),
- Total dynamic head (feet),
- Pump capacity (gpm),

- Speed (rpm), and
- Motor (hp).

Screen shots of the EAMS pump station data currently populated is in Appendix B, EAMS Pump Station Database.

The EAMS data acquisition implementation will be completed in a three step process:

1. Properly analyze the viability of EAMS and then move forward with a full implementation of an asset management system that can efficiently capture and report detailed information about the PSD system. The implementation of EAMS will include bar coding of all assets within PSD's responsibility and a system that will address repairable spares.
2. Complete a total system inventory utilizing a mobile data acquisition tool (i.e. laptop, tablet, etc.) to populate the existing list of pump stations with detailed information necessary for PSD to operate and maintain their assets. If consultants or vendors are used for the data acquisition, PSD staff time will also be required to accompany the contractors to each station and assist in equipment access and operations.
3. Develop a protocol to update the database with replaced components due to maintenance or rehabilitation to include the addition of new pump stations to the system to ensure the database remains populated with accurate inventory information.

The EAMS data acquisition implementation process will be coordinated with the implementation of the PSIP, SSAMP, IMS, and GIS CMOM Programs. In general terms, the CD requires:

- The PSIP to develop corrective actions for pump stations not in compliance with NAPOT requirements;
- The SSAMP to perform a current condition assessment of sewer system components, including the pump station components;
- The IMS to establish management, operations, and maintenance reporting to evaluate O&M, customer service, track scheduled O&M, etc.
- The GIS to import new assets into the appropriate GIS layer within 90 days.

05.04 Pump Station Monitoring Systems

As noted in Section 05.01.2, MDWASD uses the SCADA system to remotely monitor and control all pump stations within the WCTS.

Primary pump station automatic level controls, including bubblers, and submersible pressure transducers used in conjunction with floats as backups, are used to measure the level of wastewater in a wet well and activate/deactivate pumps via auxiliary control equipment, which converts the measurement from the primary control into a signal for a pump to start, stop, or change speed. These secondary controls convert a sensing signal into a mechanical or electrical signal which in turn activates a low voltage motor relay to start or stop motors, or signals to change ranges on variable speed equipment. Starting and stopping pumps can be performed remotely through the SCADA system to control both the discharge and suction pressure of the booster pump stations, to adjust total dynamic head in the system, and to assist in redirecting flow when necessary.

One of the primary functions of the SCADA system is to transmit alarms of equipment malfunctions. Alarm notifications typical generate “unscheduled maintenance or emergency” work order responses. The system is also used as a Predictive Maintenance tool (i.e., as in the case of pump operating time trend analysis example cited in the below paragraph). The data received from SCADA can be queried to generate various reports which are used to analyze overall system operation and identify individual pump station anomalies and repeat failures.

SCADA historical data records are stored in two separate databases. PSD uses 3-minute data and one-hour data to proactively identify potential problems with a pump station. Special attention is paid to pump operating time increases or when pumps exhibit uneven run times.

The SCADA Section has recommended development of a SCADA master plan to address issues such as appropriate technology upgrades, data management, data analysis improvements, historical databases, etc. Implementation of the SCADA master plan will be coordinated with MDWASD’s existing Pump Station Remote Monitoring (PSRM) Program under CD Paragraph 18(b). There is a need to address interdependencies with new CMOM programs identified in CD Paragraph 19.

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06. Pump Station Emergency Maintenance

The PSD characterizes emergency maintenance operations as unplanned/unscheduled or corrective activities that require immediate action in order to protect and preserve public health and safety. Emergencies are typically caused by situations that hinder the operation of the pump stations by reducing or interrupting their ability to transport sewage. The majority of emergency maintenance operations involve minor localized problems which affect a small area and which are addressed by a limited number of service crews. During times of significant storm events or major blackouts, the PSD will institute the Overflow Prevention Plan (OPP), effectively mobilizing and placing into high alert the entire PSD. The OPP is essentially a plan for more "extreme" emergencies such as a hurricane or a wide-spread flooding event.

Pump stations are critical for the proper transport of sewage through the WCTS. A nonfunctional pump station will cause sewage to accumulate in the pump station's wet wells and will cause an upstream backup which will result in overflows. For this reason, pump stations are designed with a number of safety mechanisms such as redundant pumps and, in the case of major pump stations, backup electric power generators. All of the pump stations in the MDWASD system have an N-1 design, where N represents the number of pumps needed to effectively handle the permitted flow. Therefore, if one of the mechanical pump systems becomes non-functional, there is at least one on-site backup pump to takeover. Unlike the mechanical redundancy, not all pump stations have backup electric power generators; therefore, the stations without generators are at risk of complete shutdown if there is a power outage as portable generators will have to be transported from elsewhere.

It should be noted that most overflows are caused by problems encountered on the wastewater collection lines such as grease blockages and broken mainlines. These problems with the WCTS fall under the responsibility of the Wastewater Collection and Transmission Line Division (WCTLD). Nevertheless, the PSD coordinates emergency responses with the WCTLD where there is overlap or where both need to work together to resolve an emergency situation caused by pump station problems. This cooperative effort is especially common when responding to spill events where a pump station problem causes an overflow at an upstream manhole. In those cases where the pump station was determined to be the cause of the overflow, WCTLD is

responsible for the spill clean-up activities, while PSD is responsible for the final spill reporting coordination with the Communications Center.

06.01 Sewer Overflow Response Plan Overview

As part of the current Consent Decree requirements, MDWASD is developing a Sewer Overflow Response Plan (SORP). The SORP will detail the regulatory, public notification, and reporting requirements as required by the Consent Decree. This SORP will replace the existing program for identifying and reporting SSOs.

06.02 Problem Identification

Due to the sensitivity of the WCTS to problems at the pump stations, any problem that could potentially create an overflow is considered an emergency and PSD staff responds accordingly. As described below, PSD problems can be identified through numerous channels, including:

- SCADA alarms,
- MDWASD personnel, and
- Customer complaints or external agency personnel.

Situations that require emergency action on the part of the PSD are routed through the Communications Center. The Communications Center is a 24-hour manned operations center within the Security and Communications Division, which is responsible for receiving notifications of potential problems and communicating these problems to the appropriate MDWASD divisions. Problems can be reported to the Communications Center via telephone by members of the public, via telephone by other agencies such as from RER-DERM, or via telephone, radio, or the County's intranet by personnel from within MDWASD. The Communications Center also monitors MDWASD's SCADA system for critical alarms requiring immediate action.

06.03 Emergency Operation Equipment and Capabilities

Critical to the ability of the PSD to mitigate emergency conditions are its portable emergency equipment such as diesel generators and bypass pumps, both of which are trailer-mounted for ease of transportation. Currently, the PSD is adequately equipped to handle most emergency

situations and abnormal events such as blackouts and tropical storms that may cause localized flooding.

06.03.1 Backup Power

The PSD relies on two types of backup power: on-site generators for larger stations such as master, regional, and booster stations, and portable generators for smaller pump stations. Larger stations are critical to the operation of the system and are thus expected to remain operational during most emergency situations. The PSD uses diesel-powered on-site generators. These installations require other ancillary equipment such as a diesel bulk storage tank and day tank, diesel pumps, and proper ventilation equipment. Many of these activities are maintained by other MDWASD divisions as described below.

Generators are composed of a driver component (the diesel engine) and the driven component (the generator itself). The PSD maintains the driven components for both mobile and fixed generators. The Wastewater Treatment and Maintenance Division maintains the driver component for fixed generators, and the Fleet Maintenance Division maintains the driver components for mobile generators. Approximately 180 to 190 pump stations have fixed generators. All other stations have external generator capability for mobile emergency generators. The PSD currently has 43 mobile trailer-mounted generators, the majority of which are from the early 1990s or newer.

06.03.2 Portable Bypass Pumping

Portable bypass pumping equipment is utilized during catastrophic equipment failures, when a generator is not a feasible alternative, or when a station needs to be taken out of service for either upgrades or wet well maintenance. When in bypass, the influent to the wet well is pumped to the surface and delivered through a valve connection in the pump station discharge line. Valves within the station control vault would be closed to prevent backflow into the station. Given this configuration, the pump station should operate to its design capacity while necessary repairs are being made or until power is restored. Bypass pumps are driven by electric motor or diesel engines. The PSD maintains bypass pumping equipment. The PSD currently has 41 mobile trailer-mounted pumps, the majority of which are from the 1990s.

Figure 06.1 is a schematic showing a typical bypass pumping installation.

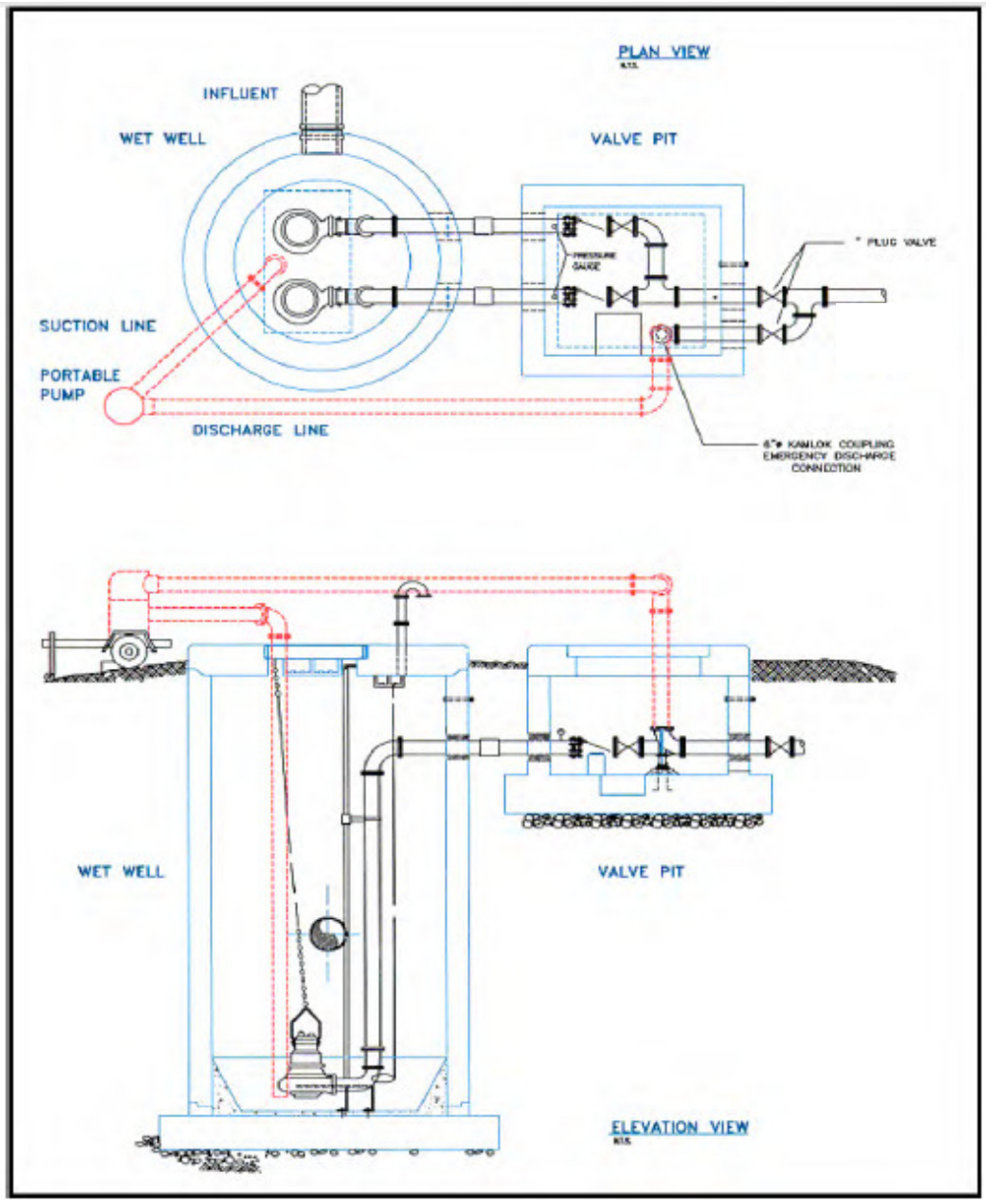

Figure 06.1
Wastewater Pump Station Bypass Schematic

06.04 Emergency Maintenance Procedures

The PSD responds to emergency conditions by performing emergency maintenance of pump station equipment. The majority of issues are “triaged” prior to dispatching crews by studying the conditions at the pump station by way of SCADA. However, the exact problem is typically

identified after the crews arrive onsite. Examples of pump station emergency maintenance can be categorized as:

- All pumps or motors are inoperable due to equipment failure (i.e. catastrophic failure);
- Lack of electrical power to the station;
- Failure of with instrumentation and/or controls; and
- Failure of SCADA RTU communication.

When one pump or motor becomes inoperable due to equipment failure, the operation of the pump station is not fully inhibited given the redundant pump design prevalent in all pump stations. Therefore, during these situations the repairs to the station can occur without the need to install a portable bypass pump since the remaining pump(s) can handle the full permitted flow. Catastrophic failures are instances in which a majority or all of the pumps or motors at a particular station suffer equipment failure leading to a significant or complete loss of pumping capacity and thus requiring the use of portable bypass pumps.

For stations that do not have onsite generators, a lack of electrical power to the station results in a complete shutdown of the station and therefore they are completely inhibited from operating. If the affected stations have an external generator connection, then portable generators are installed immediately to get the stations back online. Stations with no external generator connection require the use of bypass pumps during power loss situations. Failures of onsite backup generators are not common; however, if a backup generator does not come online during a power outage, the onsite electrical crew will attempt to address the problem. If the problem cannot be fixed right away, the responding electrical crew will install a mobile generator or request a bypass pump, depending on the availability of an external generator. In addition, the crews will notify the Communications Center that maintenance for the fixed generator is required by the Wastewater Treatment and Maintenance Division. The PSD crews will also inform Florida Power & Light (FP&L) of any power outages affecting the PSD's pump stations by contacting FP&L's hotline.

Problems in pump stations can also arise with instrumentation and SCADA RTU communication issues. When a problem arises due to instrumentation such as pressure transducers, level

controllers, or other, the Electrical trade addresses the issue. When a problem arises due to communication issues with the SCADA RTU, the SCADA Section technicians are currently responsible for addressing the issue. Since the main control of the pump stations is handled by a local station controller, a lack of communication to the SCADA RTU does not inhibit the operation of the station; however, wet well level and all statuses depending on SCADA transmission will not operate until the communication failure is resolved.

When any sort of equipment failure occurs, be it a pump, motor or instrumentation failure, the onsite crews will first assess whether the PSD has the capability to handle the repairs. It should be noted that the PSD is well-equipped to handle the majority of repairs and only in special circumstances where special parts are not kept in stock and/or the services to be provided are highly specialized does the PSD resort to requesting the services of outside Contractors / Vendors.

06.05 Post-Event Analysis

Upon full implementation of the PSOPMP, the PSD will conduct monthly reviews of emergency work resulting in an SSO event to identify “lessons learned” from the emergency situation. The goal of these monthly reviews is to ensure proper procedures and protocols were followed and to identify potential inadequacies associated with those procedures and protocols. The post event analyses will ensure lessons learned are applied to minimize the potential for future problems caused by similar conditions. The post event analyses will further ensure that if a “temporary fix” has been applied, steps to make a proper, permanent fix are identified for implementation. SOPs will be defined in the SORP document.

07. Pump Station Preventative and Predictive Maintenance

Preventative maintenance is the scheduled work performed to prevent equipment breakdown, reduce wear, improve efficiency, and extend the life of equipment. Scheduled routine maintenance includes the inspection, cleaning, and adjusting of equipment as necessary during routine pump station inspections and scheduled preventative maintenance.

MDWASD currently employs an EAMS software platform that serves to automate preventative maintenance schedules, generate and track work orders. Upon complete configuration, the EAMS system will enable the PSD to:

- Track inventory,
- Maintain a detailed pump station infrastructure database,
- Track equipment location that is dispatched and/or brought in for service,
- Query information on individual pump station equipment,
- Generate and track work orders for:
    - Scheduled Station inspections
    - Preventative Maintenance (PM)
    - Routine Maintenance (RM)
    - Unscheduled maintenance
    - Emergency maintenance
- Maintain equipment maintenance history,
- Generate reports, and
- Track maintenance cost and labor expenditures.

The PSD's preventative maintenance program has been developed based on the following factors:

- **Equipment manufacturers' recommendations.** Maintenance and overhaul recommendations are provided for each piece of equipment by the manufactures. In the implementation phase of this PSOPMP, it will be important to collect vendor literature

digitally and ensure it is stored in the EAMS associated with the respective equipment. The literature will define the frequency of oil changes and lubrication of bearings, types of lubricant, operating temperature ranges, pressures, flow rates, and disassembly procedures for specific equipment maintenance or parts replacement.

As a refinement to the existing preventative maintenance/routine maintenance methodology, once all equipment is inventoried and identified, a more accurate equipment maintenance schedule can be developed by listing all of the manufacturers' recommendations in sequence according to time periods. These schedules can be cross referenced with the current preventative and routine maintenance procedures and programmed in the EAMS to automatically generate work orders for PSD crews in accordance with revised scheduled requirements and availability of additional PSD staff to accommodate such revisions.

- **Individual station requirements.** Maintenance scheduling is dependent upon trade and station design. Due to the time required to travel in a congested urban area, PSD has scheduled preventative maintenance activities by station type, calendar and by geography. Preventative maintenance activities at pump stations in close geographic areas are scheduled at the same time so the maintenance crews can follow a defined route that is as efficient as possible. As a part of implementation, specific frequencies of schedules need to be adjusted to accommodate the needs and the geography of the individual station. These items will be developed primarily from station operating experience and will be re-evaluated annually by field crews, supervisors, and management or when the addition of donation pump stations require changes in the geographic grouping of the stations in that area.

- **Knowledge of the system and past performance.** Knowledge and experience regarding local condition and the reliability of the existing equipment are also considered in developing the maintenance schedules.

07.01 Preventative Maintenance Activities and Responsibilities

Preventative and/or routine maintenance is categorized into three trades by PSD; Mechanical, Electrical, and Structural.. The SCADA components at the pump stations have their own preventative maintenance/reactive maintenance schedules that are performed by the SCADA Section and are described in subsequent sections.

07.01.1 Staffing Resources and Capabilities

Appendix C, Routine and Preventative Maintenance Task Lists for the Trades, contains the specific task lists for:

- Mechanical Routine Maintenance,
- Electrical Routine Maintenance,
- Structural Routine Maintenance.

Preventative Maintenance is done for the Mechanical and Electrical components in accordance with the two detailed checklists provided in Appendix C. Upon implementation of the planned wet well capital unit, wet well inspections will be performed as part of routine maintenance inspections by all trades.

07.01.2 Service and Calibration

The equipment listed below is maintained as part of the routine and preventative maintenance tasks described above in accordance with the routine maintenance task lists included as Appendix C. The equipment is calibrated periodically by the PSD Electrical Maintenance Section, the Meter Installation and Maintenance Division, and the SCADA Section as part of MDWASD's scheduled maintenance. These groups are responsible for calibration of the following components to ensure data is transmitted to the SCADA system accurately. The following subsections describe the equipment in the system that is serviced and calibrated in accordance with their respective PM/RMs which are scheduled through EAMS.

Flow Meters. Flow meter maintenance is done by MDWASD's Meter Installation and Maintenance Division. Meter Installation and Maintenance maintains 37 flow meters associated with the WCTS. The wastewater meters fall into three specific categories based on purpose:

- Wholesale meters, which record flow from Volume Service Customers,
- Retail meters, which record flow from commercial or industrial customers, and
- Monitor meters, which record flow from regional pump stations and booster pump stations and from strategic points within the wastewater system.

For pump stations, there are 11 wholesale meters, 4 retail meters, and 22 monitor meters. These pump station monitor meters are critical in maintaining and operating the overall system flow direction and performance of the system. Meter maintenance is performed by the Meter Installation and Maintenance Section.

The Meter Installation and Maintenance Section is responsible for performing the following preventative maintenance activities on the meters in the wastewater system:

- Monthly: check condition of station, check 4-20 mA output and check calibration using flow simulator.
- Semiannual: conduct the monthly check plus perform a flow comparison (primary vs. secondary meters).

A complete meter inventory list which includes flow meter type, manufacture, size, and location sorted for pump stations only is included in Appendix D, Pump Station Meter Inventory.

Liquid Level Sensors. MDWASD currently uses two types of level controls, Bubbler System and Submersible Level Transducers. Float balls (float level switches) are used as backup level sensors for high level alarms and controls. Level sensors are part of the level control system that operate the pumps "On" and "Off". Additional components of the system include controllers and transmitters. The sensor can be cleaned and calibrated, but are typically replaced when they do not operate properly. Controllers and transmitters are also typically replaced when they fail.

Calibration of and between these units is performed during the Electrical Routine Maintenance Task List scheduled maintenance. The level sensors are checked for air leaks, pressure regulator set points, and alarm set points, as applicable to the sensor type. Crews ensure that pumps start and stop according to station's operating parameters and that level reading gauges are accurate and concur with SCADA readings. Notations of adjustments made to Level Controller are documented in the inspection forms and attached to the EAMS work order. As previously indicated, the Electrical Routine Maintenance Task List is included in Appendix C.

Bubbler System. Compressor bubbler systems are equipped with bubbler tube purge, tank moisture dump, system status indication, and system fault alarms. The unit provides a 4 to 20 mA analog output representing level for use by other devices to perform pump control or telemetry functions. The modular construction of this device allows for easy field servicing of the sub-assembly components.

Submersible Level Transducer. Submersible level transducers reliably measure the level of wastewater based upon the hydrostatic pressure of the liquid above the submerged sensor's diaphragm. The transducer provides an output signal directly proportional to the sensed level over the calibrated range of the sensing element.

Floats. Floats are normally used as back-up to the primary means of level controls as listed above. Typically, a series of floats are positioned at varying levels within the wet well to trigger alarm positions.

Alarm Sensors. SCADA equipment is calibrated or replaced on a SCADA maintenance scheduled. Alarm testing and is also covered by the Electrical Routine Maintenance Task List schedule. Alarms are checked, adjusted, or repaired as necessary to ensure proper functioning. The Electrical crew coordinates with SCADA and/or Communications Center to ensure that alarms are being received. External (local) visual alarms are also checked.

Elapsed Time Meters. Elapsed Time Meters (ETM) work in conjunction with the motor starters to record the run time duration of each pump. ETMs are inspected during both Electrical and

Mechanical Routine Maintenance Task List schedules. Readings are taken and compared to the transmitted SCADA data base. The ETMs are replaced as necessary.

Remote Sensing Equipment. Remote sensing equipment include a wide range of sensor options such as pressure switches, level sensor, pump run frequency and duration, pump motor current usage, sump pump activation, and alarms regarding lift station problems. The PSD Electrical trade preforms preventative maintenance, which test and record the electrical insulation level (meGOhms, amperage, and voltage of the above listed equipment.

07.01.3 Predictive Maintenance

Currently, the only predictive maintenance (PdM) being performed is routine review of ETM pump run time trends and transformers oil analysis.

The ETM installed on every pump is the best early warning sign of trouble at pump stations. In most properly operating pump stations, the pumps will be operating within a few percent of the run time to each other regardless of the number of pumps in the station. For the vast majority of single speed, automatic alternating pump stations in MDWASD's WCTS, this early warning system can help focus maintenance issues in an early, low manpower procedure. The accumulated data from the ETM readings, which is monitored for NAPOT compliance, is routinely tracked to determine if deterioration is occurring in any of the pumps in the system. The majority of pump clogging issues surround the wide variety of non-flushable materials now being discharged into the WCTS.

Under full implementation of the PSOPMP, additional predictive maintenance activities will be performed. The purpose of the additional PdM activities is to reduce unnecessary service to critical equipment which may otherwise be rebuilt or replaced simply due to fatigue. Typically, items that are identified as requiring the more proactive predictive maintenance take longer to service and are critical to pump station operation. These items are usually difficult to remove from service without affecting the operations of the facility. Instead of servicing this equipment on a routine schedule, various indicators are used to determine the need for the rebuild or replacement of equipment.

PdM is used for the early detection and prevention of equipment defects that could lead to unplanned downtime or costs. This is done when equipment is in operation to determine current equipment status and detect defects early. Through discussions with PSD, implementation will include the addition of four techniques: vibration analysis, thermal imaging, insulation resistance (i.e., the Megger Test), and oil analysis; all of which are used to find defects not typically discovered during routine or preventative maintenance inspections.

Vibration Analysis. One of the most revealing pieces of information regarding the condition of rotating machinery is a vibration signature. Vibration consists of amplitude, frequency, and direction. These provide the information needed to diagnose the machine's condition.

PSD maintains mostly centrifugal pumps that will generate pumping frequencies due to flow, cavitation, and recirculation (i.e., number of vanes multiplied by rpm for centrifugal pumps). Pumps also have other mechanical problems such as imbalance, misalignment, looseness, worn bearings, pipe strain, and resonance that cause vibration. Monitoring will include:

- Severity/amplitude,
- Frequency,
- Displacement,
- Velocity, and
- Acceleration.

Thermal Imaging. The objective of thermal imaging is to identify thermal variations, which may indicate:

- Hot bearings,
- Valve leaks,
- Plugged coolers, or
- Electrical faults.

As shown in the example thermal imaging scan in Figure 07.1, thermal imaging uses an infrared camera to measure equipment surface temperatures. Comparing thermal signatures with

duplicate equipment and establishing baseline thermal signatures for future trending will allow PSD to better predict when pump failure is imminent.

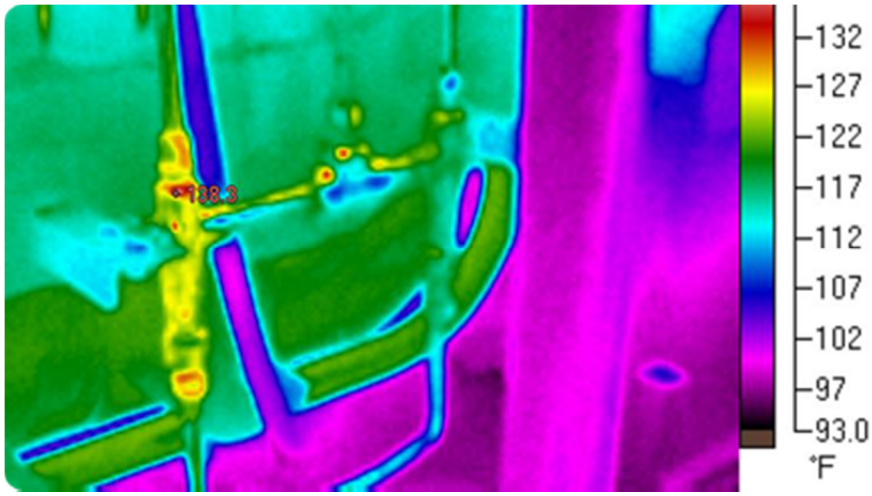

Figure 07.1
Example Thermal Imaging Predictive Maintenance

Items that will be included in the recommended implementation for target sensors are:

- Pump and motor
    - Bearing housings,
    - Seal flush systems,
    - Motor leads,
    - Couplings, and
    - Gear boxes.
- Ancillaries
    - Check/bypass valves,
    - Lube oil system, and
    - Heat exchanges.

Benefits of thermal imaging include:

- Identifying problems before they become serious.
- Improved reliability and uptime.

- Reduced unscheduled outages.
- Reduced maintenance costs.
- Baseline establishment for future trending.
- Quality assurance of new installations or repairs.

Insulation Resistance Testing (a.k.a., meggering the motor). The "Megger test" is a method of testing that makes use of an insulation resistance meter that will help to verify the condition of electrical insulation. This tests the integrity of the insulation of the motor windings, which break down gradually. Between half to three-quarters of motor failures in submersible pumps are caused by the insulation breaking down. With this testing method, users must choose between a manual test on a periodic basis or an automatic test. This form of testing is not new and has been in use for a number of years. One of the reasons that it is still such a popular option is because it is nondestructive. The test does have a limit of between 500 and 1,000 volts, so it may not always be able to detect some insulation punctures. It will usually show the amount of moisture, the leakage current, the moist or dirty areas of the insulation, and winding faults and deterioration. An example of a Megger test equipment kit is shown in Figure 07.2.

Figure 07.2
Example Megger Test Equipment

Oil Testing. Mechanical issues such as pump cavitation and vibration may be associated with poor lubrication. By checking the oil for viscosity, levels, temperature, contamination and type, pump problems may be prevented. Best practice activities to prevent oil-related failures include:

- Monitoring pumps and drivers closely to recognize subtle changes in oil levels, color, foaming, and cleanliness.
- Using infrared thermometers to check bearing and oil temperatures and inlet and outlet temps on oil coolers to determine efficiency.
- Frequently draining small amounts of oil from bearing housings to inspect for particle ingression, wear debris, and water content.
- Noting changes in vibration, unusual sounds, or oil leaks.
- Being vigilant in contamination-control practices. (It can cost 10 times as much to remove particle contamination from oil as it does to prevent contamination in the first place.)
- Learning the proper use of desiccant breathers, filter carts, and vacuum dehydrators.

07.02 Preventative and Predictive Maintenance Schedules

Figure 7.3 illustrates the PSD's process flow chart for issuing routine and preventative maintenance work orders.

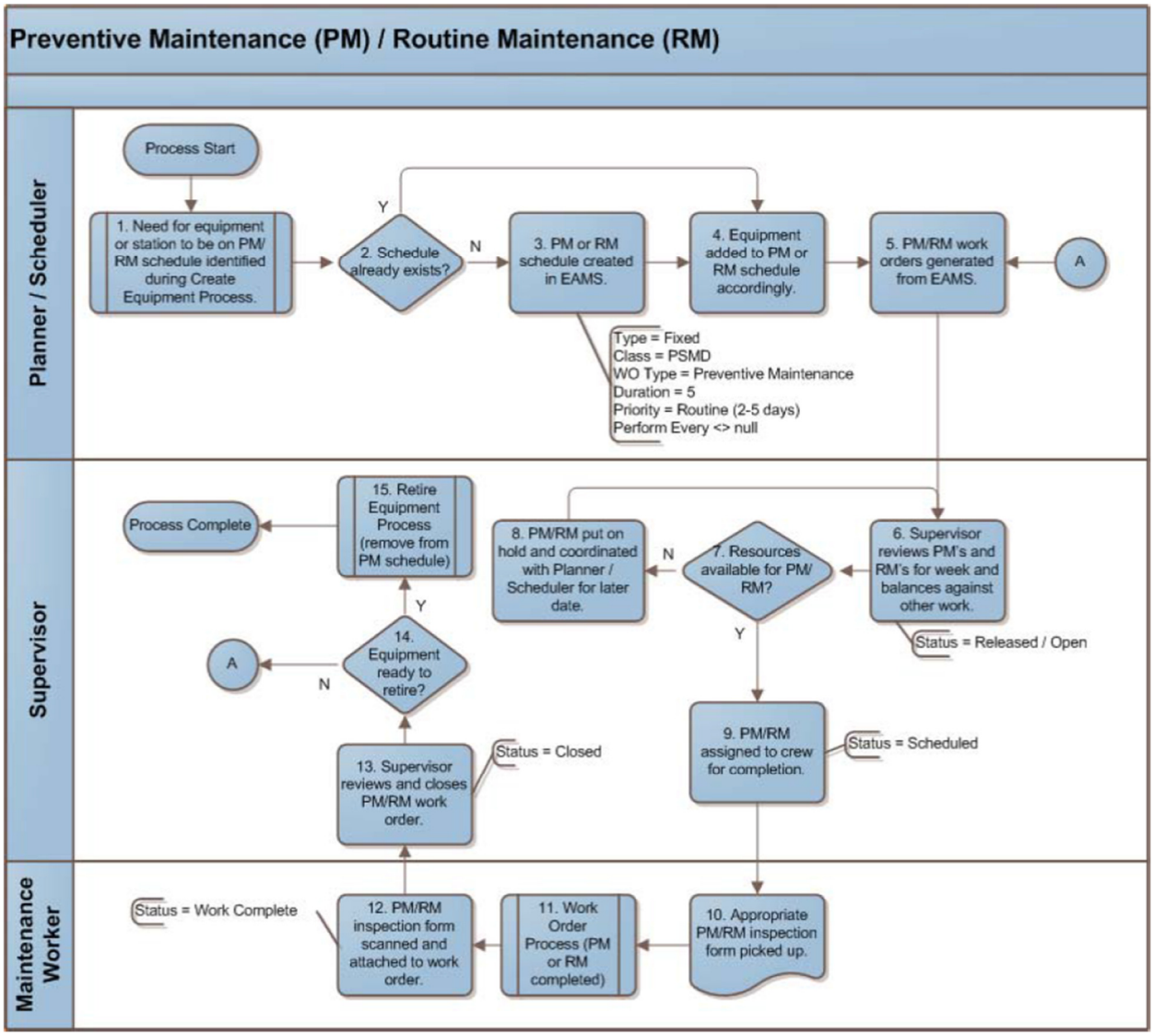

Figure 07.3
Preventative Maintenance (PM) / Routine Maintenance (RM) Flow Chart

07.02.1 Pump Station RM/PM Schedules

Mechanical, Electrical, and Structural routine and preventative maintenance schedules are automated through EAMS as developed by PSDs planner/schedulers. The work orders for the activity are generated automatically, and the PSD Supervisor assigns them to staff as appropriate. Routine and preventative maintenance activities are documented using the hard copy checklist described in Section 07.01, Preventative Maintenance Activities and

Responsibilities. Once the work is complete a scanned copy of the checklist is attached to the work order in EAMS and the work order is closed.

Routine maintenance is conducted:

- Every 28 days by all trades for booster, regional, and priority stations.
- Every 56 days by the Mechanical and Electrical trades for all stations.
- Every 84 days by the Structural trade for all stations

Preventative maintenance is conducted:

- Every year by all trades for booster, regional and proprietary stations (Proprietary stations are those operated and maintained by the PSD under maintenance contracts.)
- Every 2 years by the Mechanical and Electrical trades for all stations.
- As needed (As determined by the respective supervisor of a service area as a result of findings during routine maintenance. At any time the supervisor can request required scheduled maintenance based on field findings).

During the implementation phase of the program, PSD intends to increase efficiency of the work order process by modifying the business process and implementing a mobile solution within EAMS that will allow the field crews to create, access, utilize checklists, and populate routine and preventative maintenance documentation from a hand held device.

07.02.2 Monitoring Systems RM/PM Schedules

As with the pump station maintenance work orders, the SCADA Section maintenance work orders are processed through EAMS and are scheduled monthly for the regional and booster pump stations, as well as the rain gauges, and every two years for the remaining submersible and wet well/dry well pump stations. The work orders are generated by staff, and the supervisor assigns them to resources as appropriate. SCADA routine and preventative maintenance is managed on a digital hand held device that provides a checklist for the maintenance team to follow for calibration and taking down readings. It allows the crew to pull up and check off task

items as they are done. Since it is linked to EAMS, once the work is completed the work order is closed.

The SCADA Section performs preventative maintenance monthly or bi-annually, depending on staff-generated work orders in EAMS. See the SCADA preventative maintenance procedures provided in Appendix E, SCADA Maintenance Task List. The task lists in Appendix E were generated in EAMS. The following items are included:

- Utility Power Failure Alarm,
- Pump Failure Alarm,
- Pump Run Time Data Logging,
- Pump Duty Cycle Data Logging,
- Pump On/Off Status & Logging,
- Water Pressure & Flow,
- Wet Well Level with High/Low Alarm,
- Pump Warnings, Faults & Alarms Generator Status & Alarms, and
- Generator Status & Alarms.

The SCADA Section Preventative Maintenance Work Orders include Inspection Points. In EAMS, Inspection Points were created for each discrete task that the user would need to execute for each piece of equipment. Inspections Points are set up as either quantitative (requiring a numerical input), qualitative (requiring a text input either from a list of values or free text), or meter reading (numerical entry that is passed to a Meter in EAMS). The execution of Preventative Maintenance Work Orders in the field is further facilitated by the use of the Infor Advanced Mobile solution which, once a user synchs their work from the EAMS database to the device, provides disconnected access to the EAMS solution and store-and-forward technology that allows the device to synch up with the EAMS database when connectivity exists.

07.03 Monthly Work Order Status Reports

The PSD opens and closes work orders when the work is completed. Monthly EAMS reports are generated indicating the number of open work orders each month. To demonstrate the timeliness of the work order opening and closing processes an example listing of work orders within the EAMS system based on a monthly filter is included in Appendix F, Work Order Status Report EAMS Screen Shot Examples.

08. Inventory Management System

MDWASD's inventory management system provides a record of resources including parts, equipment, and facilities to support the field operations and maintenance activities that are conducted by the PSD.

08.01 Spare Part Locations

Workshops for each of the PSD's four sections are located at the Westwood Lakes, 36th Street, and South Miami Heights Maintenance Yards, and at the North District WWTP. The Westwood Lakes facility is strategically located near the center of all the service areas and is the facility recommended to house the pump station's SCADA monitoring and control center. The Westwood Lakes facility was built exclusively for pump station operations, but MDWASD now uses the workshop for other divisions and groups.

Pump station spare parts are stored in facilities in various locations through the four service areas so the parts are accessible quickly by the maintenance crews without extensive urban driving. There are a total of eight MDWASD Inventory Storerooms.

- Medley Yard Storeroom (7301 NW 70th Street, Miami, FL 33166),
- Hialeah Storeroom (1100 West 2nd Avenue, Hialeah, FL 33010),
- Alexander Orr Storeroom (6800 SW 87thy Avenue, Miami, FL 33173),
- Westwood Lakes Storeroom (4801 SW 117th Avenue, Miami, FL 33175),
- Water Transmission and Distribution Storeroom (1001 NW 11th Street, Miami, FL 33136),
- Virginia Key (Central District WWTP) Storeroom (3900 Rickenbacker Causeway, Key Biscayne, FL 33190),
- Interama (North District WWTP) Storeroom (2575 NE 156th Street, Miami, FL 33160), and
- Blackpoint (South District WWTP) Storeroom (8950 SW 232nd Street, Miami, FL 33190).

08.02 Critical Parts and Equipment Locations

Parts requiring continuous and immediate availability to support emergency repairs are defined as critical parts. The equipment required to successfully perform emergency repairs is defined as critical equipment. Examples of critical equipment include: pumps for bypass, hoses, generators, portable lights; small tools required to install critical parts; pump station system Asset Maps; etc. A list of spare parts and equipment indicated as “insurance items” is provided in Appendix G, Critical Spare Parts and Equipment List.

08.03 Inventory Management

Purchasing is centralized for stock items and decentralized for divisional purchases. An informal procurement process exists for equipment and repair services equaling $500,000 or less using multiple source quotations. For items above this amount, the solicitation has to be routed to the County Department of Procurement Management. Procurement Management reviews the solicitation process and the approval goes before the Board of County Commissioners. Emergency purchase orders can also be issued to override the normal, lengthy process when a documented emergency arises.

MDWASD’s Stores and Procurement Division uses EAMS to inventory and track stored parts for pump stations and to track location as well as inventory of specific items. The Stores and Procurement Division staff handle stock, storeroom management, and procurement of outside contracts for spare parts, materials, and services. The Stores and Procurement Division tracks inventory through the use of Division and Inventory Stores. Division (“D”) Stores were created for local tracking within a department. Tracking is determined by division and trade. Inventory (“I”) Stores manage inventory across departments and are not owned by any one department. EAMS allows for the tracking of stored parts for pump stations and track location as well as inventory of specific items. Items in the Stores and Procurement Division’s system identified as “Insurance Items” are parts and equipment that must be maintained at or above the minimum levels either due to availability or importance.

Primary spare parts inventories are maintained in the Stores and Procurement Division store rooms. As a best practice, MDWASD maintains local annual contracts to supply larger quantities of pump station-related parts and equipment.

Upon full implementation of program recommendations, spare parts will be checked out of the inventory using a bar coding system and the EAMS system tracks the transaction, the quantity in stock, and the location of the parts. Currently, the Stores and Procurement Division adjusts buying and stocking of inventory based on historical use tracked in the EAMS system. Restocking decisions are made on a max/min system. Stores and Procurement manages a list of County contracts of multiple manufacturers necessary to supply “Insurance Items” and other spare parts that are necessary to manage the WCTS. MDWASD is the largest user of these contracts for their system operations and maintenance. These contracts have caps and if exceeded approval is required from the Board of County Commissioners.

Four of the warehouse locations have vehicle maintenance facilities to service vehicles and equipment. The four vehicle maintenance facilities are at Westwood Lakes, Water Transmission and Distribution (11th Street), Virginia Key (Central District WWTP), and Blackpoint (South District WWTP).

08.04 Procedures for Updating List

During implementation, procedures for maintenance of an accurate inventory through the EAMS asset inventory will assist in ensuring the availability of critical spare parts for the pump stations. Should an unexpected need arise for a particular spare part or piece of equipment arise, MDWASD has contracts with virtually every manufacturer currently being used to ensure timely delivery of the needed item. If a manufacturer is not on the contract, they are added proactively so parts can be ordered in a timely manner.

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09. Staffing and Funding Plan

Since the 1996 Consent Order, PSD has fluctuated in staff levels tremendously through reorganizations and budget reductions. As shown on Table 09.1, these cuts have occurred even as the number of pump stations has increased, assets have continued to age, and experienced personnel have retired. During the FY 2014-2015 there were 195 budgeted positions in the PSD. As of the date of writing this document, 8 budgeted positions are vacant. In FY 1995-1996 there had been a PSD staff of 317 people managing 908 pump stations. Nearly twenty years later, the number of pump stations has increased by 139 to 1,047, but budgeted staff levels have shrunk from 317 to 195.

Table 09.1
PSD Pump Stations Compared to Fiscal Year PSD Budgeted / Contracted Staff Positions

Fiscal Year	MDWASD Owned Stations	MDWASD Maintained Stations	Total Number of Stations	Total PSD Personnel [2]
95/96	894	14	908	317
96/97	902	14	916	313
97/98	917	14	931	259
98/99	925	14	939	259
99/00	930	14	944	228
00/01	935	14	949	213
01/02	947	14	961	214
02/03	956	14	970	216
03/04	967	14	981	213
04/05	976	19	995	238
05/06	986	19	1,005	209
06/07	992	19	1,011	213
07/08	1,016	19	1,035	227
08/09	1,016	19	1,035	212
09/10	1,020	19	1,039	246
10/11	1,020	19	1,039	243
11/12	1,022	19	1,041	243
12/13	1,025	19	1,044	219
13/14	1,027	19	1,046	197
14/15	1,028	19	1,047	195

[1] Totals exclude two influent pump stations are operated by the Wastewater Treatment and Maintenance Division.

[2] Totals include temporary contract staff.

09.01 Staff and Skills Needs

The PSD continues to face challenges in recruiting qualified staff and providing the necessary training. The result of deficient staffing includes reduced maintenance, longer intervals between routine and preventative maintenance schedules, reduced task list, increased overtime, and increased likelihood of failure. A comprehensive training program for several facets of the maintenance program is needed to educate staff and provide incentive for them to grow within the organization. It has become increasingly difficult to recruit quality people mainly due to the fact that managers have to adhere to hiring protocols and job descriptions which can result in un-skilled labor entering the organization. Appendix H, Pump Station Division Job List, contains a listing of current PSD budgeted positions organized by trade.

PSOPMP implementation will include a staff hiring plan and equipment recommendations to allow PSD to operate at a higher level. Currently, the PSD does not have dedicated night time or weekend (i.e., second shift) maintenance crews. There are only day crews in each trade, structural, mechanical, and electrical, that operate during a single day shift. These same crews are on call for the night and weekend shifts, and are summoned by the Communications Center whenever an alarm event and/or an emergency arise. Not having second shift crews severely limits the PSD's ability to address issues timely in the evenings and on weekends putting MSWASD at risk for overflow situations.

The following draft staff hiring plan is based on staffing to a 24/7 basis within PSD. The draft staffing plan is also based on existing asset levels. Growth of the number of pump stations within the WCTS will require further analysis to determine potential additional staffing needs. The implementation recommendation includes a budgetary number for training that also needs to be further studied to get a more accurate picture of the program.

Table 09.2 recommends additional PSD staff augmentation to address existing staffing shortfalls associated with emergency operations.

Table 09.2
Recommended Staffing Additions Within the PSD

Program and Position	Abbreviated Description	Personnel [1]
WET WELL CLEANING		
Maintenance Repairer	These positions will allow for the observing and documenting of wet well conditions, including grease and debris accumulation. The hires will be required to operate vactor trucks used in wet well cleaning and may be required to perform confined space entry.	8 (2 persons per service area)
Maintenance Mechanic	These positions are required to pull submersible pumps, inspect condition and clean equipment in the wet well and return stations back to normal operating conditions	8 (2 persons per service area 4 utility body trucks with hoist and hatch 4 field use laptops)
ENGINEERING		
Engineer 2	To adequately address the need for professional electrical and mechanical expertise for maintenance, capital improvements and operational requirements at all PSD pump stations.	2 [1] (1 car and 2 laptop)
PUMP STATION OPERATIONS		
W&S Secretary	This position will serve a secretarial role for the Central East Service Area and Operations Control.	2
Assistant W&S Superintendent	This position will supervise the additional personnel needed for the 2nd shift, including diesel equipment maintenance, wet well cleaning/rehabilitation, and the Operations Control / SCADA monitoring.	1 (1 car and 1 laptop)
O&M Supervisor	These positions are for a night shift supervisor with weekend coverage responsibility, and will provide supervisory oversight for field crews on newly established 2nd and 3rd shifts.	3 (3 compact trucks and 3 laptops with EAMS access)
Plant Electrician	These positions are to provide the necessary level of staffing to increase pump station routine, preventative, and predictive maintenance that will bring staffing levels up to FY 1996/1997 levels.	9 (4 utility body trucks and 9 laptops)
Plant Electrician	These positions are to support the Electrical trade on the night shift, will provide 8 crews to perform electrical maintenance on pump station appurtenances, and will provide night coverage for newly established 2nd shift and weekend coverage. An additional 2 crews will be provided for the 3rd shift to allow for 24 hour, 7-day coverage.	24 (2nd shift – 4 per service area 12 utility body trucks and 12 laptops)
Plant Mechanic	These positions are to support the Mechanical trade on the night shift, and will provide 8 crews to improve response time to failures, thereby reducing the risk of spillage and protecting the public's health and welfare specifically at nights and on weekends. An additional	24 (2nd shift - 4 per service area 12 utility body trucks

Table 09.2
Recommended Staffing Additions Within the PSD

Program and Position	Abbreviated Description	Personnel [1]
	2 crews will be provided for the 3rd shift to allow for 24-hour, 7-day coverage.	with hoist and hitch)
Maintenance Mechanic	These positions are to provide the necessary level of staffing to increase pump station routine, preventative and predictive maintenance that will bring staffing levels up to FY 1996/1997 levels.	6 (3 utility body trucks and 6 laptops)
Maintenance Repairer	These positions are to provide the necessary level of staffing to increase pump station routine, preventative and predictive maintenance that will bring staffing levels up to FY 1996/1997 levels.	33 (22 utility body trucks)
SCADA AND INSTRUMENTATION SECTION		
O&M Supervisors	These positions are to manage the Operations Control / SCADA Monitoring that is not currently being performed by trained operators, but only monitored by untrained personnel in the Communications Center. These positions will cover a 2nd and 3rd shift that will allow for 24 hour, 7 day coverage.	6 (6 compact trucks and 6 laptops with EAMS access)
SCADA System Operators	These positions are to provide support to the Operations Control / SCADA Monitoring Shift Supervisor. These positions will cover a 2nd and 3rd shift that will allow for 24 hour, 7 day coverage.	6 (6 desktop computers with MS Suite)
Instrumentation Technician Supervisor	This position will provide a maintenance supervisor to manage the 8 Instrumentation Technicians who will maintain instrumentation and control appurtenances that provide signals to the SCADA system.	1
Instrumentation Technicians	These individuals will maintain pump station instrumentation and control equipment.	8 (4 light cargo vans and 4 field laptops with EAMS access)
DIESEL SECTION		
Plant Diesel Mechanic	These positions will provide 4 diesel mechanic crews to maintain the fixed diesel generators used as emergency backup power to over 70 wastewater pumping facilities.	8 (4 17,500 GVW trucks with utility body and 4 laptops)
EAMS Section		
Maintenance Planner Scheduler	These positions will establish and provide oversight and development of EAMS maintenance scheduling for routine, preventative, and predictive maintenance.	2 (1 per service area 2 desktop computers with EAMS access and MS Suite)
Asset Operation Technician	This position will provide data QA/QC including assistance overseeing the EAMS software for PSD, and the responsibility for management and	1 (1 desktop computer with EAMS access

Table 09.2
Recommended Staffing Additions Within the PSD

Program and Position	Abbreviated Description	Personnel [1]
	maintaining an accurate database of assets in the EAMS system.	and MS Suite)
SUBMERSIBLE REPAIR SHOP		
O&M Supervisor	The position will have supervisory oversight of the maintenance staff and management at two submersible pump repair shops. A new facility will need to be established for one of the proposed pump repair shops.	1 (1½ ton truck and 1 desktop computer with MS Suite)
Plant Mechanic	The position will provide two qualified mechanics to perform repairs to submersible pumps.	2 (1 desktop computer with EAMS access)
Maintenance Repairer	The position will provide adequate support and assistance to pump mechanics to perform repairs to submersible pumps.	3
MECHANICAL CAPITAL IMPROVEMENT		
O&M Supervisor	The position provides a mechanical supervisor that will provide oversight to maintenance staff and manage capital improvements to mechanical equipment.	1 (1½ ton truck and 1 desktop computer with MS Suite and 1 field laptop with EAMS access)
Plant Mechanic	The position will perform mechanical capital projects. Currently, this work is being performed by maintenance staff. Preventative maintenance work is being deferred, which is creating extensive backlog and putting pump station assets at risk for failure.	2 (1 17,500 GVW truck with utility body and 1 field laptop with EAMS access)
Maintenance Repairer	These positions will provide assistance to the Plant Mechanics performing mechanical capital work.	3
MECHANICAL PREVENTATIVE MAINTENANCE CREW		
Plant Mechanic	These positions will make up two crews that perform mechanical preventative maintenance at regional pump stations. Due to the size and amount of equipment at these stations, preventative maintenance takes 3 to 5 days to complete. This leads to preventative and corrective maintenance being deferred, which is creating backlog that increases the risk of failure of these critical pump station assets.	2 (2 17,500 GVW truck with utility body and 2 field laptop with EAMS access)
Maintenance Repairers	These positions will provide assistance to the Plant Mechanic performing mechanical preventative maintenance work.	2
STRUCTURAL MAINTENANCE SECTION		
Structural	Add two structural maintenance personnel.	2

Table 09.2
Recommended Staffing Additions Within the PSD

Program and Position	Abbreviated Description	Personnel [1]
Maintenance Worker		
	Proposed Additional PSD Staff	**170**

[1] The personnel column only includes MDWASD staff and associated equipment needs. The PS Technical Specification inventory and condition assessment activity is expected to require additional consultant or vendor resources.

In addition to the above implementation activities that require additional staff, there are several implementation activities that can be accomplished with existing PSD staff presuming the additional staff are available to free existing resources. These activities are included in Table 03.1 and include predictive maintenance (i.e., vibration analysis, thermal imaging, insulation resistance, and oil analysis); data management and integration analysis with IMS and SSAMS Programs; and communications analyses.

09.02 Training

The State of Florida does not require collection system operator certification. However, the Florida Water Pollution Control Operators Association (FWPCOA) does offer voluntary certification for both treatment plant and collection system operators. The PSD is promoting the requirement for all field and supervisory personnel to obtain a FWPCOA Wastewater Collection Technician Certification. The PSD also employs a number of trades that require State-recognized certifications (e.g., electricians).

The PSD is planning to institute a training program for PSD personnel to promote a higher training level, including certifications for selected job positions. PSD believes that having more highly trained staff will lead to greater productivity and professional growth, including the following components:

- Meet minimum training requirements for operations and maintenance personnel so as to meet 100 percent compliance with FWPCOA training guidelines (i.e., 5 hours every two years to meet certification requirements).

- Meet minimum training requirements for WCTS health and safety issues (e.g., confined space entry, waterborne pathogens, gas monitoring, lockout/tagout, etc.).
- Encourage meeting higher training levels for operations and maintenance personnel to meet other state mandatory certification requirements (i.e., North Carolina with 6 hours every year).
- Recommend more rigorous training for all trades in addition to the FWPCOA requirements.
- Recommend specialized electrical controls, variable frequency drives, and power training for electrical personnel.
- Involve cross-training of maintenance personnel to allow mechanical, electrical, and structural trades to understand each other's scope of work and to better work together to achieve common goals.

09.03 Funding Needs

Based on the PSOPMP implementation activities (as listed in Table 03.2), the identified staff required (as listed in Table 09.2), estimated equipment needed, and the identified consultant or vendor resources required (as footnoted in Table 09.2), Table 09.3 details the anticipated funding needs under the phased implementation for additional staffing. The funding shown in Table 09.2 does not include the funding requirements to perform existing PSD functions. The baseline of existing funding needs to stay the same as in the FY 2014-2015 budget. The anticipated budget needs shown in Table 09.3 is based on average salary budget found in Appendix H, Pump Stations Division Job List. The anticipated budget need details are included in Appendix I, Anticipated Budget Needs.

Table 09.3
Anticipated PSOPMP Phased Implementation Funding Required

Item	Description	Budget
MDWASD Staff	Additional 170 staff positions as detailed in Table 09.2.	$12,060,000 [1]
Training	Training allots budget for current and future staff	$910,000
Equipment	Additional 81 vehicles and 67 computers as detailed in Table 09.2 (includes O&M and PdM)	$4,298,000
Consultant / Vendor	Consultant / Vendor scope to be determined for implementation items.	$6,497,500
	ESTIMATED TOTAL	**$23,765,500** [2]

[1] Requested employees based on average salary budgets, which includes a 34% fringe rate.

[2] Preliminary capital and operating budget estimates are based average salaries, estimated training budgets, typical equipment costs, and preliminary vendor estimates that may vary depending on growth factors and implementation schedule. See detailed breakdown in Appendix I.

Under the County's budgeting system, costs must be defined in November in order to be included in the next fiscal year, which would start the following October 1.

10. Climate Change Impacts

In May 2014, the Miami-Dade County Board of County Commissioners passed a Resolution requiring that all County infrastructure projects "shall consider" the potential impacts of sea level rise and storm surge during all project phases (including planning, design, and construction) to ensure that these projects will function properly for fifty years or the design life of the project, whichever is greater. The County has also requested consideration of other climate change implications for County infrastructure projects.

This section addresses climate change impacts for the pump stations operated and maintained by PSD.

10.01 Pump Station Vulnerability to Climate Change

As the evaluation progresses with more specific recommendations for the pump station requirements each of the required CMOM Program shall take into consideration the vulnerability of the facilities to climate change impacts, such as sea level rise, storm surge, wind, and flooding, and the necessary improvements that can be made in pump station O&M protocols. For example, elevated groundwater levels from sea level rise and changes to infiltration are likely to increase pump operating times due to the expected increase in extraneous water entering the sewer system. This, and other climate changes, such as prolonged storms, will have impacts to the recommendations for the monitoring system and response protocols, technical specifications, preventative O&M schedules, and equipment inventories.

As a signatory to the South Florida Regional Climate Change Compact (SFRCCC), Miami-Dade joined other south Florida counties to develop a coordinated strategy for dealing with impacts of climate change. This includes a unified planning estimate for sea level rise projections. In 2012, the SFRCCC released the report, *Analysis of the Vulnerability of Southeast Florida to Sea Level Rise*, which contained planning time horizons and potential changes to sea level. This report predicted up to 3 feet of sea level rise by 2075. This report built on the SFRCCC recommendations previously related in the 2011 report, *A Unified Sea Level Rise Project for Southeast Florida*, where recommendations from the U.S. Army Corps of Engineers (USACE) were reviewed for projections to 2030 and 2060.

The impact of climate change on the pump stations serving the Miami-Dade service area vary depending on the geographic location of the specific station. In general, the pump stations will be exposed to three broad categories of climate manifestations and their associated components. First is the storm tide made up of the tidal cycle and the storm surge. Second is the role of hurricanes in South Florida was examined with the associated precipitation and winds. Third is the sea level rise and the associated impact on percolation and drainage, as well as overall flooding, as the ground level rises along with the sea level.

Table 10.1 presents the Saffir-Simpson Hurricane Wind Scale showing the types of damage and the anticipated power impacts associated with various hurricane categories.

Table 10.1
Saffir-Simpson Hurricane Wind Scale

Category	Sustained Winds	Types of Damage Due to Hurricane Winds	Anticipated Power Impacts
1	74 to 95 mph	Very dangerous winds will produce some damage	Extensive damage to power lines and poles likely will result in power outages that could last a few to several days.
2	96 to 110 mph	Extremely dangerous winds will cause extensive damage	Near-total power loss is expected with outages that could last from several days to weeks.
3 (major)	111 to 129 mph	Devastating damage will occur	Electricity and water will be unavailable for several days to weeks after the storm passes.
4 (major)	130 to 156 mph	Catastrophic damage will occur	Power outages will last weeks to possibly months. Most of the area will be uninhabitable for weeks or months.
5 (major)	157 mph or higher	Catastrophic damage will occur	Power outages will last for weeks to possibly months. Most of the area will be uninhabitable for weeks or months.

Source: http://www.nhc.noaa.gov/aboutsshws.php.

The framework for developing a pump station plan focused primarily on two factors:

- Asset life versus planning horizon and

- Pertinent industry design guidance documents.

Asset Life Versus Planning Horizon. Asset improvements or new assets at the pump stations can be broadly categorized into three components: structural, electrical, and mechanical. As shown in Figure 10.1, each has a different service life that ought to be considered when making decisions for resiliency adaptations. Routine O&M also present an opportunity to introduce additional adaptations.

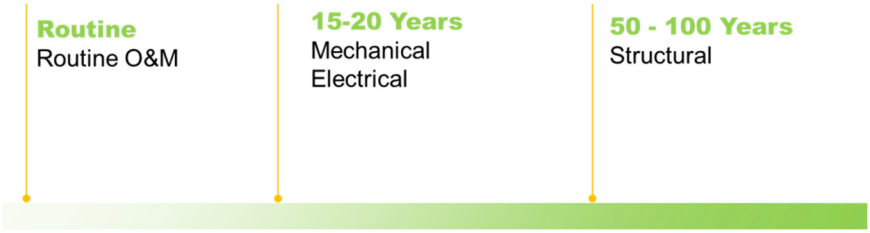

Figure 10.1
Pump Station Generic Service Life Schematic

The recommendation is that the climate resiliency feature be incorporated into the pump station upgrade and replacement design processes based on asset life. Specifically, the adaptation solution ought to coincide with the climate planning horizon that aligns with the asset life. For example, if the upgrade includes mechanical assets with a service life of 15 years, the corresponding time adaption feature would be determined during the basis of design report (BODR) process. Thus, the guidance takes the service life and the planning horizon as the framework; the specific action is to be determined during the BODR process when the project design is considered in totality. Table 10.2 outlines the guidance for planning horizons based on asset categories.

Table 10.2
Recommended Planning Horizon Based On Asset Life

Asset	Asset Life	Pump Station Replacement	Pump Station Rehabilitation
Structural	50 to 100 years	Target 2075	Comprehensive Structural Assessment in Basis of Design Report
Mechanical	15 years	2030	2030
Electrical and Controls	15 years	2030	2030

Pertinent Industry Design Guidance Documents. A pertinent guidance document is the American Society for Civil Engineers Standard (ASCE 24-05) Flood Resistant Design and Construction, which issues guidance for types of structures and lowest floor elevations. ASCE recommendations already incorporate storm surge estimates into their flood calculations. For the Category IV structures, which include public utilities, ASCE recommends that the Design Flood Elevation (DFE) is the 2 feet over the Base Flood Elevation (BFE).

11. Appendices

Appendix A: Pump Station Route Flow Schematic by Treatment Plant Service Area

Appendix B: EAMS Pump Station Database

Appendix C: Routine and Preventative Maintenance Task Lists for the Trades

Appendix D: Pump Station Meter Inventory

Appendix E: SCADA Maintenance Task List

Appendix F: Work Order Status Report EAMS Screen Shot Examples

Appendix G: Critical Spare Parts and Equipment List

Appendix H: Pump Station Division Job List

Appendix I: Anticipated Budget Needs

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APPENDIX A

Pump Station Route Flow Schematic by Treatment Plant Service Area

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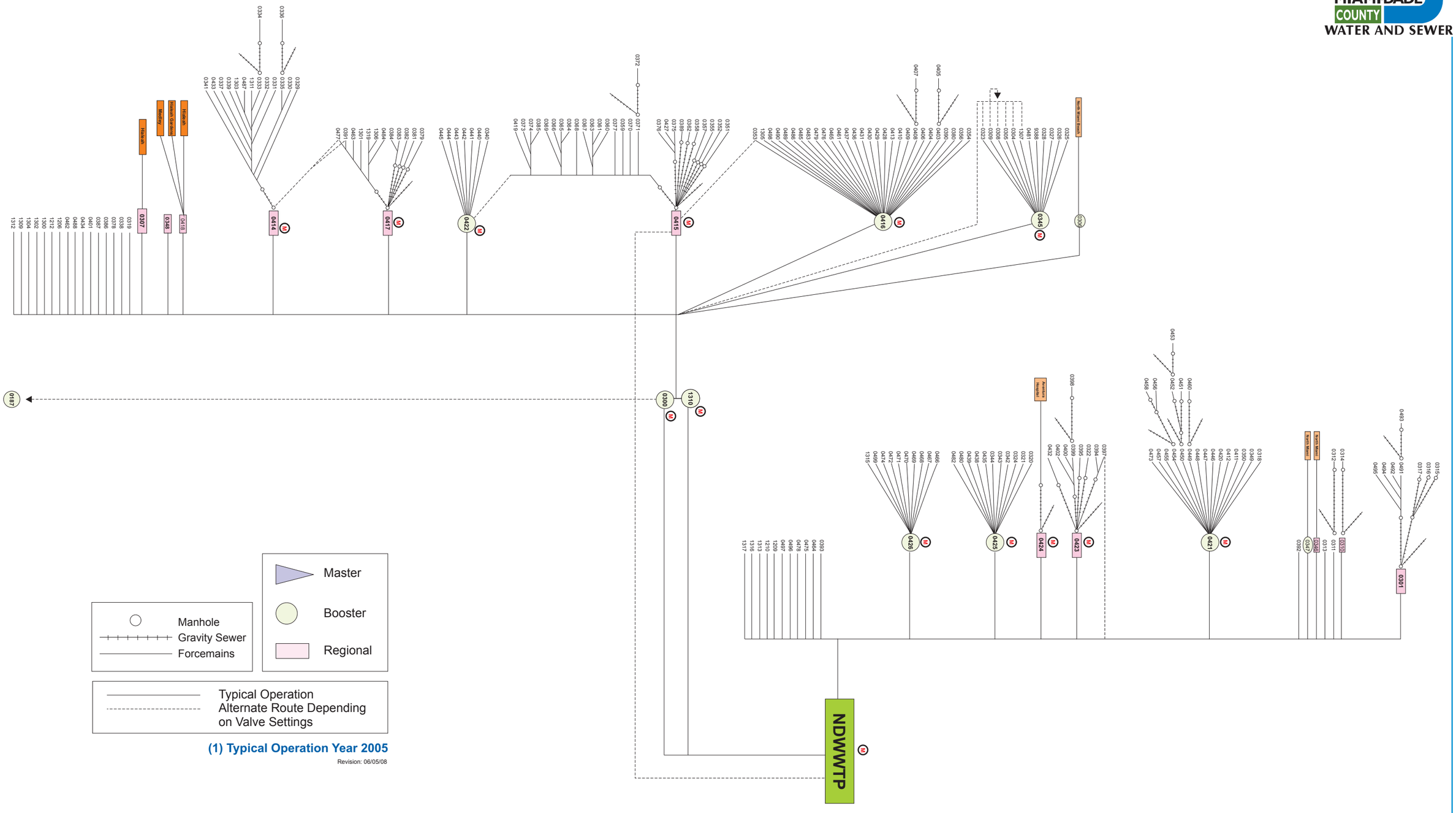

(1) Typical Operation Year 2005

Revision: 06/05/08

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Figure A-1
Miami-Dade North District NDWWTP Pump Station Flow Path[(1)]

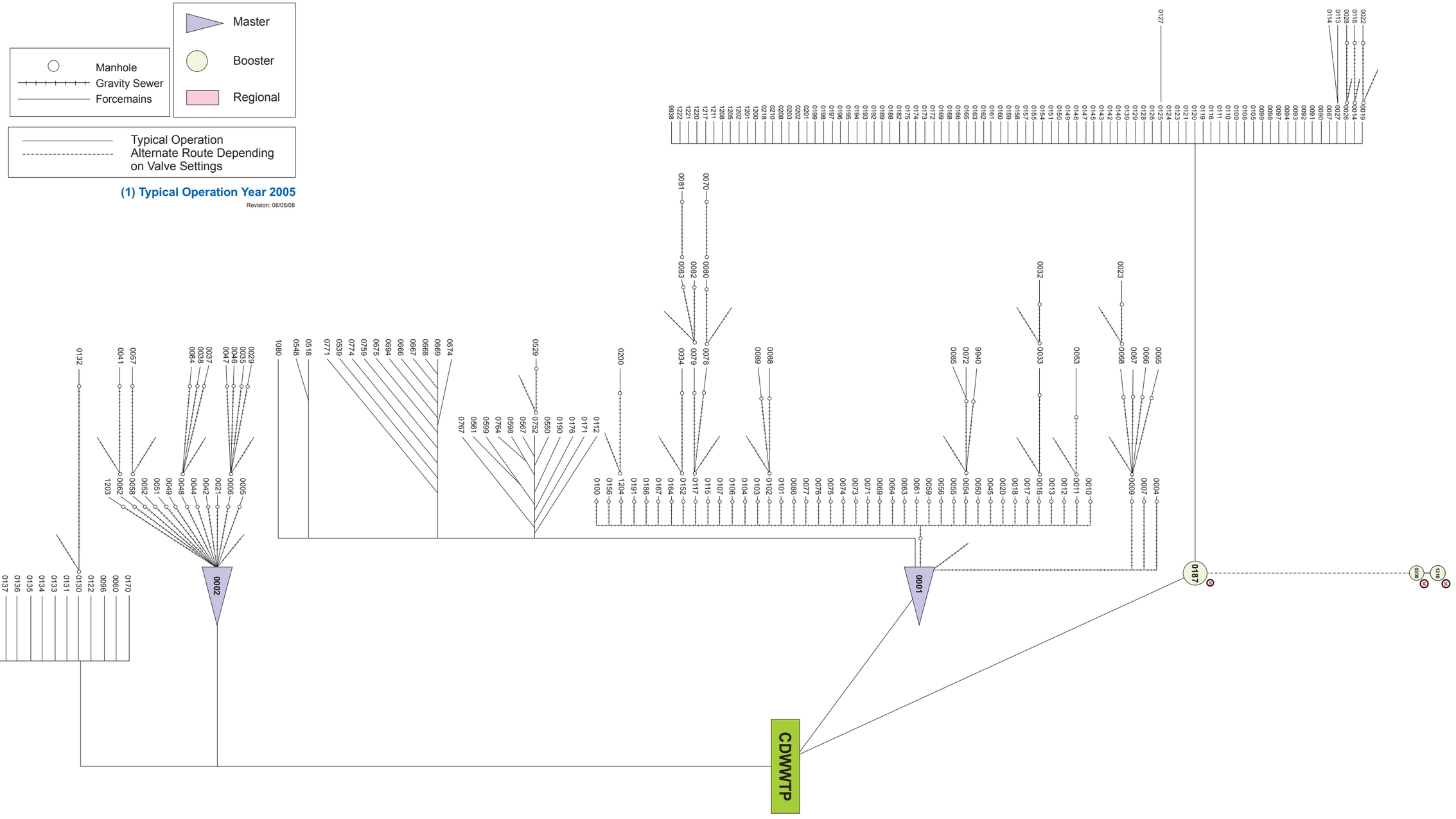
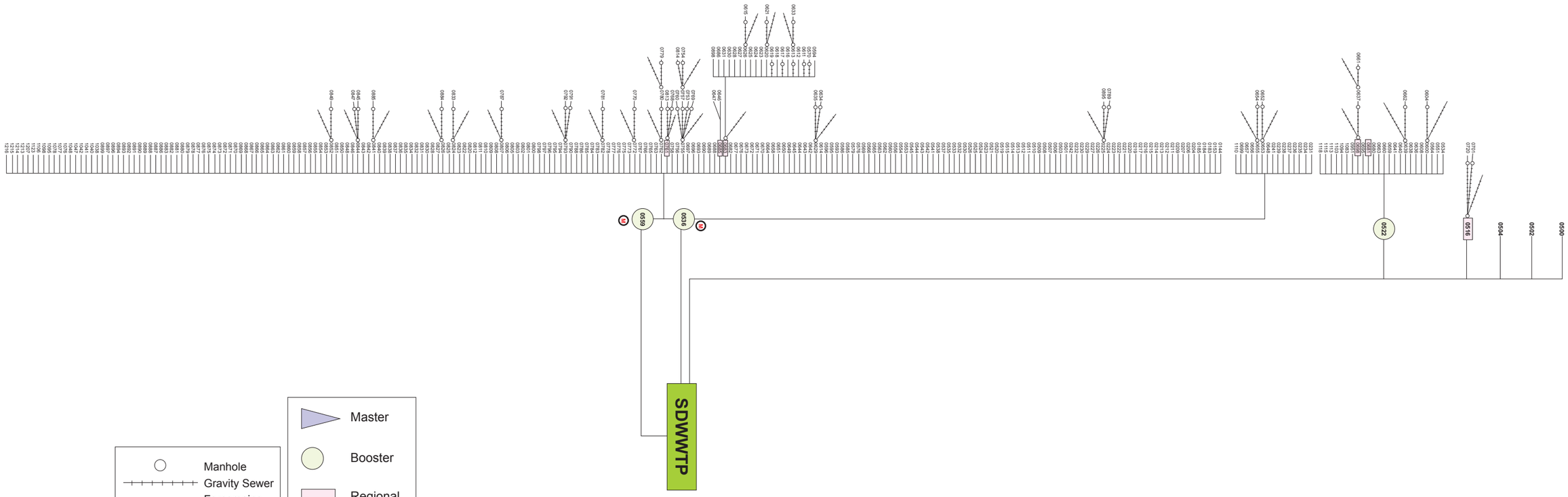
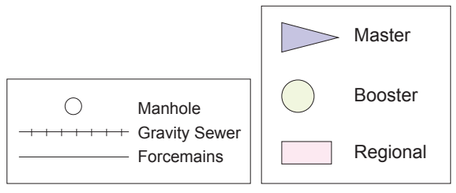


Figure A-2
Miami-Dade North District CDWWTP Pump Station Flow Path[(1)]





(1) Typical Operation Year 2005

Revision: 06/05/08

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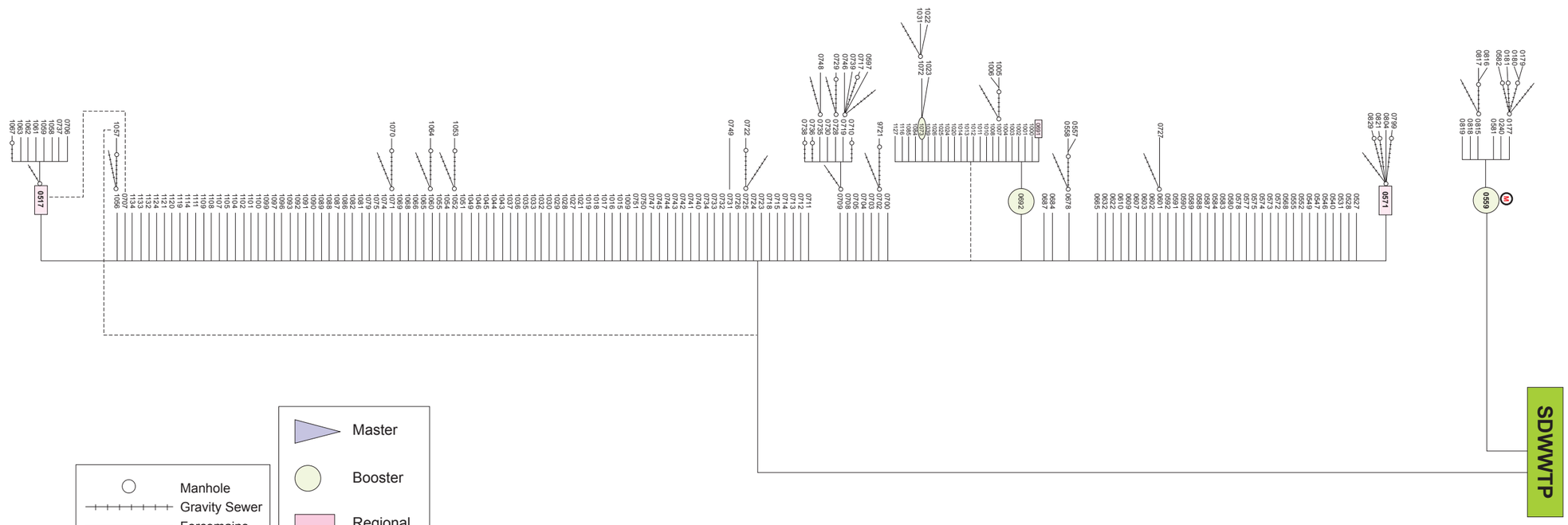
Figure A-3
Miami-Dade South District SDWWTP Pump Station Flow Path[(1)]



(1) Typical Operation Year 2005

Revision: 06/05/08

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Figure A-4
Miami-Dade South District SDWWTP Pump Station Flow Path[1]

APPENDIX B

EAMS Pump Station Database

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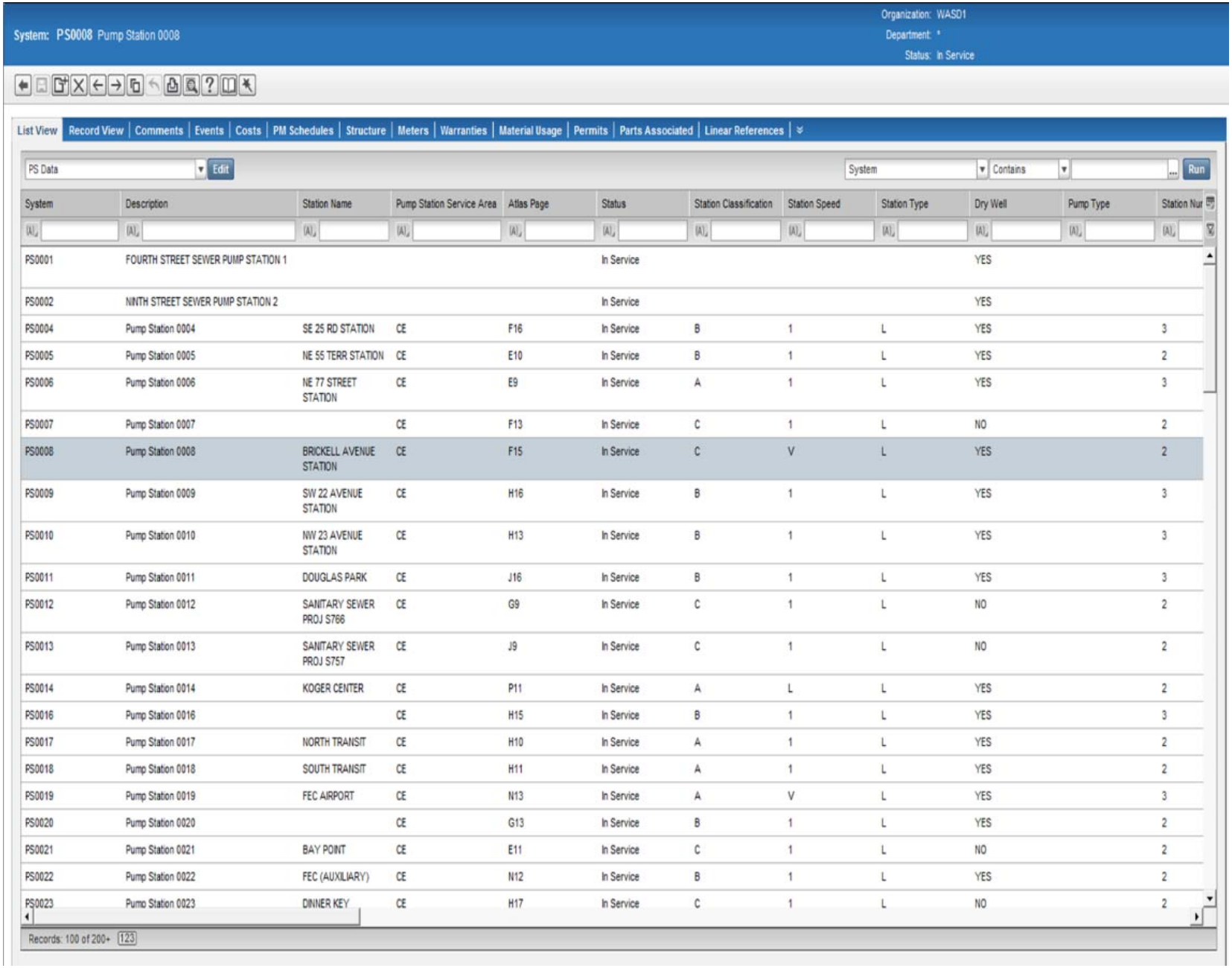


System: PS0008 Pump Station 0008

Organization: WASD1
Department: *
Status: In Service

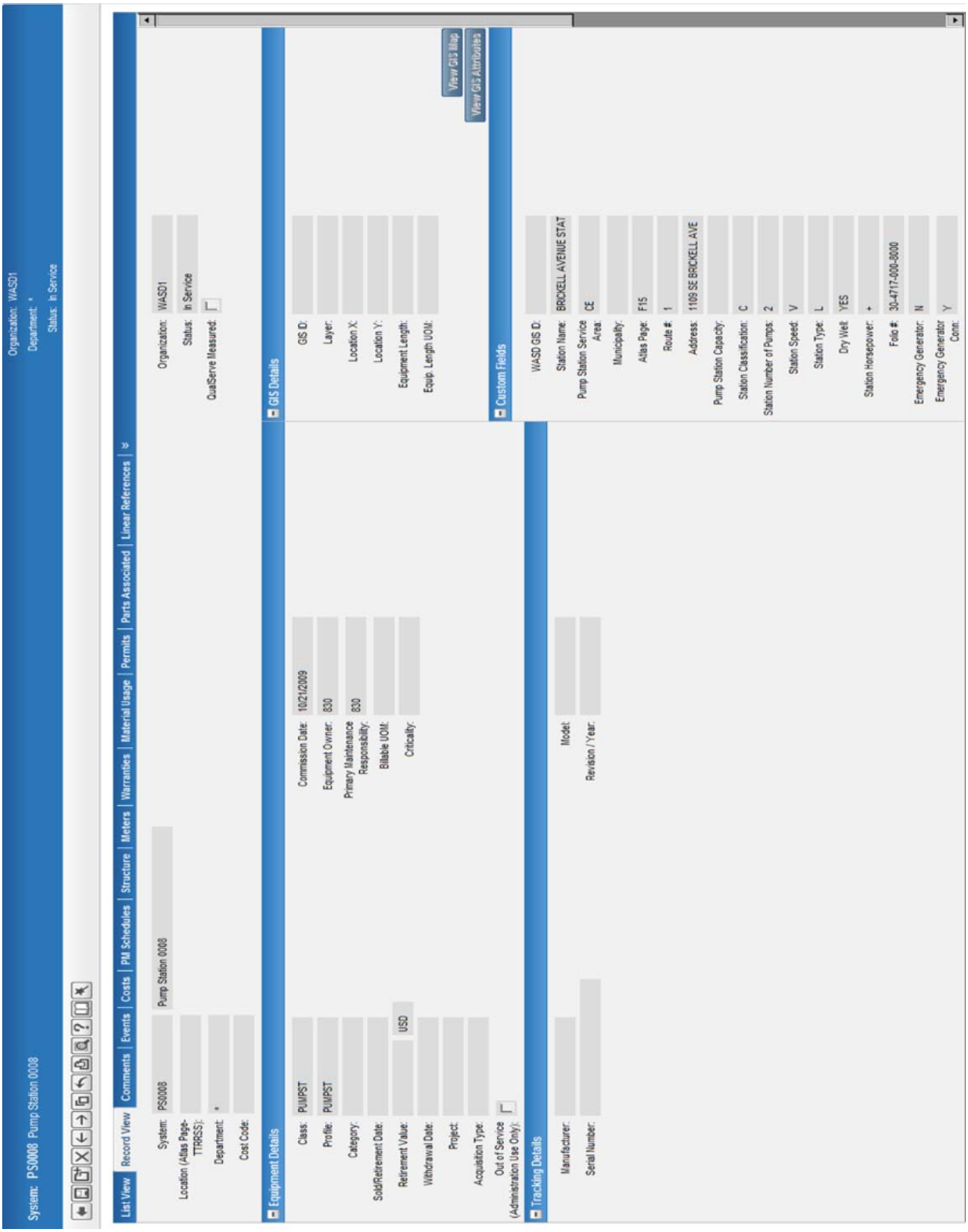
List View | Record View | Comments | Events | Costs | PM Schedules | Structure | Meters | Warranties | Material Usage | Permits | Parts Associated | Linear References

PS Data | Edit | System | Contains | Run

System	Description	Station Name	Pump Station Service Area	Atlas Page	Status	Station Classification	Station Speed	Station Type	Dry Well	Pump Type	Station Nur
PS0001	FOURTH STREET SEWER PUMP STATION 1				In Service				YES		
PS0002	NINTH STREET SEWER PUMP STATION 2				In Service				YES		
PS0004	Pump Station 0004	SE 25 RD STATION	CE	F16	In Service	B	1	L	YES		3
PS0005	Pump Station 0005	NE 55 TERR STATION	CE	E10	In Service	B	1	L	YES		2
PS0006	Pump Station 0006	NE 77 STREET STATION	CE	E9	In Service	A	1	L	YES		3
PS0007	Pump Station 0007		CE	F13	In Service	C	1	L	NO		2
PS0008	Pump Station 0008	BRICKELL AVENUE STATION	CE	F15	In Service	C	V	L	YES		2
PS0009	Pump Station 0009	SW 22 AVENUE STATION	CE	H16	In Service	B	1	L	YES		3
PS0010	Pump Station 0010	NW 23 AVENUE STATION	CE	H13	In Service	B	1	L	YES		3
PS0011	Pump Station 0011	DOUGLAS PARK	CE	J16	In Service	B	1	L	YES		3
PS0012	Pump Station 0012	SANITARY SEWER PROJ S766	CE	G9	In Service	C	1	L	NO		2
PS0013	Pump Station 0013	SANITARY SEWER PROJ S757	CE	J9	In Service	C	1	L	NO		2
PS0014	Pump Station 0014	KOGER CENTER	CE	P11	In Service	A	L	L	YES		2
PS0016	Pump Station 0016		CE	H15	In Service	B	1	L	YES		3
PS0017	Pump Station 0017	NORTH TRANSIT	CE	H10	In Service	A	1	L	YES		2
PS0018	Pump Station 0018	SOUTH TRANSIT	CE	H11	In Service	A	1	L	YES		2
PS0019	Pump Station 0019	FEC AIRPORT	CE	N13	In Service	A	V	L	YES		3
PS0020	Pump Station 0020		CE	G13	In Service	B	1	L	YES		2
PS0021	Pump Station 0021	BAY POINT	CE	E11	In Service	C	1	L	NO		2
PS0022	Pump Station 0022	FEC (AUXILIARY)	CE	N12	In Service	B	1	L	YES		2
PS0023	Pump Station 0023	DINNER KEY	CE	H17	In Service	C	1	L	NO		2

Records: 100 of 200+ 123

PS Record View (Available Data Fields):



PS Record View (cont.):

Pump Data (following link in PS Hierarchy):

APPENDIX C

Routine and Preventative Maintenance Task Lists for the Trades

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Appendix C Table of Contents:

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Electrical Preventative Maintenance

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SEWER PUMP STATION MAINTENANCE DIVISION
PREVENTIVE MAINTENANCE FORM
ELECTRICAL

STATION #:_____ SUPERVISOR REVIEW:_____

PM DATE:_____ W.O.#:_____

INSPECTION PERFORMED BY: (Please list employee name and social security #)

Name: _____ SS#: _____

Name: _____ SS#: _____

==========

CONDITION CODES

1. GOOD
2. FAIR
3. BAD
4. YES
5. NO
6. NOISY
7. EXCESSIVE VIBRATION
8. NEEDS REPLACING
9. REPLACED
10. REPAIRED
11. CLEANED
12. CUT / DRESSED
13. LUBRICATED
14. TIGHTENED
15. OUT OF SERVICE
16. SEE REMARKS
17. N/A (NON APPLICABLE)

==========

SERVICE EQUIPMENT
(SEE CONDITION CODES)

RISER	_____	METER /CAN	_____	MAIN DISCONNECT	_____
LIGHTING ARRESTOR	_____	GROUND	_____	GENERATOR RECEPTACLE	_____
SURGE ARRESTOR	_____	SURGE CAPACITORS	_____	P.F. CAPACITORS	_____

INCOMING LINE MAIN BREAKER #1 _____ DIAELECTRIC STRENGTH L1_____ L2_____ L3_____

INCOMING LINE MAIN BREAKER #2 _____ DIAELECTRIC STRENGTH L1_____ L2_____ L3_____

INCOMING LINE MAIN TIE BREAKER #1 _____ DIAELECTRIC STRENGTH L1_____ L2_____ L3_____

INCOMING LINE MAIN TIE BREAKER #2 _____ DIAELECTRIC STRENGTH L1_____ L2_____ L3_____

GENERATOR BREAKER #1 _____ DIAELECTRIC STRENGTH L1_____ L2_____ L3_____

GENERATOR BREAKER #2 _____ DIAELECTRIC STRENGTH L1_____ L2_____ L3_____

GENERATOR BREAKER #3 _____ DIAELECTRIC STRENGTH L1_____ L2_____ L3_____

SUBSTATION FEEDER BREAKER #1 _____ DIAELECTRIC STRENGTH L1_____
L2_____
L3_____

SUBSTATION FEEDER BREAKER #2 _____ DIAELECTRIC STRENGTH L1_____
L2_____
L3_____

SPARE BREAKER _____ DIAELECTRIC STRENGTH L1_____
L2_____
L3_____

SYNCHRONIZING PANEL _____ PROTECTIVE RELAYS _____ CALIBRATION DATE_____

SUBSTATION TRANSFORMER #1 TEMP_____ OIL LEVEL_____ PRESSURE_____MEGOHMS L1_____
L2_____
L3_____

SUBSTATION TRANSFORMER #2 TEMP_____ OIL LEVEL_____ PRESSURE_____MEGOHMS L1_____
L2_____
L3_____

CONTROL PANEL
(SEE CONDITION CODES)

MAIN MOTOR STARTER	HIGH	#1_____	#2_____	#3_____	#4_____	#5_____
	LOW	#1_____	#2_____	#3_____	#4_____	#5_____
	START	#1_____	#2_____	#3_____	#4_____	#5_____
	RUN	#1_____	#2_____	#3_____	#4_____	#5_____
MAIN STARTER CONTACTS	HIGH	#1_____	#2_____	#3_____	#4_____	#5_____
	LOW	#1_____	#2_____	#3_____	#4_____	#5_____
	START	#1_____	#2_____	#3_____	#4_____	#5_____
	RUN	#1_____	#2_____	#3_____	#4_____	#5_____
AUTO TRANSFORMER /REACTOR		#1_____	#2_____	#3_____	#4_____	#5_____
OVERLOAD RESETS		#1_____	#2_____	#3_____	#4_____	#5_____
MAIN MOTOR BREAKER		#1_____	#2_____	#3_____	#4_____	#5_____
BREAKER OPERATORS		#1_____	#2_____	#3_____	#4_____	#5_____
FREQUENCY DRIVE		#1_____	#2_____	#3_____	#4_____	#5_____
SEAL WATER STARTER / CONTACTOR		#1_____	#2_____			

ALTERNATOR	_____	_____	RELAYS/TIME DELAYS	_____	_____	PHASE MONITOR	_____ _____
INDICATING LIGHTS	_____	_____	PARAMETERS/LEVELS	_____	_____	CONTROL PRINTS	_____ _____
SONAR / BUBBLER SYSTEM	_____	_____	AIR PUMP / COMPRESSOR	_____	_____	ET METERS	_____ _____
TRANSFORMERS	_____	_____	P.F. CAPACITORS	_____	_____	PLC	_____ _____
CORROSION INHIBITOR INSTALLED	_____	_____	SURGE ARRESTORS	_____	_____	SUB PANEL	_____ _____
MOTOR CONTROL CENTER #1	_____	_____	LIGHTING ARRESTORS	_____	_____	WIRING	_____ _____
MOTOR CONTROL CENTER #2	_____	_____	SURGE CAPACITORS	_____	_____	CLEANED	_____ _____

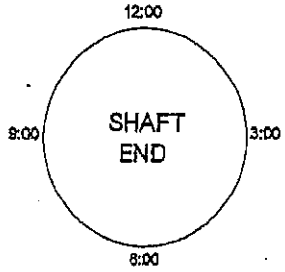
MOTORS
(SEE CONDITION CODES)

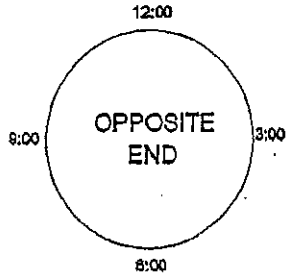
MOTOR	CONNECTIONS	#1	#2	#3	#4	#5
	CONDITION	#1	#2	#3	#4	#5
STATOR INSULATION (MEGOHMS)		#1L1	#2L1	#3L1	#4L1	#5L1
		#1L2	#2L2	#3L2	#4L2	#5L2
		#1L3	#2L3	#3L3	#4L3	#5L3
STATOR	AMPS	#1L1	#2L1	#3L1	#4L1	#5L1
		#1L2	#2L2	#3L2	#4L2	#5L2
		#1L3	#2L3	#3L3	#4L3	#5L3
	VOLTS	#1L1	#2L1	#3L1	#4L1	#5L1
		#1L2	#2L2	#3L2	#4L2	#5L2
		#1L3	#2L3	#3L3	#4L3	#5L3
WINDING TEMPERATURES		#1RTD1	#2RTD1	#3RTD1	#4RTD1	#5RTD1
		#1RTD2	#2RTD2	#3RTD2	#4RTD2	#5RTD2
CENTIGRADE ____		#1RTD3	#2RTD3	#3RTD3	#4RTD3	#5RTD3
FAHRENHEIT ____		#1RTD4	#2RTD4	#3RTD4	#4RTD4	#5RTD4
		#1RTD5	#2RTD5	#3RTD5	#4RTD5	#5RTD5
		#1RTD6	#2RTD6	#3RTD6	#4RTD6	#5RTD6
		#1RTD7	#2RTD7	#3RTD7	#4RTD7	#5RTD7
		#1RTD8	#2RTD8	#3RTD8	#4RTD8	#5RTD8
		#1RTD9	#2RTD9	#3RTD9	#4RTD9	#5RTD9
		#1RTD10	#2RTD10	#3RTD10	#4RTD10	#5RTD10
ROTOR	CONDITION	#1	#2	#3	#4	#5
	MEGOHMS	#1R1	#2R1	#3R1	#4R1	#5R1
		#1R2	#2R2	#3R2	#4R2	#5R2
		#1R3	#2R3	#3R3	#4R3	#5R3
	AMPS	#1R1	#2R1	#3R1	#4R1	#5R1
		#1R2	#2R2	#3R2	#4R2	#5R2
		#1R3	#2R3	#3R3	#4R3	#5R3
	VOLTS	#1R1	#2R1	#3R1	#4R1	#5R1
		#1R2	#2R2	#3R2	#4R2	#5R2
		#1R3	#2R3	#3R3	#4R3	#5R3
SLIP RING CONDITION		#1	#2	#3	#4	#5
BRUSH CONDITION		#1	#2	#3	#4	#5
MOTOR FILTERS		#1	#2	#3	#4	#5
DRIVE / CLUTCH		#1	#2	#3	#4	#5
BYPASS RESISTOR GRID (BOOSTERS ONLY)		#1	#2	#3	#4	#5
RECIRCULATING OR SEAL WATER MOTOR		#1	#2			

ALL MOTORS NUMBERED & LABELED_____ TIGHTENED ALL CONNECTIONS_____

VIBRATION, TEMPERATURE & LUBRICATION CHECK

HORIZONTAL _____ VERTICAL _____
(Check One)





MOTOR #1

	VIBRATION	BEARING LUBRICATION	TEMP
12:00	_____		_____
3:00	_____	OIL _____	
6:00	_____	GREASE _____	
9:00	_____	SEALED _____	

MOTOR #1

	VIBRATION	BEARING LUBRICATION	TEMP
12:00	_____		_____
3:00	_____	OIL _____	
6:00	_____	GREASE _____	
9:00	_____	SEALED _____	

MOTOR #2

	VIBRATION	BEARING LUBRICATION	TEMP
12:00	_____		_____
3:00	_____	OIL _____	
6:00	_____	GREASE _____	
9:00	_____	SEALED _____	

MOTOR #2

	VIBRATION	BEARING LUBRICATION	TEMP
12:00	_____		_____
3:00	_____	OIL _____	
6:00	_____	GREASE _____	
9:00	_____	SEALED _____	

MOTOR #3

	VIBRATION	BEARING LUBRICATION	TEMP
12:00	_____		_____
3:00	_____	OIL _____	
6:00	_____	GREASE _____	
9:00	_____	SEALED _____	

MOTOR #3

	VIBRATION	BEARING LUBRICATION	TEMP
12:00	_____		_____
3:00	_____	OIL _____	
6:00	_____	GREASE _____	
9:00	_____	SEALED _____	

MOTOR #4

	VIBRATION	BEARING LUBRICATION	TEMP
12:00	_____		_____
3:00	_____	OIL _____	
6:00	_____	GREASE _____	
9:00	_____	SEALED _____	

MOTOR #4

	VIBRATION	BEARING LUBRICATION	TEMP
12:00	_____		_____
3:00	_____	OIL _____	
6:00	_____	GREASE _____	
9:00	_____	SEALED _____	

MOTOR #5

	VIBRATION	BEARING LUBRICATION	TEMP
12:00	_____		_____
3:00	_____	OIL _____	
6:00	_____	GREASE _____	
9:00	_____	SEALED _____	

MOTOR #5

	VIBRATION	BEARING LUBRICATION	TEMP
12:00	_____		_____
3:00	_____	OIL _____	
6:00	_____	GREASE _____	
9:00	_____	SEALED _____	

REMARKS: _____

GENERATOR
(SEE CONDITION CODES)

HOURS IN		#1_____	#2_____	#3_____
HOURS OUT		#1_____	#2_____	#3_____
UNDERLOAD	VOLTS	#1L1_____	#2L1_____	#3L1_____
		#1L2_____	#2L2_____	#3L2_____
		#1L3_____	#2L3_____	#3L3_____
	AMPS	#1L1_____	#2L1_____	#3L1_____
		#1L2_____	#2L2_____	#3L2_____
		#1L3_____	#2L3_____	#3L3_____
RADIATOR MOTOR	MEGOHMS	#1_____	#2_____	#3_____
	VOLTS	#1L1_____	#2L1_____	#3L1_____
		#1L2_____	#2L2_____	#3L2_____
		#1L3_____	#2L3_____	#3L3_____
	AMPS	#1L1_____	#2L1_____	#3L1_____
		#1L2_____	#2L2_____	#3L2_____
		#1L3_____	#2L3_____	#3L3_____

WINDINGS	____	CONNECTIONS	____	METERS & GAUGES	____
RELAYS, TIMERS, SWITCHES	____	INDICATING LIGHTS	____	ENGINE HEATER	____
RACEWAY & J.BOX	____	TIGHTENED CONNECTIONS	____	BREAKER	____
DAY TANK MOTOR & CONTROLS	____	CLEAN CABINET	____	WIRING	____
EXCITER	____	EXCITER OUTPUT_____VOLTS		PRINTS	____

AIR START SYSTEM (BOOSTERS ONLY)
(SEE CONDITION CODES)

COMPRESSOR MOTORS	MEGOHMS	#1L1_____	#1L2_____	#1L3_____
		#2L1_____	#2L2_____	#2L3_____
	VOLTS	#1L1_____	#1L2_____	#1L3_____
		#2L1_____	#2L2_____	#2L3_____
	AMPS	#1L1_____	#1L2_____	#1L3_____
		#2L1_____	#2L2_____	#2L3_____

STARTERS #1_____ #2_____ CONTACTS #1_____ #2_____

DRAIN TANK_____ CONTROLS_____ BELTS_____ COMPRESSOR OIL_____ OVERALL CONDITION_____

BATTERIES & BATTERY CHARGERS
(SEE CONDITION CODES)

BANK A: NICKEL CADMIUM_____ LEAD ACID_____ BANK B: NICKEL CADMIUM_____ LEAD ACID_____

BATTERY BANK A:	CONDITION____	SPECIFIC GRAVITY TEST____	TERMINALS____	WATER ADDED____
BATTERY BANK B:	CONDITION____	SPECIFIC GRAVITY TEST____	TERMINALS____	WATER ADDED____

			?FLOAT?	?HIGH RATE?		?FLOAT?	?HIGH RATE?
CHARGER A:	CONDITION____	VOLTS	_____	_____	AMPS	_____	_____
CHARGER B:	CONDITION____	VOLTS	_____	_____	AMPS	_____	_____

TRANSFER SWITCH
(SEE CONDITION CODES)

MAIN BREAKER	____	EMERGENCY BREAKER	____	TRANSFER MOTOR	____
METERS	____	EXERCISE TIMER	____	TIME DELAYS/RELAYS	____
SWITCHES	____	INDICATING LIGHTS	____	PRINTS	____
OVERALL CONDITION	____	TEST PROCEDURE POSTED & UPDATED	____		

HYDROPNEUMATIC SYSTEM (BOOSTERS ONLY)
(SEE CONDITION CODES)

COMPRESSOR MOTORS	MEGOHMS	#1L1_____	#1L2_____	#1L3_____
		#2L1_____	#2L2_____	#2L3_____
	VOLTS	#1L1_____	#1L2_____	#1L3_____
		#2L1_____	#2L2_____	#2L3_____
	AMPS	#1L1_____	#1L2_____	#1L3_____
		#2L1_____	#2L2_____	#2L3_____

STARTERS #1_____ #2_____ CONTACTS #1_____ #2_____

WATER PUMP MOTOR	MEGOHMS	#1L1_____	#1L2_____	#1L3_____
		#2L1_____	#2L2_____	#2L3_____
	VOLTS	#1L1_____	#1L2_____	#1L3_____
		#2L1_____	#2L2_____	#2L3_____
	AMPS	#1L1_____	#1L2_____	#1L3_____
		#2L1_____	#2L2_____	#2L3_____

STARTERS #1_____ #2_____ CONTACTS #1_____ #2_____

CONE VALVES_____ CONTROLS_____ BELTS_____ COMPRESSOR OIL_____ OVERALL CONDITION_____

ODOR CONTROL SYSTEM
(SEE CONDITION CODES)

COMPRESSOR MOTOR	MEGOHMS	L1_____	L2_____	L3_____
	VOLTS	L1_____	L2_____	L3_____
	AMPS	L1_____	L2_____	L3_____
BLOWER MOTOR	MEGOHMS	L1_____	L2_____	L3_____
	VOLTS	L1_____	L2_____	L3_____
	AMPS	L1_____	L2_____	L3_____

FAN BLADE_____ CONTROLS_____ BELTS_____ COMPRESSOR OIL_____ OVERALL CONDITION_____

GENERAL
(SEE CONDITION CODES)

TIGHTEN ALL CONNECTIONS	____			WET WELL BLOWER	____			DRY WELL BLOWER	____
SUMP PUMP CONTROL	____			LIGHTING	____			ALARM LIGHT / BUZZER	____
RACEWAYS, J.BOXES, DEVICES	____			TEST ALL ALARMS	____			FIRE ALARM	____
GAS DETECTION SYSTEM	____			A/C VENTILATION SYSTEM	____			PRINTS	____
OVERHEAD CRANE:	RAIL	____	HOIST	____	CABLE	____	TRACK	____	CONTROLS ____

OVERALL CONDITION OF STATION (CLEAN, DIRTY, ETC...PLEASE DESCRIBE)_____

SAFETY CONDITIONS:_____

REMARKS:_____

Mechanical Preventative Maintenance

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PUMP STATION MECHANICAL
PREVENTIVE MAINTENANCE
INSPECTION FORM # 2

W/O# _____ STATION #: _____
DATE: _____

MAIN PUMP INFORMATION

PUMP #	MANUFACTURE		MODEL	PUMP SIZE	IMPELLER SIZE OR CODE	MOTOR RPM	PUMP RPM	ROTATION
#1								
#2								
#3								
#4								
#5								

PUMP #	IMPELLER CLEARENCE		SHAFT END PLAY	DISCHARGE PRESS BEFORE PM		DISCHARGE PRESSURE AFTER PM		FORCE MAIN PRESSURE
	BEFORE PM	AFTER PM		VO	VC	VO	VC	
#1								
#2								
#3								
#4								
#5								

PUMP #	PUMP DOWN TIME	1"FILL TIME (1st)		1"FILL TIME (2nd)	
		VALVE OPEN	VALVE CLOSE	VALVE OPEN	VALVE CLOSE
#1					
#2					
#3					
#4					
#5					

PUMP #	E.T. READING		COMBO E.T.
	HIGH	LOW	
#1			
#2			
#3			
#4			
#5			

COMMENTS

_____
_____
_____
_____
_____
_____

INFORMATION VERIFIED AS CORRECT

SEAL WATER PUMPS	DISCHARGE PRESSURE	AIR COMP PRESSURE	
		ON	OFF
#1			
#2			

_____
MECHANIC SIGNATURE

_____
SUPERVISOR SIGNATURE

PUMP STATION MAINTENANCE DIVISION
STATION INFORMATION FORM
PREVENTIVE MAINTENANCE

STATION # _____

DATE _____

W/O# _____

Pump Down Test

Pump Down Test

Pump 1	Pump 2	Pump 3	Pump 4	Pump 5
Min: Sec	Min: Sec	Min: Sec	Min: Sec	Min: Sec

Fill Up Test

Low Flow

Circle

	1st	2nd
Valves Open		
Valves Closed		

Pressure Test

Static _____ PSI

	Pump 1	Pump 2	Pump 3	Pump 4	Pump 5
Operating					
Cut off					

Remarks:

PUMP STATION MAINTENANCE DIVISION
PREVENTIVE MAINTENANCE
INSPECTION FORM # 1

STATION # _____

W/O# _____ DATE _____

MECHANIC _____

ASSISTANT _____ PAGE 1 OF 2

MAIN PUMPS

	ISSUED	WORK COMPLETED Y	WORK COMPLETED N	COMP DATE
PULL PUMPS, CLEAN AND INSPECT IMPELLERS AND SUCTION PLATE				
REPACK PUMPS-INSPECT SLEEVES AND REPLACE AS NEEDED				
CHECK PUMP FOR NOISY BEARINGS OR MECHANICAL SEALS				
CHECK ALL PILLOW BLOCK BEARINGS-U JOINT AND DRIVE SHAFTS				
CHECK GAGES ON DRIVE SHAFTS AND COUPLING GUARDS				
OPEN CHECK VALVES FOR CLEANING AND INSPECTION				

SEAL WATER SYSTEM

PREASSURE RELIEF VALVE				
COUPLING OR SPYDER				
FLOAT VALVES				
TANK				
REPLACE NOISY SEAL WATER PUMPS				

SUMP PUMP

REMOVE-CLEAN PIT AND PUMP-CHECK FOR PROPER OPERATION				
OPEN AND INSPECT CHECK WALVES-EXERCISE DISCHARGE VALVE				
VERIFY THAT DISCHARGE LINE HAS 2 CHECK VALVES				

GORMAN RUPP STATIONS

REPLACE ROTATING UNITS AND WEAR PLATES				
INSPECT BELTS AND SHEAVES-REPLACE IF WORN OR CRACKED				
INSPECT BELTS GUARDS				

FLYGT STATIONS

PULL PUMPS AND CHANGE OIL				
INSPECT STATOR HOUSING FOR OIL OR WATER				
INSPECT CORD AND CAP-RAILS AND BRACKETS				
CHECK WETWELL LID AND VALVE BOX				

COMMENTS

PUMP STATION MAINTENANCE DIVISION
PREVENTIVE MAINTENANCE
INSPECTION FORM # 1

STATION # _____ DATE _____

W/O# _____

MECHANIC _____ PAGE 2 OF 2

ASSISTANT _____

LUBRICATIONS

	ISSUED	WORK COMPLETED Y	WORK COMPLETED N	COMP DATE
MAIN PUMPS				
SEAL WATER PUMPS				
DRIVE SHAFTS				
COUPLINGS (AS NEEDED)				
VALVES				
VENTILATION FANS OR BLOWERS				
CHANGE OIL IN AIR COMPRESSORS				
CHANGE OIL IN GORMAN RUPP PUMPS				

GENERAL

EXERCISE ALL SUCTION, DISCHARGE AND PUMP OUT VALVES				
CHECK BUBBLER TUBE AND REPLACE POLY FLOW TUBING (BLACK ONLY)				
CHECK ALARM SYSTEM FOR PROPER OPERATION AND LEVEL				
REPLACE "SILENT GIANT" AIR COMPRESSOR (FOR BUBBLER SYSTEM)				

VENTILATION BLOWERS

DRYWELL FAN OPERATIONAL REPLACE OR REPAIR				
WEWELL FAN OPERATIONAL REPLACE OR REPAIR				

AIR COMPRESSORS

CHECK AIR COMPRESSORS, BELTS AND SHEAVES				
CHECK AIR COMPRESSOR OIL LEVEL				

COMMENTS

Electrical Routine Maintenance

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Miami-Dade Water and Sewer Department
Pump Station Maintenance Division
Electrical Routine Maintenance Task List for Pump Stations.

Service Area:		**Route:**	
Pump Station:		**Time In:**	
Date:		**Time Out:**	
Maintenance Team:		**EAMS Work Order #:**	

1. Record each elapsed time Meter Readings and make sure that they are operating properly. Replace Meter(s) if necessary. Record pump down cycle of each pump.

Pump # 1	**Pump # 2**	**Pump # 3**	**Pump # 4**	**Pump # 5**	**Combined**
Low:	Low:	Low:	Low:	Low:	Low:
High:	High:	High:	High:	High:	High:

Pump Down Cycle	**Minutes**	**Seconds**
Pump # 1:		
Pump # 2:		
Pump # 3:		
Pump # 4:		
Pump # 5:		
Discharge Pressure		

LOW FLOW	Yes No

Comments: _____
_____
_____

2. Record Voltage, Amperes and Megohms readings for each motor. Troubleshoot where readings are abnormal to determine the source of problem. Also record discharge pressure when taking amp reading

VOLTAGE	**Motor # 1**	**Motor # 2**	**Motor # 3**	**Motor# 4**	**Motor# 5**
AB:					
AC:					
BC:					

AMPERES Low Speed	**Motor # 1**	**Motor # 2**	**Motor # 3**	**Motor# 4**	**Motor# 5**
	FLA:	FLA:	FLA:	FLA:	FLA:
A:					
B:					
C:					

AMPERES High Speed	**Motor # 1**	**Motor # 2**	**Motor # 3**	**Motor# 4**	**Motor# 5**
	FLA:	FLA:	FLA:	FLA:	FLA:
A:					
B:					
C:					

OHMS Low Speed	**Motor # 1**	**Motor # 2**	**Motor # 3**	**Motor# 4**	**Motor# 5**
AB:					
AC:					
BC:					

OHMS High Speed	**Motor # 1**	**Motor # 2**	**Motor # 3**	**Motor# 4**	**Motor# 5**
AB:					
AC:					
BC:					

MEGOHMS To Ground	Motor # 1	Motor # 2	Motor # 3	Motor# 4	Motor# 5
A:					
B:					
C:					

Comments: _____

3. Inspect Alternator and control system for proper operation. Make adjustments as necessary. Correct deficiencies found.

Alternator:	OK	Repaired	Work Order Issued	#	Other
Control System:	OK	Repaired	Work Order Issued	#	Other

Comments: _____

4. Check operation of Level Controller. Check for air leaks, pressure regulator set points, alarm set points, etc. Ensure that pumps start and stop according to station's operating parameters and that level reading gauges are accurate and concur with SCADA readings. Make notations of adjustments made to Level Controller.
Post new Operating Level Settings Form.

Level Controller:	OK	Adjusted	Work Order Issued	#	Other

Comments: _____

5. Inspect wiring and connections in control panels, junction/ connection boxes, circuit breakers and terminal boards. Make corrections as necessary.

Control & Lighting Panels:	OK	Repaired	Work Order Issued	#	Other
Terminal Boards:	OK	Repaired	Work Order Issued	#	Other
Junction Boxes:	OK	Repaired	Work Order Issued	#	Other

Comments: _____

6. Inspect Service equipment. Note condition of equipment. Inspect Grounding system and check resistance. Max. 25 Ohms Check resistance of Fuses and compare readings. Different values may indicate weak fuses.

Service Equipment:	OK	Repaired	Work Order Issued	#	Other:
Service Grounding System:	OK	Repaired	Work Order Issued	#	Ohms:
A Phase Fuse	OK	Replaced	Work Order Issued	#	Ohms:
B Phase Fuse	OK	Replaced	Work Order Issued	#	Ohms:
C Phase Fuse	OK	Replaced	Work Order Issued	#	Ohms:

Comments: _____

7. Inspect Motor Starters. Replace worn out/pitted contacts as required. Inspect Overload block and Heater Elements for signs of heat stress. Repair/replace if necessary.

Motor # 1:	OK	Repaired	Work Order Issued	#	Other
Motor # 2:	OK	Repaired	Work Order Issued	#	Other
Motor # 3:	OK	Repaired	Work Order Issued	#	Other
Motor # 4:	OK	Repaired	Work Order Issued	#	Other
Motor # 5:	OK	Repaired	Work Order Issued	#	Other

Comments: _____

8. Check Circuit Breakers to ensure proper operation. Breakers found tripped must be investigated and fault condition cleared.

Light/Control Panel Circuit Breakers:	OK	Fault Found	Cleared Fault	Work Order Issued	#
Main and Motor Circuit Breakers:	OK	Fault Found	Cleared Fault	Work Order Issued	#
Generator Circuit Breakers:	OK	Fault Found	Cleared Fault	Work Order Issued	#

Comments: _____

9. Check interior/exterior illumination. Replace burnt light bulbs and/or repair lighting to ensure proper level of illumination.
Inspect lighting fixture connection box and check grounding.

Interior lighting:	N/A	OK	Repaired	Work Order Issued	#
Wall mounted exterior lighting:	N/A	OK	Repaired	Work Order Issued	#
Pole mounted perimeter lighting:	N/A	OK	Repaired	Work Order Issued	#

Comments: _____

10. Housekeeping. Check pump station interior and exterior for cleanliness and appearance. Clean as required and remove debris.

Interior:	N/A	OK	Cleaned	Work Order Issued	#
Exterior:	OK	Picked up debris	Cleaned	Work Order Issued	#
Sump Pump Pit:	N/A	OK	Cleaned	Work Order Issued	#

Comments: _____

11. Exercise Generator and auto transfer system. Inspect while under load to verify proper operation. Adjust as necessary. Record voltage, ampere and KW/KVA readings.

Generator:	OK	Adjusted	Work Order Issued	#	Other
Transfer equipment:	OK	Adjusted	Work Order Issued	#	Other
Voltage:					
Amperes 1:		**Amperes 2:**		**Amperes 3:**	
KW - KVA:					

Comments: _____

12. Inspect Battery Bank (s) and Charger (s). Clean and check battery connections. Test Specific Gravity of Cell's fluid.
Note number of Cells under 1200. Use N/A If not applicable.

	Voltage	Amperes	No. of Cells in Bank	Cells Under 1200
Generator Bank 1				
Generator Bank 2				
Switchgear Bank 1				
Switchgear Bank 2				
Charger 1			OK	Adjusted
Charger 2			OK	Adjusted

Comments: _____

13. Check Generator's Air Starting system. Drain Tank and observe air filling cycle. Note "cut on" and "cut off" pressures Use N/A if not applicable.

Air Starting System

Air Compressor 1	OK	Adjusted	Work Order Issued	**Tank Cut On Pressure:**	
Air Compressor 2	OK	Adjusted	Work Order Issued	**Tank Cut Off Pressure:**	
Air Compressor Aux.	OK	Adjusted	Work Order Issued	#	
Tank	OK	Adjusted	Work Order Issued	#	

Comments: _____

14. Check all Alarms. Adjust or repair as necessary to ensure proper functioning. Clean float switches. Coordinate with SCADA and/or Communications Center to ensure that alarms are being received. Check external (local) audio and visual alarms.

Door Switches:	OK	Repaired	Adjusted	Work Order Issued	#
Dry Well Flooding:	OK	Repaired	Adjusted	Work Order Issued	#
Low/High Level Electronic:	OK	Repaired	Adjusted	Work Order Issued	#
Common:	OK	Repaired	Adjusted	Work Order Issued	#
Low/High Level Float Switches:	OK	Repaired	Adjusted	Work Order Issued	#
Temperature Switches:	N/A	OK	Repaired	Work Order Issued	#
External (local) audio & visual Alarms:	OK	Repaired	Adjusted	Work Order Issued	#
Other(s):	OK	Repaired	Adjusted	Work Order Issued	#

Comments: _____

15. Inspect Sump Pump(s). Check for proper seating in pit and for leaky pipes and/or fittings. Clean sump pit.

Sump Pump(s):	N/A	OK	Repaired	Work Order Issued	#
Pipes & fittings:	N/A	OK	Repaired	Work Order Issued	#

Comments: _____

16. Check Hydropneumatic System. Drain tank and observe filling cycle. Note "Cut on" and Cut off" pressures. Use N/A if not applicable.

Hydropneumatic System

Tank:	OK	Repaired	Work Order Issued	**Tank Cut On Pressure:**	
Pump 1:	OK	Repaired	Work Order Issued	**Tank Cut Off Pressure:**	
Pump 2:	OK	Repaired	Work Order Issued	**Tank Water Level:**	
Air Compressor 1:	OK	Repaired	Work Order Issued	#	
Air Compressor 2:	OK	Repaired	Work Order Issued	#	
Controller:	OK	Repaired	Work Order Issued	#	

Comments: _____

17. Check Seal Water Systems. Drain and observe filling cycle. Note "Cut on" and Cut off" levels. Use N/A if not applicable.

Seal Water System

Tank:	OK	Repaired	Work Order Issued	**Tank Level:**	
Pump 1:	OK	Repaired	Work Order Issued	#	
Pump 2:	OK	Repaired	Work Order Issued	#	
Controller:	OK	Repaired	Work Order Issued	#	

Comments: _____

18. <u>WOUND ROTOR MOTORS ONLY</u>. Inspect brush holder assembly. Check for worn or defective brushes, replace if necessary Check and adjust spring tension. Check collector, clean and dress to maintain even surface. <u>CLEAN OR REPLACE AIR FILTERS TO ALL TYPES OF MOTORS WHEN APPLICABLE</u>. Use N/A if not applicable.

Motor # 1:	OK	Serviced	Replaced Brushes	Clean - Replace Air Filters	Work Order Issued
Motor # 2:	OK	Serviced	Replaced Brushes	Clean - Replace Air Filters	Work Order Issued
Motor # 3:	OK	Serviced	Replaced Brushes	Clean - Replace Air Filters	Work Order Issued
Motor # 4:	OK	Serviced	Replaced Brushes	Clean - Replace Air Filters	Work Order Issued
Motor # 5:	OK	Serviced	Replaced Brushes	Clean - Replace Air Filters	Work Order Issued

Comments: _____

19. Check motor bearing temperatures and lubricant levels. Note under comments unit (s) operating during inspection. Use N/A if not applicable

	Pump # 1	**Pump # 2**	**Pump # 3**	**Pump # 4**	**Pump # 5**
Inboard Bearing Temperature (Shaft end)					
Outboard Bearing Temperature (Opposite end)					
Inboard Bearing Lubrication level	OK ADDED	OK ADDED	OK ADDED	OK ADDED	OK ADDED
Outboard Bearing Lubrication level	OK ADDED	OK ADDED	OK ADDED	OK ADDED	OK ADDED

Comments: _____

20. Check motor winding temperature from Motor Monitoring Relay (MMR). Log values in Farenheit (F) or Centigrade (C) Note unit not operating. Check N/A if not applicable.

	Pump # 1	**Pump # 2**	**Pump # 3**	**Pump # 4**	**Pump # 5**
RTD 1					
RTD 2					
RTD 3					
RTD 4					
RTD 5					
RTD 6					
RTD 7					

RTD 8					
RTD 9					
RTD 10					

Comments: _____

21. Check motor vibration levels at both ends, using two check points 90 degrees apart. Check N/A if not applicable

	Pump # 1	**Pump # 2**	**Pump # 3**	**Pump # 4**	**Pump # 5**
Outboard Bearing (Opposite end)					

Comments: _____

FOR SUPERVISOR USE ONLY
Review and Commments: _____

Supervisor's Signature: _____

Mechanical Routine Maintenance

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Miami-Dade Water and Sewer Department
Pump Station Maintenance Division
Routine Maintenance Task List for Pump Stations
MECHANICAL

Service Area: _____ Time In: _____ Date: _____

Pump Station: _____ Time Out: _____ Maintenance Team: _____

Route: _____ Supervisor Review: _____

Record Elapsed Time Meter Readings

1	2	3	4	5
Low_____	Low _____	Low_____	Low _____	Low _____
High _____	High _____	High _____	High _____	High _____

1.– Turn pumps on one at a time in the hand position. Inspect to see that each pump is pumping and or submersible pump are seated. Repair deficiencies as necessary.

☐ Ok ☐ Repaired ☐ Work order for deficiency found

Comments _____

2.- Inspect all packing or seals on the following: Main Pumps, Seal Water Pumps, Check Valves, Cone Valves, Suction and Discharge Valves. Adjust or replace as needed.

☐ Ok ☐ Adjusted ☐ Repaired ☐ Work order for deficiency found

Comments _____

3.- Inspect all belts, couplings, and guards to include drive shafts. Adjust, repair, or replace as needed.

☐ Ok ☐ Adjusted ☐ Repaired ☐ Work order for deficiency found

Comments _____

4.- Lubricate pumps, pillow blocks, drive shafts and valves as required.

☐ Ok ☐ Repaired ☐ Work order for deficiency found

Comments _____

MECHANICAL

5.- Inspect oil condition and levels (as applicable) on pumps, compressors and motors. Add or replace as necessary.

☐ Ok ☐ Replaced ☐ Add ☐ Work order for deficiency found

Comments _____

6.- Exercise and inspect all valves. Open and clean check valves. Repair as needed.

☐ Ok ☐ Repaired ☐ Work order for deficiency found

Comments _____

7.- Inspect all pressure gauges for normal operation. Replace as needed.

☐ Ok ☐ Replaced ☐ Work order for deficiency found

Comments _____

8.- Log Main Pumps cut-off, and operating pressures (in psi). Force main pressure _____

1	2	3	4	5
Operating _____	Operating _____	Operating _____	Operating _____	Operating _____
Cutoff _____	Cutoff _____	Cutoff _____	Cutoff _____	Cutoff _____

9.- Inspect operation of seal water system. Check each pump and coupling. Verify that each pump produces the required discharge pressure. Each pump should operate at 10 psi above the main pump discharge pressure.

☐ Ok ☐ Adjusted ☐ Repaired ☐ Work order for deficiency found

Comments _____

10.- Inspect seal water make up valves for proper operation. Adjust make up water valves as needed. Add descaler to tank as required.

☐ Ok ☐ Adjusted ☐ Repaired ☐ Work order for deficiency found

Comments _____

11.- Inspect air system; "Silent Giants" or air compressors. Drain air reservoir as needed. Check air pressure and flow. Inspect, adjust, and replace filters in air/water separators as needed.

☐ Ok ☐ Adjusted ☐ Repaired ☐ Work order for deficiency found

Comments _____

Pump Station Maintenance Division
Routine Maintenance Task List for Pump Stations

MECHANICAL

12.- Inspect Hydropneumatic system to ensure normal operating conditions. Adjust, repair or replace components as needed.

☐ Ok ☐ Adjusted ☐ Repaired ☐ Work order for deficiency found

Comments _____

13.- Inspect operation and condition of sump pumps and piping. Remove debris from sump pit. Repair or replace as needed.

☐ Ok ☐ Adjusted ☐ Repaired ☐ Work order for deficiency found

Comments _____

14.- Inspect operation of dehumidifier. Check and clear the drain line and drain tray as needed. Replace as required.

☐ Ok ☐ Repaired ☐ Work order for deficiency found

Comments _____

15.- Inspect Odor Control System, troubleshoot for any deficiencies and make repairs are required.

☐ Ok ☐ Adjusted ☐ Repaired ☐ Work order for deficiency found

Comments _____

16.- Inspect wetwell condition, check for grease buildup or debris. Notify Wetwell Maintenance for proper maintenance.

☐ Ok ☐ Work order for deficiency found

Comments _____

17.- Inspect all hatches, ladders and grating for integrity. Notify Structural Maintenance of any deficiencies, which need to be corrected.

☐ Ok ☐ Repaired ☐ Work order for deficiency found

Comments _____

MECHANICAL

18.- Check for and maintain proper house cleaning throughout pump station. Correct/report potential safety hazards.

☐ Ok ☐ Work order for deficiency found

Comments _____

19.- Take pump down and fill up times (1 foot). Perform the fill-up twice. ☐ Low flow

Pump down

1	2	3	4	5
_____:_____	_____:_____	_____:_____	_____:_____	_____:_____
Minutes Seconds	Minutes Seconds	Minutes Seconds	Minutes Seconds	Minutes Seconds

Fill-up

	1st	2nd
Valves open	_____:_____	_____:_____
Valves closed	_____:_____ Minutes Seconds	_____:_____ Minutes Seconds

20.- Sign Log book ☐

Structural Routine Maintenance

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R.M.

Miami-Dade Water and Sewer Department
Pump Station Maintenance Division
Routine Maintenance Task List For Pump Stations
Structural

WO#_____

Service Area:_____ Time In:_____ Route:_____ Date:_____

Pump Station:_____ Time Out:_____ Maintenance Team:_____

1. Inspect doors and hatches for deficiencies. Tighten and lubricate all hardware. Clean rainwater drain trough as necessary.

☐ Ok ☐ Repaired ☐ Work order for deficiency found. ☐ N/A

Comments_____

2. Inspect ladder for deficiencies and check mounting bolts for tightness. Repair as needed.

☐ Ok ☐ Repaired ☐ Work order for deficiency found. ☐ N/A

Comments_____

3. Check all pumps, motors, piping and related equipment for corrosion, numbering, as well as paint. Repair as needed.

☐ Ok ☐ Repaired ☐ Work order for deficiency found. ☐ N/A

Comments_____

4. Inspect drywell structure for cracks, bubbling, peeling paint and spalling. Correct as needed.

☐ Ok ☐ Repaired ☐ Work order for deficiency found. ☐ N/A

Comments_____

5. Inspect condition of roof and report any deficiencies to supervisor.

☐ Ok ☐ Repaired ☐ Work order for deficiency found. ☐ N/A

Comments_____

6. Inspect windows and louvers for deficiencies. Lubricate operators and exercise. Replace/Repair as needed.

☐ Ok ☐ Repaired ☐ Work order for deficiency found. ☐ N/A

Comments_____

R.M.

Miami-Dade Water and Sewer Department
Pump Station Maintenance Division
Routine Maintenance Task List For Pump Stations
Structural

WO#_____

7. Inspect deck gratings for missing hold down clips, loose supports or bent sections. Repair/Replace as needed.

☐ Ok ☐ Repaired ☐ Work order for deficiency found. ☐ N/A

Comments_____

8. Inspect station ID sign for proper mounting and conditions. Check for visibility and replace as needed.

☐ Ok ☐ Repaired ☐ Work order for deficiency found. ☐ N/A

Comments_____

9. Inspect station grounds for sod, asphalt, and unsafe conditions. Clean and remove debris as necessary.

☐ Ok ☐ Repaired ☐ Work order for deficiency found. ☐ N/A

Comments_____

10. Inspect condition of fence and operation of gates. Repair as needed.

☐ Ok ☐ Repaired ☐ Work order for deficiency found. ☐ N/A

Comments_____

11. Inspect station for any abnormal/unsafe mechanical or electrical conditions and issue work orders to appropriate supervisor. If deficiencies need immediate attention, supervisor should be notified by radio or pager.

☐ Ok ☐ Repaired ☐ Work order for deficiency found. ☐ N/A

Comments_____

12. Inspect wet well condition. Check for evidence of corrosion, coating condition, superficial cracks and spalling. Check for and report deficiencies with operating equipment and grease build up.

☐ Ok ☐ Repaired ☐ Work order for deficiency found. ☐ N/A

Comments_____

13. Check for and maintain proper house cleaning throughout pump station structure. Clean sump pits and verify proper operation of sump pumps.

☐ Ok ☐ Repaired ☐ Work order for deficiency found. ☐ N/A

Comments_____

APPENDIX D

Pump Station Meter Inventory

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PUMP STATION SEWER METERS

METER	NAME	ADDRESS	Op Area	SIZE	TYPE	MANUF	PUMP STATION	OWNER	METER USE	Multiplier	# Dials	UOM
P-2	CALDER RACE TRACK	**21101 NW 27 AVE**	**01-03**	6	MAG	ABB	302	WASD	RETAIL	10		DGWWW
P-3	CORAL GABLES (Douglas Park)	**SW 37 AVE & 28 ST**	**05-04**	16	MAG	ABB	11	WASD	WHOLESALE	1000		KGWW
P-7	HIALEAH (WEST)	**201 W 74 PL - HIALEAH**	**01-01**	30	MAG	ABB	307	WASD	WHOLESALE	1000		KGWW
P-7A	HIALEAH (WEST)	**201 W 74 PL - HIALEAH**	**01-01**	30	MAG	ABB	307	WASD	WHOLESALE	1000		KGWW
P-11	NORTH MIAMI (PLANT 1)	**13762 NE 5 Ave.**	**01-03**	16	MAG	ABB	346	WASD	WHOLESALE	100		HGWW
P-12	NORTH MIAMI (PLANT 2)	**1881 NE 150 ST**	**01-03**	10	MAG	ABB	347	WASD	WHOLESALE	100		HGWW
P-13	OPA LOCKA	**12700 NW 30 AVE**	**01-02**	16	MAG	ABB	300	WASD	WHOLESALE	100		HGWW
M-14	OPA LOCKA CMBN. SO	**12700 NW 30 AVE**	**01-02**	23	VENTURI	BADGER	300	WASD	MONITOR	1000		KGWW
M-14A	OPA LOCKA NO.	**12700 NW 30 AVE**	**01-02**	24	MAG	ABB	300	WASD	MONITOR	1000		KGWW
M-15	OPA LOCKA AIRPORT	**15000 NW 37 AVE**	**01-02**	10	MAG	ABB	345	WASD	MONITOR	100		HGWW
P-18	DADE. CO. SOLID WASTE (Resouce Recovery Facility)	**6990 NW 97 AVE**	**03-02**	6	TT	EASTECH	936	WASD	RETAIL	100		HGWW
M-23	CAROL CITY YARD	**3750 NW 181 ST**	**01-02**	16	MAG	ABB	415	WASD	MONITOR	100		HGWW
P-24	HIALEAH (EAST)	**5700 E. 8 Ave (Hialeah)**	**01-01**	18	MAG	ABB	348	WASD	WHOLESALE	1000		KGWW
M-26	F.E.C. AIRPORT	**2201 NW 70 AVE**	**03-03**	12	MAG	ABB	19	WASD	MONITOR	100		HGWW

PUMP STATION SEWER METERS

METER	NAME	ADDRESS	Op Area	SIZE	TYPE	MANUF	PUMP STATION	OWNER	METER USE	Multiplier	# Dials	UOM
M-28	MIAMI LAKES	**13940 NW 60 AVE**	**01-01**	12	MAG	ABB	414	WASD	MONITOR	100		HGWW
M-30	SUNSHINE UTIL	**7301 NW 186 ST**	**01-01**	8	MAG	ABB	416	WASD	MONITOR	1000		KGWW
M-31	PALM SPRING	**7870 NW 178 ST.**	**01-01**	8	MAG	ABB	417	WASD	MONITOR	100		HGWW
M-32	SNAKE CREEK	**20215 NW 2 AVE**	**01-03**	12	MAG	ABB	421	WASD	MONITOR	1000		KGWW
M-33	RIVERDALE	**3028 NW 208 TER**	**01-02**	10	MAG	ABB	422	WASD	MONITOR	100		HGWW
M-34	GOLDEN ISLES (isco mag)	**2459 NE 204 ST**	**01-03**	12	MAG	ISCO	423	WASD	MONITOR	100		HGWW
M-35	BISC. MED. CTR	**21101 NE 28 AVE**	**01-03**	10	TT	EASTECH	424	WASD	MONITOR	100		HGWW
M-36	AVENTURA	**19021 NE 29 AVE**	**01-03**	12	MAG	ABB	425	WASD	MONITOR	100		HGWW
P-38	HIALEAH (FAR W)	**3330 W 76 ST**	**01-01**	16	MAG	ABB	418	WASD	WHOLESALE	1000		KGWW
M-40	EASTERN SHORES	**3801 SUNNY ISLES BLVD**	**01-03**	20	TT	EASTECH	426	WASD	MONITOR	100		HGWW
P-41	NORTH DADE LANDFILL	**21411 NW 47 AVE**	**01-02**	12	MAG	ABB	340	WASD	RETAIL	1		GWW
M-46	FLAGLER - BOOSTER	**NW 72 AVE & FLG.**	**05-01**	36	DOPLER	SIGMA	187	WASD	MONITOR	1000		KGWW
P-53	MIAMI BEACH (Fisher Island)	**FISHER ISLAND**	**05-03**	8	TT	EASTECH	170	WASD	DEDUCT	1000		KGWW
M-55	NT - 10	**15100 NW 37 AVE**	**01-02**	42	MAG	KROHNE	1310	WASD	MONITOR	1000		KGWW

PUMP STATION SEWER METERS

METER	NAME	ADDRESS	Op Area	SIZE	TYPE	MANUF	PUMP STATION	OWNER	METER USE	Multiplier	# Dials	UOM
P-62	HIALEAH GARDENS	**3330 W. 76th Street (Hia.)**	**01-01**	10	MAG	ABB	418	WASD	WHOLESALE	100		HGWW
P-68	MIAMI-DADE SEPORT	**Dodge Island**	**05-03**	4	MAG	ABB	141	PRIVATE	RETAIL	100		HGWW
M-105	K-LAND	**8700 SW 95 AVE**	**03-07**	30	TT	EASTECH	559	WASD	MONITOR	100		HGWW
M-110	FLORIDA WATER	**10390 PUERTO RICO DR.**	**04-04**	18	MAG	ABB	516	WASD	MONITOR	100		HGWW
M-111	CUTLER RIDGE	**OLD CUTLER RD. & 184 ST.**	**04-03**	10	MAG	ABB	517	WASD	MONITOR	100		HGWW
M-112	KENDALL-BOOSTER	**8989 SW 117 AVE.**	**05-08**	66	TT	EASTECH	536	WASD	MONITOR	10000		TGWW
M-114	SO. MIAMI HGHTS.	**20820 SW 117 AVE**	**04-04**	30	TT	EASTECH	552	WASD	MONITOR	1000		KGWW
P-116	HOMESTEAD	**SW 172 AVE & 328 ST**	**04-06**	24	MAG	ABB	691	WASD	WHOLESALE	1000		KGWW
M-119	SNAPPER CREEK	**8250 SW 97 AVE**	**03-07**	24	TT	EASTECH	571	WASD	MONITOR	1000		KGWW
P-122	FLORIDA CITY	**461 NW 5 AVE**	**04-06**	10	MAG	ABB	1073	WASD	WHOLESALE	100		HGWW

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APPENDIX E

SCADA Maintenance Task List

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Line	Equipment	Equip Description	Aspect	Point	Point Description	Method	Finding	Value	UOM	Comment	Date	Equip Class	Equip Category	Equip Location	Equip Mfg	Equip Model	Equip Serial Number
200	PS0347-ASYS-SCADA-COMM-TRDSA1	PS0347 Station Amp Transmitter	SCAT	051	CHECK CURRENT TRANSFORMER FOR CORRECT SIZE	QUAL						SCATRD	SCATRDC		CROMPTON	253-TALU	
210	PS0347-ASYS-SCADA-COMM-TRDSA1	PS0347 Station Amp Transmitter	SCAT	052	CHECK CALIBRATION OF CURRENT TRANSDUCER USING 0-5 A POWER SOURCE	QUAL						SCATRD	SCATRDC		CROMPTON	253-TALU	
220	PS0347-ASYS-SCADA-COMM-TRDSA1	PS0347 Station Amp Transmitter	SCAT	053	RECORD SPAN (AMPS)	QUAN						SCATRD	SCATRDC		CROMPTON	253-TALU	
230	PS0347-ASYS-SCADA-COMM-TRDSA1	PS0347 Station Amp Transmitter	SCAT	054	RECORD SPAN (MA)	QUAN						SCATRD	SCATRDC		CROMPTON	253-TALU	
10	PS0347-ASYS-SCADA-COMM-TRXDP1	PS0347 Discharge Pressure Transmitter	SCAT	051	CHECK MAKE AND MODEL	QUAL						SCATRX	SCATRXP		ABB AUTOMATION	264HP	6412001899
20	PS0347-ASYS-SCADA-COMM-TRXDP1	PS0347 Discharge Pressure Transmitter	SCAT	052	CHECK DIGITAL DISPLAY	QUAL						SCATRX	SCATRXP		ABB AUTOMATION	264HP	6412001899
40	PS0347-ASYS-SCADA-COMM-TRXDP1	PS0347 Discharge Pressure Transmitter	SCAT	054	FLUSH TRANSMITTER MANIFOLD	QUAL						SCATRX	SCATRXP		ABB AUTOMATION	264HP	6412001899
50	PS0347-ASYS-SCADA-COMM-TRXDP1	PS0347 Discharge Pressure Transmitter	SCAT	055	CHECK CALIBRATION OF TRANSMITTER, ADJUST IF REQUIRED	QUAL						SCATRX	SCATRXP		ABB AUTOMATION	264HP	6412001899
60	PS0347-ASYS-SCADA-COMM-TRXDP1	PS0347 Discharge Pressure Transmitter	SCAT	056	RECORD SPAN (PSI)	QUAN						SCATRX	SCATRXP		ABB AUTOMATION	264HP	6412001899
70	PS0347-ASYS-SCADA-COMM-TRXDP1	PS0347 Discharge Pressure Transmitter	SCAT	057	RECORD SPAN (MA)	QUAN						SCATRX	SCATRXP		ABB AUTOMATION	264HP	6412001899
80	PS0347-ASYS-SCADA-COMM-TRXDP1	PS0347 Discharge Pressure Transmitter	SCAT	058	VERIFY PRESSURE READING THROUGH SCADA	QUAL						SCATRX	SCATRXP		ABB AUTOMATION	264HP	6412001899
90	PS0347-ASYS-SCADA-COMM-TRXDP1	PS0347 Discharge Pressure Transmitter	SCAT	059	CHECK STATION PRESSURE TRANSMITTER SIGNAL AND ADJUST, IF APPLICABLE	QUAL						SCATRX	SCATRXP		ABB AUTOMATION	264HP	6412001899
100	PS0347-ASYS-SCADA-COMM-TRXDP1	PS0347 Discharge Pressure Transmitter	SCAT	060	CHECK STATION CHART RECORDER AND VERIFY READING	QUAL						SCATRX	SCATRXP		ABB AUTOMATION	264HP	6412001899
110	PS0347-ASYS-SCADA-COMM-TRXDP1	PS0347 Discharge Pressure Transmitter	SCAT	061	CREATE FOLLOW UP WORK ORDER IF NECESSARY	QUAL						SCATRX	SCATRXP		ABB AUTOMATION	264HP	6412001899
10	PS0347-ASYS-SCADA-COMM-TRXSP1	PS0347 Suction Pressure Transmitter	SCAT	051	CHECK MAKE AND MODEL	QUAL						SCATRX	SCATRXP		ABB	266HDH	3K646613034445
20	PS0347-ASYS-SCADA-COMM-TRXSP1	PS0347 Suction Pressure Transmitter	SCAT	052	CHECK DIGITAL DISPLAY	QUAL						SCATRX	SCATRXP		ABB	266HDH	3K646613034445
40	PS0347-ASYS-SCADA-COMM-TRXSP1	PS0347 Suction Pressure Transmitter	SCAT	054	FLUSH TRANSMITTER MANIFOLD	QUAL						SCATRX	SCATRXP		ABB	266HDH	3K646613034445
50	PS0347-ASYS-SCADA-COMM-TRXSP1	PS0347 Suction Pressure Transmitter	SCAT	055	CHECK CALIBRATION OF TRANSMITTER, ADJUST IF REQUIRED	QUAL						SCATRX	SCATRXP		ABB	266HDH	3K646613034445
60	PS0347-ASYS-SCADA-COMM-TRXSP1	PS0347 Suction Pressure Transmitter	SCAT	056	RECORD SPAN (PSI)	QUAN						SCATRX	SCATRXP		ABB	266HDH	3K646613034445
70	PS0347-ASYS-SCADA-COMM-TRXSP1	PS0347 Suction Pressure Transmitter	SCAT	057	RECORD SPAN (MA)	QUAN						SCATRX	SCATRXP		ABB	266HDH	3K646613034445
80	PS0347-ASYS-SCADA-COMM-TRXSP1	PS0347 Suction Pressure Transmitter	SCAT	058	VERIFY PRESSURE READING THROUGH SCADA	QUAL						SCATRX	SCATRXP		ABB	266HDH	3K646613034445
90	PS0347-ASYS-SCADA-COMM-TRXSP1	PS0347 Suction Pressure Transmitter	SCAT	059	CHECK STATION PRESSURE TRANSMITTER SIGNAL AND ADJUST, IF APPLICABLE	QUAL						SCATRX	SCATRXP		ABB	266HDH	3K646613034445
100	PS0347-ASYS-SCADA-COMM-TRXSP1	PS0347 Suction Pressure Transmitter	SCAT	060	CHECK STATION CHART RECORDER AND VERIFY READING	QUAL						SCATRX	SCATRXP		ABB	266HDH	3K646613034445
110	PS0347-ASYS-SCADA-COMM-TRXSP1	PS0347 Suction Pressure Transmitter	SCAT	061	CREATE FOLLOW UP WORK ORDER IF NECESSARY	QUAL						SCATRX	SCATRXP		ABB	266HDH	3K646613034445

Line	Equipment	Equip Description	Aspect	Point	Point Description	Method	Finding	Value	UOM	Comment	Date	Equip Class	Equip Category	Equip Location	Equip Mfg	Equip Model	Equip Serial Number
10	PS0068-ASYS-SCADA-COMM-GAUR	PS0068 Station Rain Gauge	SCAT	051	CHECK RAIN GAUGE TYPE:	QUAL						SCAGAU	SCAGAUR		ALL WEATHER INC	6011A	3359
20	PS0068-ASYS-SCADA-COMM-GAUR	PS0068 Station Rain Gauge	SCAT	052	CHECK FUNNEL FOR CLOGGING UNCLOG FUNNEL	QUAL						SCAGAU	SCAGAUR		ALL WEATHER INC	6011A	3359
30	PS0068-ASYS-SCADA-COMM-GAUR	PS0068 Station Rain Gauge	SCAT	053	CLEAR AND CLEAN TIPPER	QUAL						SCAGAU	SCAGAUR		ALL WEATHER INC	6011A	3359
40	PS0068-ASYS-SCADA-COMM-GAUR	PS0068 Station Rain Gauge	SCAT	054	CALL SCADA TO START TEST	QUAL						SCAGAU	SCAGAUR		ALL WEATHER INC	6011A	3359
50	PS0068-ASYS-SCADA-COMM-GAUR	PS0068 Station Rain Gauge	SCAT	055	CHECK CALIBRATION WITH GRADUATED CYLINDER	QUAL						SCAGAU	SCAGAUR		ALL WEATHER INC	6011A	3359
55	PS0068-ASYS-SCADA-COMM-GAUR	PS0068 Station Rain Gauge	SCAT	057	RECORD TIPPING BUCKET COUNTS	QUAN						SCAGAU	SCAGAUR		ALL WEATHER INC	6011A	3359
60	PS0068-ASYS-SCADA-COMM-GAUR	PS0068 Station Rain Gauge	SCAT	056	CALL SCADA TO RESET RAIN GAUGE	QUAL						SCAGAU	SCAGAUR		ALL WEATHER INC	6011A	3359

SCADA RTU PM BIANNUAL CHECK POINTS

Line	Equipment	Equip Description	Aspect	Point	Point Description	Method	Finding	Value	UOM	Comment	Date	Equip Class	Equip Category	Equip Location	Equip Mfg	Equip Model	Equip Serial Number
5	PS0578-ASYS-SCADA-COMM-RTU01	PS0578 Remote Terminal Unit	SCAT	072	VERIFY MODEL, SERIAL NUBMER AND UNIT ADDRESS ARE CORRECT	QUAL						SCARTU	SCARTU		BRISTOL BABCOCK	DPC-3330	94A05811
10	PS0578-ASYS-SCADA-COMM-RTU01	PS0578 Remote Terminal Unit	SCAT	051	NOTIFY APPROPRIATE PERSONNEL THAT YOU WILL BE DOING A POINT TO POINT CHECK	QUAL						SCARTU	SCARTU		BRISTOL BABCOCK	DPC-3330	94A05811
20	PS0578-ASYS-SCADA-COMM-RTU01	PS0578 Remote Terminal Unit	SCAT	052	RECORD VOLTS AT STATION-RELAY TO SCADA (VAC)	QUAN						SCARTU	SCARTU		BRISTOL BABCOCK	DPC-3330	94A05811
30	PS0578-ASYS-SCADA-COMM-RTU01	PS0578 Remote Terminal Unit	SCAT	053	RECORD AMPS AT STATION-RELAY TO SCADA (AMP)	QUAN						SCARTU	SCARTU		BRISTOL BABCOCK	DPC-3330	94A05811
40	PS0578-ASYS-SCADA-COMM-RTU01	PS0578 Remote Terminal Unit	SCAT	054	CHECK CURRENT TRANSDUCER, IF APPLICABLE	QUAL						SCARTU	SCARTU		BRISTOL BABCOCK	DPC-3330	94A05811
50	PS0578-ASYS-SCADA-COMM-RTU01	PS0578 Remote Terminal Unit	SCAT	055	VERIFY LEVEL TRANSMITTER SPAN IS 0-10 PSI	QUAL						SCARTU	SCARTU		BRISTOL BABCOCK	DPC-3330	94A05811
60	PS0578-ASYS-SCADA-COMM-RTU01	PS0578 Remote Terminal Unit	SCAT	056	CHECK FOR CORRECT NODE ADDRESS ON INSIDE OF RTU CABINET DOOR	QUAL						SCARTU	SCARTU		BRISTOL BABCOCK	DPC-3330	94A05811
80	PS0578-ASYS-SCADA-COMM-RTU01	PS0578 Remote Terminal Unit	SCAT	058	CHECK FOR RTU I/O DRAWING,IF NOT AVAILABLE INSTALL ON THE DOOR OF RTU	QUAL						SCARTU	SCARTU		BRISTOL BABCOCK	DPC-3330	94A05811
90	PS0578-ASYS-SCADA-COMM-RTU01	PS0578 Remote Terminal Unit	SCAT	059	SEAL ALL CONDUITS EXPOSED TO SEWER GASES	QUAL						SCARTU	SCARTU		BRISTOL BABCOCK	DPC-3330	94A05811
100	PS0578-ASYS-SCADA-COMM-RTU01	PS0578 Remote Terminal Unit	SCAT	060	CLEAN RTU CABINET	QUAL						SCARTU	SCARTU		BRISTOL BABCOCK	DPC-3330	94A05811
110	PS0578-ASYS-SCADA-COMM-RTU01	PS0578 Remote Terminal Unit	SCAT	061	CHECK BATTERY TERMINALS FOR CORROSION	QUAL						SCARTU	SCARTU		BRISTOL BABCOCK	DPC-3330	94A05811
120	PS0578-ASYS-SCADA-COMM-RTU01	PS0578 Remote Terminal Unit	SCAT	062	REPLACE BATTERIES IF MORE THAN 18 MONTHS OLD, WRITE DATE ON NEW BATT.	QUAL						SCARTU	SCARTU		BRISTOL BABCOCK	DPC-3330	94A05811
130	PS0578-ASYS-SCADA-COMM-RTU01	PS0578 Remote Terminal Unit	SCAT	063	CHECK RTU ENCLOSURE MOUNTING HARDWARE	QUAL						SCARTU	SCARTU		BRISTOL BABCOCK	DPC-3330	94A05811
140	PS0578-ASYS-SCADA-COMM-RTU01	PS0578 Remote Terminal Unit	SCAT	064	CHECK RTU ENCLOSURE AND NOTE IF IT NEEDS PAINTING	QUAL						SCARTU	SCARTU		BRISTOL BABCOCK	DPC-3330	94A05811
150	PS0578-ASYS-SCADA-COMM-RTU01	PS0578 Remote Terminal Unit	SCAT	065	CHECK AC SURGE PROTECTION	QUAL						SCARTU	SCARTU		BRISTOL BABCOCK	DPC-3330	94A05811
170	PS0578-ASYS-SCADA-COMM-RTU01	PS0578 Remote Terminal Unit	SCAT	067	CHECK ALL BOARDS TO SEE IF THEY ARE SEATED PROPERLY IN SLOTS	QUAL						SCARTU	SCARTU		BRISTOL BABCOCK	DPC-3330	94A05811
180	PS0578-ASYS-SCADA-COMM-RTU01	PS0578 Remote Terminal Unit	SCAT	068	TEST ANALOG BOARD WITH CALIBRATOR - REMEMBER TO LOOK FOR PROPER JUMPER SETTINGS	QUAL						SCARTU	SCARTU		BRISTOL BABCOCK	DPC-3330	94A05811
190	PS0578-ASYS-SCADA-COMM-RTU01	PS0578 Remote Terminal Unit	SCAT	069	TEST ALL POINTS WITH PORTABLE COMPUTER. (DI AND DO)	QUAL						SCARTU	SCARTU		BRISTOL BABCOCK	DPC-3330	94A05811
200	PS0578-ASYS-SCADA-COMM-RTU01	PS0578 Remote Terminal Unit	SCAT	070	TEST A/C FAIL AND BATTERY LOW	QUAL						SCARTU	SCARTU		BRISTOL BABCOCK	DPC-3330	94A05811
210	PS0578-ASYS-SCADA-COMM-RTU01	PS0578 Remote Terminal Unit	SCAT	071	TEST ALL POINTS THROUGH SYSTEM TO WORKSTATION	QUAL						SCARTU	SCARTU		BRISTOL BABCOCK	DPC-3330	94A05811
220	PS0578-ASYS-SCADA-COMM-TXR	PS0578 RTU Microwave Transceiver	SCAT	051	VERIFY RADIO MODEL, SERIAL NUMBER AND UNIT ADDRESS ARE CORRECT	QUAL						SCATXR	SCATXR		MICROWAVE MDS	9710B	1315262
230	PS0578-ASYS-SCADA-COMM-TXR	PS0578 RTU Microwave Transceiver	SCAT	052	CHECK ALL CONNECTIONS FOR TIGHTNESS, AND ALL SET SCREWS SHOULD BE TIGHTENED	QUAL						SCATXR	SCATXR		MICROWAVE MDS	9710B	1315262
240	PS0578-ASYS-SCADA-COMM-TXR	PS0578 RTU Microwave Transceiver	SCAT	053	RECORD SIGNAL STRENGTH RSSI (DB)	QUAN						SCATXR	SCATXR		MICROWAVE MDS	9710B	1315262
250	PS0578-ASYS-SCADA-COMM-TXR	PS0578 RTU Microwave Transceiver	SCAT	054	CHECK REFLECTED POWER. (1/4 WATT OR LESS IS OK)	QUAN						SCATXR	SCATXR		MICROWAVE MDS	9710B	1315262
260	PS0578-ASYS-SCADA-COMM-TXR	PS0578 RTU Microwave Transceiver	SCAT	055	RECORD POWER OUTPUT (WATTS)	QUAN						SCATXR	SCATXR		MICROWAVE MDS	9710B	1315262
270	PS0578-ASYS-SCADA-COMM-TXR	PS0578 RTU Microwave Transceiver	SCAT	056	REPLACE RADIO IF NEEDED, ATTACH DOCUMENTATION OF CHANGE	QUAL						SCATXR	SCATXR		MICROWAVE MDS	9710B	1315262
280	PS0578-ASYS-SCADA-COMM-TXR	PS0578 RTU Microwave Transceiver	SCAT	057	CHECK GROUND ROD FOR CADWELD CONNECTION	QUAL						SCATXR	SCATXR		MICROWAVE MDS	9710B	1315262
290	PS0578-ASYS-SCADA-COMM-TXR	PS0578 RTU Microwave Transceiver	SCAT	058	CHECK GROUND WIRE ON ANTENNA MAST	QUAL						SCATXR	SCATXR		MICROWAVE MDS	9710B	1315262
300	PS0578-ASYS-SCADA-COMM-TXR	PS0578 RTU Microwave Transceiver	SCAT	059	INSPECT THAT RADIO SURGE SUPPRESSER SHOULD BE GROUNDED TO GROUND	QUAL						SCATXR	SCATXR		MICROWAVE MDS	9710B	1315262
310	PS0578-ASYS-SCADA-COMM-TXR	PS0578 RTU Microwave Transceiver	SCAT	060	CHECK GROUNDING KIT AT THE ANTENNA.	QUAL						SCATXR	SCATXR		MICROWAVE MDS	9710B	1315262
320	PS0578-ASYS-SCADA-COMM-TXR	PS0578 RTU Microwave Transceiver	SCAT	061	1/2" ANTENNA CABLE SHOULD HAVE HEAT SHRINK ON BOTH CONNECTORS	QUAL						SCATXR	SCATXR		MICROWAVE MDS	9710B	1315262
330	PS0578-ASYS-SCADA-COMM-TXR	PS0578 RTU Microwave Transceiver	SCAT	062	CHECK ANTENNA AND CABLE FOR PHYSICAL DAMAGE	QUAL						SCATXR	SCATXR		MICROWAVE MDS	9710B	1315262
340	PS0578-ASYS-SCADA-COMM-TXR	PS0578 RTU Microwave Transceiver	SCAT	063	EQUIPMENT GROUND SHOULD BE CONNECTED ON TERMINAL BLOCK IN RTU ENCLOSURE	QUAL						SCATXR	SCATXR		MICROWAVE MDS	9710B	1315262

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APPENDIX F

Work Order Status Report EAMS Screen Shot Examples

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EAMS Data – Work Order Status Overview:

Work Order: 1002344787 PS0339 Electrical Start-UP

Organization: WASD1
Status: Closed
Equipment: PS0339

List View | Record View | Comments | Activities | Book Labor | Schedule Labor | Meter Readings | Parts | Cost Summary | Tools Usage | Children | Repair Parts | Additional Costs | Service Request Details | Incidents | Inspections | Permits | Monitored Data Results | ERP PO Query | Pick Ticket parts

(temp)2014 PSMD Work Orders — Edit — Work Order — Contains — Run

Work Order	Description	Equipment	Date Created	Actual Start Date	Date Completed	Status	Type
1002344787	PS0339 Electrical Start-UP	PS0339	12/20/2012	01/30/2014 10:00	01/30/2014 13:00	Closed	New Install / Upgrade
1002531107	PS0048 Electrical Equipment Replacement	PS0048	12/02/2013	10/08/2014 10:00	10/08/2014 11:31	Work Complete	New Install / Upgrade
1002535346	PS0348 INSTALL ODOR SYSTEM	PS0348-SSYS-VENTILATION	12/10/2013	01/28/2014 00:00	02/19/2014 16:00	Closed	New Install / Upgrade
1002643287	PS0460 Electrical Final Inspection.	PS0460-ESYS	06/05/2014	06/05/2014 07:30	06/05/2014 15:30	Closed	New Install / Upgrade
1002643337	Assemble and install Signs	PSMD-SAS	06/05/2014	06/05/2014 07:30	06/05/2014 16:00	Closed	New Install / Upgrade
1002643886	PS0733 FP&L Reconnection.	PS0733-ESYS	06/06/2014	06/06/2014 07:30	06/06/2014 15:30	Closed	New Install / Upgrade
1002643889	PS0460 Check Station For final Transfon.	PS0460-ESYS	06/06/2014	06/06/2014 07:30	06/06/2014 15:30	Closed	New Install / Upgrade
1002644438	PS0460 Check Station For final Transfon.	PS0460-ESYS	06/09/2014	06/09/2014 07:30	06/09/2014 15:30	Closed	New Install / Upgrade
1002645218	PS0733 Final Inspection.	PS0733-ESYS	06/10/2014	06/10/2014 07:30	06/10/2014 15:30	Closed	New Install / Upgrade
1002645221	PS0460 Check Station For final Transfon.	PS0460-ESYS	06/10/2014	06/10/2014 07:30	06/10/2014 15:30	Closed	New Install / Upgrade
1002647124	PS0745 Pickup Materials for Upgrade	PS0745-ESYS	06/12/2014	06/12/2014 07:30	06/12/2014 15:30	Closed	New Install / Upgrade
1002651205	PS0733 Final Inspection and Record Data.	PS0733-ESYS	06/20/2014	06/20/2014 07:30	06/20/2014 15:30	Closed	New Install / Upgrade
1002668814	PS0416 Replace Exterior Fixtures 5ea	PS0416	07/18/2014	09/15/2014 07:30	09/15/2014 07:48	Closed	New Install / Upgrade
1002671645	PS0510 Check Station For Upgrade.	PS0510-ESYS	07/24/2014	07/24/2014 07:30	07/24/2014 15:30	Closed	New Install / Upgrade
1002672478	PS0510 Running Conduits in Drywell.	PS0510-ESYS	07/25/2014	07/25/2014 07:00	07/25/2014 15:30	Closed	New Install / Upgrade
1002672969	PS0745 Check Station for Upgrade.	PS0745-ESYS	07/25/2014	07/25/2014 07:30	07/25/2014 15:30	Closed	New Install / Upgrade
1002673752	PS0510 Running Conduits in Drywell.	PS0510-ESYS	07/28/2014	07/28/2014 07:30	07/28/2014 15:30	Closed	New Install / Upgrade
1002673760	PS0745 Running Conduits in Drywell.	PS0745-ESYS	07/28/2014	07/28/2014 07:30	07/28/2014 15:30	Closed	New Install / Upgrade
1002673968	PS0510 Running Conduits in Drywell.	PS0510-ESYS	07/29/2014	07/29/2014 07:30	07/29/2014 15:30	Closed	New Install / Upgrade
1002673979	PS0745 Running Conduits in Drywell.	PS0745-ESYS	07/29/2014	07/29/2014 07:30	07/29/2014 15:30	Closed	New Install / Upgrade
1002674599	PS0510 Running Conduits in Drywell.	PS0510-ESYS	07/30/2014	07/30/2014 07:30	07/30/2014 15:30	Closed	New Install / Upgrade
1002674602	PS0745 Running Conduits in Drywell.	PS0745-ESYS	07/30/2014	07/30/2014 07:00	07/30/2014 15:30	Closed	New Install / Upgrade
1002675224	PS0510 Running Conduits in Drywell.	PS0510-ESYS	07/31/2014	07/31/2014 07:30	07/31/2014 15:30	Closed	New Install / Upgrade
1002675237	PS0745 Running Conduits in Drywell.	PS0745-ESYS	07/31/2014	07/31/2014 07:30	07/31/2014 15:30	Closed	New Install / Upgrade
1002675819	PS0318 Remove Old VFDs from station	PS0318	07/31/2014	08/08/2014 11:00	08/08/2014 13:30	Closed	New Install / Upgrade

Records: 100 of 200+ (123)

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APPENDIX G

Critical Spare Parts and Equipment List

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Part	Description	Organization	Preferred Manufacturer	Category	OUM	Buyer	Preferred Supplier	Insurance Item	Repairable Spare	Calibration Standard	Prevene Reorders	Track by Asset
2520050024167	U-JOINT, FOR LEFT PUMP AT 4TH AND 9TH ST. STATIONS, F.M. 20 PUMP	WASD1	SPICER		EA			YES	NO	NO	NO	NO
2520050024168	CROSS, ASSY., W/CAP NEEDLE BEARING, LEFT PUMP AT 4TH AND 9TH STAT., F.M. 20	WASD1	SPICER		EA			YES	NO	NO	NO	NO
2815050013490	RING, ITEM 3, PUMP S/N 1543846, SIZE 20-LCS-4 VOLUTE, ENGINE S/N V03451, SW #5 M	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
2815050033473	PUMP, LUBE OIL, ENGINE MODEL 12GT2B	WASD1	SUPERIOR		EA			YES	NO	NO	NO	NO
3010050014239	COUPLING, DRIVE HALF, FOR B.J. EFF PUMP 806E1073	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
3010050014272	COUPLING, #401, WELL FIELD PUMPS	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
3030050041265	BELT, V, POWER BAND, FOR MAG DRIVES CENTRATE PUMPS	WASD1	GATES		EA			YES	NO	NO	NO	NO
3110050008437	BEARING, RADIAL, P/N 1003201, WEMCO TORQUE PUMP 4X 4, ITEM #23	WASD1	NTN		EA			YES	NO	NO	NO	NO
3110050025541	BEARING, BALL, 35 X 72 X 27MM, DRIVE END, FOR CL-302 VACUUM PUMP(NASH UBB-0305)	WASD1	FAG		EA			YES	NO	NO	NO	NO
3110050029494	BEARING, BALL, INBOARD, FOR HIGH SERVICE PUMP, (ALLIS-CHALMERS CP811-005-733)	WASD1	SKF		EA			YES	NO	NO	NO	NO
3110050029495	BEARING, BALL, OUTBOARD, FOR HIGH SERVICE PUMP, (ALLIS-CHAL CP811-423-733),SET=2	WASD1	SKF		ST			YES	NO	NO	NO	NO
3110050032880	BEARING, RADIAL, MORRIS PUMP 2RX, S/N M-22155-57 (P/N 9001130300, MRC 313M)	WASD1	FAFNIR		EA			YES	NO	NO	NO	NO
3110050033350	BEARING, INBOARD, CHLORINE BOOSTER PUMP SPLIT CASE(ALLIS-CHALMERS 3-026-3)	WASD1	NTN		EA			YES	NO	NO	NO	NO
3110050034581	BEARING, INBOARD 6332, PUMP S/N 64869-1, SZ 36X24L(ALLIS-CHALMERS 52-129-364-001	WASD1	FAG		EA			YES	NO	NO	NO	NO
3110050035677	BEARING, OUTBOARD, CHEMICAL RECIRCULATION PUMP(DURCO 1K121)	WASD1	SKK		EA			YES	NO	NO	NO	NO
3110050039046	BEARING, MARINE, COLUMN PUMP	WASD1	THORDON		EA			YES	NO	NO	NO	NO
3110050041126	BEARING, LINE, HIGH SERVICE PUMP #5, MODEL 24LNC42, SERIAL # 0109MS001386	WASD1	FLOWSERV		EA			YES	NO	NO	NO	NO
3110050041127	BEARING, THRUST, HIGH SERVICE PUMP #5, MODEL 24LNC42, SERIAL # 0109MS001386	WASD1	FLOWSERV		EA			YES	NO	NO	NO	NO
3110050041134	BEARING, LINE, HIGH SERVICE PUMP # 3 & 4, SIZE 16LNC-28, SERIAL # 0109MS001385	WASD1	FLOWSERV		EA			YES	NO		NO	NO
3110050041135	BEARING, THRUST, HIGH SERVICE PUMP # 3 & 4, SIZE 16LNC-28, SERIAL # 0109MS001385	WASD1	FLOWSERV		EA			YES	NO	NO	NO	NO
3110050041198	BEARING, INNER, PUMP S/N K3W1070757-0, STA. 595	WASD1	FAIRBANK		EA			YES	NO	NO	NO	NO
3110050041199	BEARING, OUTER, PUMP S/N K3W1070757-0, STA. 595	WASD1	FAIRBANK		EA			YES	NO	NO	NO	NO
3110050041208	BEARING, BALL, PUMP S/N 1-64723-01-2, PS 690	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
3110050041209	BEARING, ROLL, PUMP S/N 1-64723-01-1, PS 690	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
3110050041644	BEARING, BALL, OUTBOARD, PUMP MODEL 7196, 4x4x12, S/N DP-759171, PS 0510	WASD1	CRANE DE		EA			YES	NO	NO	NO	NO
3110050041645	BERING, BALL, INBOARD, PUMP MODEL 7196, 4x4x12, S/N DP-759171, PS 0510	WASD1	CRANE DE		EA			YES	NO	NO	NO	NO
3120011557270	BUSHING, FOR PUMP MODEL 413, S/N 84-1207-1, L.H. ROTATION, SIZE 6X8X15	WASD1	AURORA		EA			YES	NO	NO	NO	NO
3120050013489	BUSHING, ITEM 3, PUMP S/N 1413987,88,89,90, SIZE 16-LNC-35 VOLUTE, SDR MAIN PUMP	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
3120050014234	BEARING, BOTTOM, #104, FOR B.J. EFF. PUMP 806E1073	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
3120050014235	BUSHING, THROTTLE, #232, FOR B.J. EFF. PUMP 806E1073	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
3120050014317	BEARING, TEE, BYRON JACKSON PUMP S/N #279-740/45	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
3120050025203	BEARING, PUMP MODELS 114, 115 & 116 FAFNIR SME15K/COL	WASD1	AURORA		EA			YES	NO	NO	NO	NO
3120050025249	BUSHING, FOR PUMP MODELS 114, 115 & 116 TYPE F4S	WASD1	AURORA		EA			YES	NO	NO	NO	NO
3120050030045	BEARING, TOP CASE, 3 1/2 X 4 X 2 7/16 , FOR PUMP MODEL 32RXL1, S/N 816-E-1103,	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
3120050030051	BEARING, PLAIN, 3 1/2 X 2 7/16, PUMP MODEL32RXL1, S/N 816-E-1103, SWWF 25-28	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
3120050030081	BEARING, BRONZE, TOP SERIES CASE, PUMP MODEL 32RXL, S/N 771E-0121/0126	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
3120050031012	BEARING, INBOARD, PUMP S/N 251153, 14000 GPM	WASD1	TRANSAM-		EA			YES	NO	NO	NO	NO
3120050033224	BEARING, SCREW, PUMP MODEL 28TLO, S/N26142, WELLS1-4 (PATT. #A1610)	WASD1	U.S. PUM		EA			YES	NO	NO	NO	NO
3120050034432	BUSHING, THROTTLE, FOR PUMP SIZE 10 X 8 X 14 - U1314B	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
3120050039092	BEARING, BOTTOM, #104, PUMP MODEL 32RXL2STG, S/N 781E0173	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
3120050040890	BEARING, CASE, BOTTOM, 32RXL1, 94-ER-1616, WEST WELL PUMPS 29, 30 ,31	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
3120050040891	BEARING, JUMP, 32RXL1, 94-ER-1616, WEST WELL PUMPS 29, 30 ,31	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
3120050040892	BEARING, CASE, TOP, 32RXL1, 94-ER-1616, WEST WELL PUMPS 29, 30 ,31	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
3120050040893	BEARING, TENSION, 32RXL1, 94-ER-1616, WEST WELL PUMPS 29, 30 ,31	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
3120050040895	BEARING, COLUMN, PLAIN, 32RXL1, 94-ER-1616, WEST WELL PUMPS 29, 30 ,31	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
3130050012309	BEARING, PILLOW BLOCK (MARLOW PUMP 2951200)	WASD1	LINK-BEL		EA			YES	NO	NO	NO	NO
4310050025520	SLINGER, FOR CL-302 VACUUM PUMP TEST NO. 83U-1688	WASD1	NASH		EA			YES	NO	NO	NO	NO
4310050025523	GLAND, LANTERN, FOR CL-302 VACUUM PUMP TEST NO. 83U-1688	WASD1	NASH		EA			YES	NO	NO	NO	NO
4310050033571	RING, SET, COMPLETE PUMP, AIR COMPRESSOR MODEL BRA20, S/N R70A5983 AND 5984	WASD1	CHAMPAIR		ST			YES	NO	NO	NO	NO
4320003535181	PLATE, WEAR, FOR PUMP MODEL 13A2-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320003535188	WEIGHT, LARGE, FOR PUMP MODEL 14A2-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320004078522	PLATE, WEAR, FOR PUMP MODEL 14A2-B, 14A11-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320004278586	WEIGHT, SMALL, FOR PUMP MODEL 14A2-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320004673065	SHAFT, FOR PUMP MODEL 413, S/N 84-12607-1, L.H. ROTATION, SIZE 6X8X15	WASD1	AURORA		EA			YES	NO	NO	NO	NO
4320004807397	RING, SLINGER, FOR PUMP MODEL 14A2-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320004963679	PLATE, COVER, FOR PUMP MODELS T3A3-B, T4A3-B, T6A3-B, T8A3-B, 14A2-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320007792837	LINER, SEAL, FOR PUMP MODEL 12D-13, S/N 756206	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO

Part	Description	Organization	Preferred Manufacturer	Category	OUM	Buyer	Preferred Supplier	Insurance Item	Repairable Spare	Calibration Standard	Prevene Reorders	Track by Asset
4320010094334	SLEEVE, SHAFT, FOR PUMP MODELS T3A3-B, T4A3-B, T6A3-B, T8A3-B, 14A2-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320010094335	PLATE, WEAR, FOR PUMP MODEL T3A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320010224051	SHAFT, FOR PUMP MODEL T4A3-B, T6A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320010606704	SLEEVE, FOR PUMP MODEL 413, S/N 84-12607-1, L.H. ROTATION, SIZE 6X8X15	WASD1	AURORA		EA			YES	NO	NO	NO	NO
4320011323132	VENT, AIR, FOR PUMP MODELS T3A3-B, T4A3-B, T6A3-B, T8A3-B, 14A2-B, W/AP-0802 BUS	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320011590856	BUSHING, FOR PUMP MODEL 413, S/N 84-12607-1, L.H. ROTATION, SIZE 6X8X15	WASD1	AURORA		EA			YES	NO	NO	NO	NO
4320050005543	PUMP, AQUARIUM, 115 VOLTS, WHISPER AP 150	WASD1	TETRA		EA			YES	NO	NO	NO	NO
4320050012289	GLAND, PACKING, MARLOW PUMP MODEL HPE1142	WASD1	MARLOW P		EA			YES	NO	NO	NO	NO
4320050012343	SLEEVE, SHAFT, FOR TRASH HOG CENTRIFUGAL PUMP, SPEC Q8363AA (NO SUBSTITUTIONS)	WASD1	MARLOW P		EA			YES	NO	NO	NO	NO
4320050012357	GLAND, SUB-ASSY., PUMP S/N M26260, M26261, M26259, SIZE 14 X 12, MODEL 12ECD, ST	WASD1	MORRIS P		ST			YES	NO	NO	NO	NO
4320050012373	RING, PUMP S/N M22155, PUMP MODEL 2RX,	WASD1	MORRIS P		EA			YES	NO	NO	NO	NO
4320050012374	LINER, PUMP S/N M22155, PUMP MODEL 2RX	WASD1	MORRIS P		EA			YES	NO	NO	NO	NO
4320050012375	SLEEVE, CERAMIC COATED, PUMP S/N M22155 MODEL 2RX	WASD1	MORRIS P		EA			YES	NO	NO	NO	NO
4320050012376	LINER, PUMP	WASD1	MORRIS P		EA			YES	NO	NO	NO	NO
4320050012379	LINER, PUMP S/N M25252, M25864, M26297, M26807, SIZE, MODEL 1JC11	WASD1	MORRIS P		EA			YES	NO	NO	NO	NO
4320050012380	GLAND, PUMP S/N M25252, M25864, M26297, M26807, SIZE, MODEL 1JC11	WASD1	MORRIS P		EA			YES	NO	NO	NO	NO
4320050012382	SLINGER, PUMP S/N M25252, M25864, M26297, M26807,SIZE, MODEL 1JC11	WASD1	MORRIS P		EA			YES	NO	NO	NO	NO
4320050012383	HOUSING, THRUST BEARING, PUMP S/N M25252, M25864,M26927, M26807	WASD1	MORRIS P		EA			YES	NO	NO	NO	NO
4320050012384	SHAFT, PUMP S/N M25252, M25864, M26297, M26807, MODEL 1JC11	WASD1	MORRIS P		EA			YES	NO	NO	NO	NO
4320050012386	RING, PUMP S/N M25252, M25864, M26297, M26807, SIZE, MODEL 1JC11	WASD1	MORRIS P		EA			YES	NO	NO	NO	NO
4320050012387	CLOTH, PUMP S/N M25252, M25864, M26297, M26807, MODEL 1JC11	WASD1	MORRIS P		EA			YES	NO	NO	NO	NO
4320050012389	CAGE, SEAL, PUMP S/N M25252, M25864, M26297, M26807, MODEL 1JC11	WASD1	MORRIS P		ST			YES	NO	NO	NO	NO
4320050012390	CAGE, SEAL, SET OF 2, PUMP S/N M22155, SIZE, MODEL 2RX	WASD1	MORRIS P		ST			YES	NO	NO	NO	NO
4320050012391	SLEEVE, PUMP S/N M25252, MODEL JC1J STD. MATL DESC. COL 69 ON 304, ITM#126	WASD1	MORRIS P		EA			YES	NO	NO	NO	NO
4320050012393	COLLAR, PUMP S/N M22155, SIZE, MODEL 2RX	WASD1	MORRIS P		EA			YES	NO	NO	NO	NO
4320050012394	SLINGER, PUMP S/N M22155, SIZE, MODEL 2RX	WASD1	MORRIS P		EA			YES	NO	NO	NO	NO
4320050012395	SHAFT, PUMP S/N M22155, SIZE, MODEL 2RX	WASD1	MORRIS P		EA			YES	NO	NO	NO	NO
4320050012396	CASING, PUMP S/N M25252, M25864, M26297,M26807, MODEL 1JC11	WASD1	MORRIS P		EA			YES	NO	NO	NO	NO
4320050012404	SHAFT, PUMP S/N	WASD1	MORRIS P		EA			YES	NO	NO	NO	NO
4320050012406	GLAND, HALF, PUMP S/N M22155, PUMP MODEL 2RX	WASD1	MORRIS P		ST			YES	NO	NO	NO	NO
4320050012431	FRONTHEAD, PUMP S/N K25460, K25461, SIZE 4 , MODEL 5413, STA. 5	WASD1	FAIRBANK		EA			YES	NO	NO	NO	NO
4320050012540	FRONTHEAD, PUMP S/N K2T1065540-1, K2T1065540-2, 795004, 005, 008, 009, 010, 20	WASD1	FAIRBANK		EA			YES	NO	NO	NO	NO
4320050012541	BACKHEAD, PUMP SIZE 20 , MODEL 5712	WASD1	FAIRBANK		EA			YES	NO	NO	NO	NO
4320050012547	GLAND, HALF, PUMP S/N 795004, 795005, 795008, 795009, 795010, 20 , MODEL 5712, 4	WASD1	FAIRBANK		PR			YES	NO	NO	NO	NO
4320050012550	COVER, THRUST BEARING, PUMP S/N 795004, 795005, 795008, 795009, 795010, 20 , MOD	WASD1	FAIRBANK		EA			YES	NO	NO	NO	NO
4320050012552	COVER, LOWER BEARING HSG., PUMP S/N 795004, 795005, 795008, 795009, 795010, 20 ,	WASD1	FAIRBANK		EA			YES	NO	NO	NO	NO
4320050012556	LINER, OUTER, FOR FLEX COUPLING PERIPHERAL PUMP, S/N SR-4R-9BF, F.M. 6820, MODEL	WASD1	FAIRBANK		EA			YES	NO	NO	NO	NO
4320050012580	FRONTHEAD, PUMP MODEL 5442-25, STA. 315	WASD1	FAIRBANK		EA			YES	NO	NO	NO	NO
4320050012967	DEFLECTOR, PUMP S/N K2V1071261, K2V1071261-1, SIZE 6 X 8, MODEL 5433B, STA. 74	WASD1	FAIRBANK		EA			YES	NO	NO	NO	NO
4320050013291	COVER, BEARING, PUMP S/N 1-04587-2-1, 1-04587-1-1, SIZE 6 X 5 X 17, MODEL 250-NS	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050013415	SLEEVE, PUMP S/N 1543846, SIZE 20-LCS-4 VOLUTE, ENGINE S/N V03451, SW #5 MAIN PU	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
4320050013416	RING, PUMP S/N 1543846, SIZE 20-LCS-4 VOLUTE, ENGINE S/N V03451, SW #5 MAIN PUMP	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
4320050013420	RING, PUMP S/N 1413987,88,89,90, SIZE 16-LNC-35 VOLUTE, SDR MAIN PUMP	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
4320050013423	SLEEVE, SHAFT, FOR PUMP MODEL/SIZE 24LNC-42, S/N 7722U8118-1 , SET = A & B	WASD1	WORTHING		ST			YES	NO	NO	NO	NO
4320050013424	SLEEVE, SHAFT, FOR PUMP MODEL 10MF21, SERIAL NO.80TP90567, FRAME 7	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
4320050013426	GLAND, FOR PUMP MODEL 10MF21, SERIAL NO. 80TP90567, FRAME 7	WASD1	WORTHING		PR			YES	NO	NO	NO	NO
4320050013439	COVER, BEARING HOUSING, INBOARD, FOR PUMP MODEL 10MF21, 8MFV-18	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
4320050013441	COVER, BEARING HOUSING, OUTBOARD, FOR PUMP MODEL 10MF21	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
4320050013442	COVER, BEARING HOUSING, FOR PUMP MODEL 10MF21	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
4320050013451	COVER, HAND HOLE, FOR PUMP MODEL 10MF21	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
4320050013452	SHAFT, WITH KEY AND STUDFOR PUMP M0DEL 10FM21	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
4320050013457	COVER, GASKET, LINE BEARING, FOR PUMP MODEL 10MF21	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
4320050013458	COVER, HAND HOLE GASKET, FOR PUMP MODEL 10MF21	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
4320050013461	FRAME, BEARING, FOR PUMP #10MF21, S/N 1-80TP90-567-7	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
4320050013468	SLEEVE, ITEM 10, PUMP S/N 1413987,88,89,90, SIZE 16-LNC-35 VOLUTE, SDR MAIN PUMP	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
4320050013469	CAGE, ITEM 13, PUMP S/N 1413987,88,89,90, SIZE 16-LNC-35 VOLUTE, SDR MAIN PUMP	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
4320050013470	COLLAR, ITEM 20, PUMP S/N 1413987,88,89,90, SIZE 16-LNC-35 VOLUTE, SDR MAIN PUMP	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
4320050013484	COLLAR, ITEM 20,38, PUMP S/N 1543846, SIZE 20-LCS-4 VOLUTE, ENGINE S/N V03451, S	WASD1	WORTHING		EA			YES	NO	NO	NO	NO

Part	Description	Organization	Preferred Manufacturer	Category	OUM	Buyer	Preferred Supplier	Insurance Item	Repairable Spare	Calibration Standard	Prevene Reorders	Track by Asset
4320050013487	SHIELD, ITEM 22, PUMP S/N 1543846, SIZE 20-LCS-4 VOLUTE, ENGINE S/N V03451, SW #	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
4320050013528	COVER, STUFFING BOX, PUMP S/N 1-00841-2-1, 1-00841-1-1, SIZE 12 X 8 X 14, MODEL	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050013670	SLEEVE, SHAFT, FOR PUMP TYPE ETA 80-250, S/N 112933-491 HEAT EXCHANGER PUMP HOT	WASD1	CARVER P		EA			YES	NO	NO	NO	NO
4320050013672	GLAND, MECHANICAL SEAL, FOR PUMP TYPE ETA 80-250,S/N 112933-491 HEAT EXCHANGER	WASD1	CARVER P		EA			YES	NO	NO	NO	NO
4320050013678	COVER, BEARING, INBOARD, ON PUMP TYPE ETA 80-250,S/N 112933-491 HEAT EXCHANGER	WASD1	CARVER P		EA			YES	NO	NO	NO	NO
4320050013679	COVER, BEARING, OUTBOARD, FOR PUMP TYPE ETA 80-250, S/N 112933-491 HEAT EXCHANGE	WASD1	CARVER P		EA			YES	NO	NO	NO	NO
4320050013680	DEFLECTOR, FOR PUMP TYPE ETA 80-250, S/N 112933-491 HEAT EXCHANGER PUMP HOT CIRC	WASD1	CARVER P		EA			YES	NO	NO	NO	NO
4320050013681	SHAFT, FOR PUMP TYPE ETA 80-250, S/N 112933-491 HEAT EXCHANGER PUMP HOT CIRC., I	WASD1	CARVER P		EA			YES	NO	NO	NO	NO
4320050013682	CASING, WEAR RING, FOR PUMP TYPE ETA 80-250, S/N 112933-491 HEAT EXCHANGER PUMP	WASD1	CARVER P		EA			YES	NO	NO	NO	NO
4320050013683	CASING, GASKET, FOR PUMP TYPE ETA 80-250, S/N 112933-491 HEAT EXCHANGER PUMP HOT	WASD1	CARVER P		EA			YES	NO	NO	NO	NO
4320050014251	SHAFT, BOWL, #167, FOR B.J. EFF. PUMP 806E1073	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
4320050014254	RING, SPLIT, #256-3, FOR B.J. EFF.PUMP 806E1073	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
4320050014263	SPIDER, M838, VERTICAL CIRCULATING PUMP #1F3623, S/N 279740-45, WELL FIELD PUMPS	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
4320050014264	SPIDER, #872, VERTICAL CIRCULATING PUMP,SIZE 28KXL DWG 2B 10743, S/N 347877, WEL	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
4320050014270	COLUMN, INNER, 60 , PUMP S/N 279740	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
4320050014278	CASING, SERIES, BRG.243, PUMP MODEL 24KXL1, SE-279471	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
4320050014301	PUMP, RECIRCULATING, #A8202, 115 VOLT, 3100 RPM, 60 HZ, 1.63A, CLASS F, 1 FLANGE	WASD1	GRUNDFOS		EA			YES	NO	NO	NO	NO
4320050014311	COLUMN, INNER, CONNECTING PUMP, #405, SIZE 28KXL,F/WELL17-18-19-20	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
4320050014588	PUMP, SUMP, VOLT/PH=115/1, 1750RPM, 1/3	WASD1	BARNES		EA			YES	NO	NO	NO	NO
4320050014608	SHAFT, PUMP, 3 3/16x1 11/16x88 5/8,304SS,MODEL 28TLO,S/N12043,AO WELL PUMPS 1-4	WASD1	U.S. PUM		EA			YES	NO	NO	NO	NO
4320050014683	CASING, PUMP 1.5 , WHITE IRON, SER. K221662	WASD1	WILFLEY		EA			YES	NO	NO	NO	NO
4320050014685	PLATE, FOLLOWER, WITH GASKET, PUMP MODEL K, S/N K215995, SIZE 2K	WASD1	WILFLEY		EA			YES	NO	NO	NO	NO
4320050014843	RING, SHOCK, S/N 87414-15, PUMP 14 MODEL #NCC	WASD1	KROGH		EA			YES	NO	NO	NO	NO
4320050014850	GLAND, SPLIT TYPE, S/N 87414-15, PUMP 14 MODEL #NCC	WASD1	KROGH		EA			YES	NO	NO	NO	NO
4320050014851	SLEEVE, SHAFT, S/N 87414-15, PUMP 14 MODEL #NCC	WASD1	KROGH		EA			YES	NO	NO	NO	NO
4320050014855	COVER, CASING, 14 , S/N 87414-15, PUMP 14 MODEL #NCC	WASD1	KROGH		EA			YES	NO	NO	NO	NO
4320050017860	HOUSING, BEARING, FOR PUMP MODEL T4A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050017861	VOLUTE, FOR PUMP MODEL T4A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050017864	CAP, BEARING, FOR PUMP MODEL T4A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050017866	PLATE, WEAR, FOR PUMP MODEL T4A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050017867	ROTATING ASSEMBLY, KIT, FOR PUMP MODEL T4A3-B	WASD1	GORMAN-R		KT			YES	NO	NO	NO	NO
4320050017870	ROTATING ASSEMBLY, KIT, FOR PUMP MODEL T6A3-B	WASD1	GORMAN-R		KT			YES	NO	NO	NO	NO
4320050017872	HOUSING, BEARING, FOR PUMP MODEL T6A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050017873	PLATE, WEAR, FOR PUMP MODEL T6A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050017875	FLANGE, SUCTION, FOR PUMP MODEL T4A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050017878	SHAFT, FOR PUMP MODEL T3A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050017879	HOUSING, BEARING, FOR PUMP MODEL T3A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050017880	FLANGE, SUCTION, FOR PUMP MODEL T6A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050017884	ROTATING ASSEMBLY, KIT, FOR PUMP MODEL T3A3-B	WASD1	GORMAN-R		KT			YES	NO	NO	NO	NO
4320050017890	PLATE, SEAL, FOR PUMP MODEL T3A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050017892	PLATE, SEAL, FOR PUMP MODEL T6A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050017893	PLATE, BACK COVER, FOR PUMP MODEL T8A3-B (OLD PART NUMBER=12347-A)	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050017894	PLATE, WEAR, FOR PUMP MODEL T8A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050017896	PLATE, SEAL, FOR PUMP MODEL T8A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050017899	CAP, BEARING, FOR PUMP MODEL T8A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050017901	SHAFT, FOR PUMP MODEL T8A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050017904	SLEEVE, SHAFT, FOR PUMP MODEL T8A3-B, T4B3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050017921	WEIGHT, SMALL, FOR PUMP MODEL 13A2-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050017931	PLATE, END, FOR PUMP MODEL 13A2-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050017935	SHAFT, FOR PUMP MODEL 14A2-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050017936	PEDESTAL, FOR PUMP MODEL 13A2-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050017937	SHAFT, FOR PUMP MODEL 13A2-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050017941	PLATE, SEAL, FOR PUMP MODEL 13A2-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050017946	CAP, BEARING, FOR PUMP MODEL 14A2-B, 14A11-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050017977	LINER, SEAL, FOR PUMP MODEL 13A2-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050017979	PLATE, COVER, FOR PUMP MODEL T4A2-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050017981	COVER, BACK, FOR PUMP MODEL T6A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050017982	COVER, BACK, FOR PUMP MODEL T4A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO

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4320050017983	PLATE, SEAL, FOR PUMP MODEL T4A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050017984	BAR, CLAMP, FOR PUMP MODELS T3A3-B, T4A3-B, T6A3-B, T8A3-B, 14A2-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050017990	COVER, BACK, FOR PUMP MODEL T3A3-B, S/N 707174	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050018413	DEFLECTOR, OIL, OUTBOARD, PUMP S/N 811-3	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050018414	DEFLECTOR, INBOARD, PUMP S/N 761-18845-2-3, SIZE10 X 8 X 14, MODEL 150-NSW	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050018452	CARTRIDGE, BEARING, PUMP S/N 801-35149-1-1, & 1-2, & 1-3, SIZE 12 X 10 X 21 LC,	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050018474	COVER, SUCTION, PUMP MODEL 300-NSWV,SIZE	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050018475	COVER, SUCTION, PUMP S/N 741-16045-1-1, 741-16045-2-1, SIZE 6 X 4 X 12, MODEL 30	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050018477	COVER, STUFFING BOX, PUMP MODEL 300-NSWV	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050018492	SHAFT, PUMP S/N 791-31739-4-2, 791-31739-3-1, SIZE 4 X 4 X 14, MODEL 300-NSWV, S	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050018514	SHAFT, PUMP S/N 791-31739-4-2, SIZE 4 X 4 X 14, MODEL 300-NSWV	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050018519	DEFLECTOR, OIL, PUMP S/N 751-14813-11-2,751-14813-11-1, SIZE 10 X 8 X 21, MODEL	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050023135	CAP, BEARING, FOR PUMP MODEL 413, S/N 84-1207-1, L.H. ROTATION, SIZE 6X8X15	WASD1	AURORA		EA			YES	NO	NO	NO	NO
4320050023139	GLAND, FOR PUMP MODEL 413, S/N 84-12607-1, L.H. ROTATION, SIZE 6X8X15	WASD1	AURORA		ST			YES	NO	NO	NO	NO
4320050023142	RING, LANTERN, FOR PUMP MODEL 413, S/N 84-12607-1, L.H. ROTATION, SIZE 6X8X15	WASD1	AURORA		EA			YES	NO	NO	NO	NO
4320050024813	RING, PUMP S/N 560009428A-29-28, PUMPS 7-10, (1R-397551-60-CR-902007-3)	WASD1	WORTHING		PR			YES	NO	NO	NO	NO
4320050024816	SHAFT, 4 1/4 X 72 3/4 , FOR 16 LNC 35 # 1-4 HIGH SERVICE PUMPS (DELETE WHEN 0)	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
4320050025064	PUMP, BELT DRIVE VACUUM,120V,MODEL D-150, PRECISION CAT# 5122005	WASD1	VAC TORR		EA			YES	NO	NO	NO	NO
4320050025220	SLEEVE, ITEM#29, FOR PUMP MODELS 114, 115 & 116	WASD1	AURORA		EA			YES	NO	NO	NO	NO
4320050025441	RING, LANTERN, FOR FLOW PUMP 4 X 4	WASD1	WEMCO		ST			YES	NO	NO	NO	NO
4320050025443	SLEEVE, SHAFT #17, FOR FLOW PUMP 4 X 4	WASD1	WEMCO		EA			YES	NO	NO	NO	NO
4320050025444	SLEEVE, SHAFT #18, FOR FLOW PUMP 4 X 4	WASD1	WEMCO		EA			YES	NO	NO	NO	NO
4320050025448	PLATE, WEAR, #29, FOR FLOW PUMP, 4 X 4	WASD1	WEMCO		EA			YES	NO	NO	NO	NO
4320050025535	CONE, IDLE END, BRONZE, ON CL-302 VACUUM PUMP TEST NO. 83U-1688	WASD1	NASH		EA			YES	NO	NO	NO	NO
4320050025543	CONE, DRIVE END, BRONZE, ON CL-302 VACUUM PUMP TEST NO.83U-1688	WASD1	NASH		EA			YES	NO	NO	NO	NO
4320050028445	COVER, BEARING HOUSING, INBOARD, FOR PUMP MODEL 10MF21	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
4320050028560	GLAND, SUB-ASSY., PUMP S/N M26428-6431,	WASD1	MORRIS P		EA			YES	NO	NO	NO	NO
4320050029063	RING, WEAR, FOR DOUBLE SUCTION PUMP S/N 255209, SIZE 10 (E PUMP)	WASD1	TRANSAM-		EA			YES	NO	NO	NO	NO
4320050029064	RING, WEAR, FOR DOUBLE SUCTION PUMP S/N 255209, SIZE 10 (E PUMP)	WASD1	TRANSAM-		EA			YES	NO	NO	NO	NO
4320050029067	SHAFT, FOR DOUBLE SUCTION PUMP S/N 255209, SIZE 10 (E PUMP)	WASD1	TRANSAM-		EA			YES	NO	NO	NO	NO
4320050029071	DEFLECTOR, FOR DOUBLE SUCTION PUMP S/N 255209, SIZE 10 (E PUMP)	WASD1	TRANSAM-		EA			YES	NO	NO	NO	NO
4320050029130	SLEEVE, SHAFT, PUMP S/N 66287, SIZE 20 X 18, MODEL 214-354-502, TYPE L.S.	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050029131	SHAFT, PUMP S/N 66287, SIZE 20 X 18, MODEL 214-354-502, TYPE L.S.	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050029132	CAGE, SEAL, PUMP S/N 66287, SIZE 20 X 18, MODEL 214-354-502, TYPE L.S.	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050029390	RING, CASING, PUMP S/N 1606217, SIZE 16LN28	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
4320050029391	SLEEVE, SHAFT, WT, W/SET SCREW, PUMP S/N 1606217,SIZE 16LN28	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
4320050029400	SLEEVE, SHAFT, PUMP MODEL 5150, S/N 7928V6651-1610, 4 , SIZE 400VB	WASD1	GOYNE PU		EA			YES	NO	NO	NO	NO
4320050029492	RING, CASING, FOR # 6 HIGH SERVICE PUMP, SIZE 36 X24	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050029493	GLAND, ASSEMBLY, FOR # 6 HIGH SERVICE PUMP, SIZE 36 X 24	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050029496	SHAFT, SLEEVE, FOR HIGH SERVICE PUMP, SIZE 36 X 24	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050029497	SLEEVE, STUFFING SHAFT, FOR HIGH SERVICE PUMP, SIZE 36 X 24	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050029843	PLATE, TENSION, W/STANDARD BEARING AND PACKING, PUMP MODEL 28TLO, WELLS 1 THRU 4	WASD1	U.S. PUM		EA			YES	NO	NO	NO	NO
4320050030041	COLLAR, THRUST, SS, 6 1/2 OD X 3 7/16 ID, X 1 7/8 , FOR PUMP MODEL 32RXL1, S/N	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
4320050030042	KEY, SAND, 4 11/16 OD X 2 15/16 ID X 2 , BRONZE, FOR PUMP MODEL 32RXL1, S/N 81	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
4320050030043	RING, SPLIT, SS, 3 3/4 OD X 3 1/8 ID, FOR PUMP MODEL 32RXL1, S/N 816-E-1103, W	WASD1	BYRON JA		ST			YES	NO	NO	NO	NO
4320050030048	COUPLING, SHAFT, 3 1/4 OD X 2 7/16 X 5 1/2 , SS, FOR PUMP MODEL 32RXL1, S/N 81	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
4320050030049	SHAFT, COLUMN, 2-7/16 X 120 , SS, FOR PUMP MODEL32RXL1, S/N 816-E-1103, WELLS	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
4320050030050	COLUMN, INNER, LOWER, 3 1/2 X 24 , 316 SS, FOR PUMP MODEL 32RXL1, S/N 816-E-11	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
4320050030052	COLUMN, INNER, NEXT TO BOTTOM, 3 1/2 X 36 LG, FOR PUMP MODEL 32RXL1, S/N 816-	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
4320050030053	COLUMN, INNER, 3 1/2 X 60 LG FOR PUMP MODEL 32RXL1, S/N 816-E-1103, WELLS 25-2	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
4320050030056	PLATE, TENSION, 5 3/4 ODX3 7/8 IDX1/2 THICK, PUMP MODEL 32RXL1,S/N 816-E-1103	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
4320050030057	SHAFT, TOP COLUMN, SS, 2 7/16 X 160, FOR PUMP MODEL 32RXL1, S/N 816-E-1103, WEL	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
4320050030078	SHAFT, PUMP, 2 15/16 X 80 3/4, WELLS 8-9	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
4320050030082	COLLAR, THRUST, WELLS 8-9, PUMP MODEL 32RXL1, S/N771-E-0121/0126	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
4320050030806	PUMP, TURBINE, MODEL 15BF, SINGLE STAGE	WASD1	AURORA		EA			YES	NO	NO	NO	NO
4320050030960	COLLAR, SAND, 64 BRONZE, PUMP MODEL 28TLO, WELLS 1 THRU 7	WASD1	U.S. PUM		EA			YES	NO	NO	NO	NO
4320050030961	COLLAR, THRUST, 28T, MANGANESE BRONZE, PUMP MODEL28TLO, WELLS 1 THRU 7	WASD1	U.S. PUM		EA			YES	NO	NO	NO	NO
4320050030972	RING, PACKING GLAND, 21 X 1/2 , PUMP SIZE 2K, MODEL K, S/N K215995	WASD1	WILFLEY		EA			YES	NO	NO	NO	NO

Part	Description	Organization	Preferred Manufacturer	Category	OUM	Buyer	Preferred Supplier	Insurance Item	Repairable Spare	Calibration Standard	Prevene Reorders	Track by Asset
4320050030990	RING, DIE, W/SCREW, PUMP SIZE 1K S/N K118410, SIZE 2K S/N K215995, MODEL K	WASD1	WILFLEY		EA			YES	NO	NO	NO	NO
4320050031009	SLEEVE, RIGHT HAND, PUMP S/N 251153, 14000 GPM	WASD1	TRANSAM-		EA			YES	NO	NO	NO	NO
4320050031010	SLEEVE, LEFT HAND, PUMP S/N 251153, 14000 GPM	WASD1	TRANSAM-		EA			YES	NO	NO	NO	NO
4320050031015	RING, CASING, PUMP S/N 251153, 14000 GPM	WASD1	TRANSAM-		EA			YES	NO	NO	NO	NO
4320050031017	DEFLECTOR, (SLINGER), PUMP S/N 251153, 14000 GPM	WASD1	TRANSAM-		EA			YES	NO	NO	NO	NO
4320050031087	SHAFT, PUMP S/N 257230 (A PUMP)	WASD1	TRANSAM-		EA			YES	NO	NO	NO	NO
4320050031138	REDUCER, PUMP S/N AS52309, PUMP MODEL 1L10H, TYPECSRXTO	WASD1	MOYNO PU		EA			YES	NO	NO	NO	NO
4320050031143	SHAFT, DRIVE, PUMP MODEL 1L8/2L8, TYPE CDQ	WASD1	MOYNO PU		EA			YES	NO	NO	NO	NO
4320050031156	PLATE, PUMP MODEL 1L8, TYPE CDQF	WASD1	MOYNO PU		EA			YES	NO	NO	NO	NO
4320050031157	COLLAR, DRIVE SHAF, PUMP MODEL 1L8/2L8, TYPE CDQ	WASD1	MOYNO PU		EA			YES	NO	NO	NO	NO
4320050032208	PLATE, SEAL, FOR PUMP MODEL T4A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050032307	SLEEVE, SHAFT, FOR PUMP MODEL 10MF21, SERIAL# 80TP90569, FRAME 6	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
4320050032854	PLATE, WEAR, ASSEMBLY, FOR PUMP MODEL T10A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050032860	PUMP, 130 GPM CAPACITY, 1728/576 RPM. 110 FT HEAD, 9.8 BHP	WASD1	MORRIS P		EA			YES	NO	NO	NO	NO
4320050032866	SHAFT, FOR PUMP MODEL 24LNC-42, S/N 560009428A, 7THRU 10 HS PUMPS	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
4320050032871	GLAND, FOR PUMP MODEL 24LNC-42, S/N 560009428A, 7THRU 10 HS PUMPS	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
4320050032883	HOUSING, BEARING, SUB-ASSEMBLY, PUMP S/N M22155-57, MODEL 2RX	WASD1	MORRIS P		EA			YES	NO	NO	NO	NO
4320050032887	DISC, SUCTION, PUMP MODEL 1JC11	WASD1	MORRIS P		EA			YES	NO	NO	NO	NO
4320050032888	DISC, HUB, PUMP MODEL 1JC11	WASD1	MORRIS P		EA			YES	NO	NO	NO	NO
4320050033024	CAP, BEARING, FOR PUMP MODEL T8A3-B, T10A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050033059	BOWL, LIFT STATION DRY WELL PUMPS	WASD1	FAIRBANK		EA			YES	NO	NO	NO	NO
4320050033061	SHAFT, PUMP S/N 64496 FRAME F7M5, MODEL 300 5X5X12	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050033062	SLEEVE, SHAFT, PUMP S/N 64496, MODEL 300 5X5X12, FRAME F7M5	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050033231	PUMP, MODEL 135, SIZE G05, 3/4 H.P.,1750 RPM,3 PHASE, 230/460 VOLTS	WASD1	AURORA		EA			YES	NO	NO	NO	NO
4320050033347	RING, CASING, 410 SS, CHLORINE BOOSTER PUMP SPLITCASE 8000 SERIES 6X4X12L	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050033348	SHAFT, 316 SS, CHLORINE BOOSTER PUMP SPLIT CASE 8000 SERIES 6X4X12L	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050033349	HOUSING, BEARING, CHLORINE BOOSTER PUMP SPLIT CASE 8000 SERIES 6X4X12L	WASD1	ALLIS-CH		ST			YES	NO	NO	NO	NO
4320050033360	SLEEVE, SHAFT, CHLORINE BOOSTER PUMP SPLIT CASE 8000 SERIES 6X4X12L	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050033362	GLAND, PACKING, CHLORINE BOOSTER PUMP SPLIT CASE 8000 SERIES 6X4X12L	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050033363	CAGE, SEAL, CHLORINE BOOSTER PUMP SPLIT CASE 8000SERIES 6X4X12	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050033388	PUMP, SIZE G05, 1750 RPM, 3/4 H.P., 150 TDH, 1-PH,120 VOLTS, MOD. IQB56C17D5562A	WASD1	AURORA		EA			YES	NO	NO	NO	NO
4320050033428	RING, DIE, PUMP SIZE 1 1/2, MODEL K, S/N 17146	WASD1	WILFLEY		EA			YES	NO	NO	NO	NO
4320050033533	SHAFT, PUMP S/N 349588, SIZE 10X8X17	WASD1	DURCO		EA			YES	NO	NO	NO	NO
4320050033535	CAGE, SEAL, PUMP S/N 349588, SIZE 10X8X17	WASD1	DURCO		EA			YES	NO	NO	NO	NO
4320050033540	SLEEVE, SHAFT, PUMP S/N 349588, SIZE 10X8X17	WASD1	DURCO		EA			YES	NO	NO	NO	NO
4320050033542	SHAFT, PUMP S/N 348966, PUMP S/N 348966, SIZE 2K 6X4-13A-11050	WASD1	DURCO		EA			YES	NO	NO	NO	NO
4320050033543	SLEEVE, SHAFT, PUMP S/N 348966, SIZE 2K 6X4-13A-11050	WASD1	DURCO		EA			YES	NO	NO	NO	NO
4320050033545	GASKET, REAR COVER, PUMP S/N 348966, SIZE 2K 6X4-13A-11050	WASD1	DURCO		EA			YES	NO	NO	NO	NO
4320050033621	CASING, PUMP MODEL JC2X-11, S/N MM39162-9164	WASD1	MORRIS P		EA			YES	NO	NO	NO	NO
4320050033622	LINER, SUCTION, PUMP MODEL JC2X3-11, S/N MM39162-9164	WASD1	MORRIS P		EA			YES	NO	NO	NO	NO
4320050033624	COVER, SUCTION, PUMP MODEL JC2X3-11, S/N MM39162-9164	WASD1	MORRIS P		EA			YES	NO	NO	NO	NO
4320050033661	PLATE, FRONT WEAR, FOR PUMP MODEL T10A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050033664	PLATE, SEAL END, FOR PUMP MODEL T10A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050033811	SLEEVE, SHAFT, FOR PUMP MODEL 16C20-B, 10 SERIES,S/N 971367	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050033815	PLATE, WEAR, ASSBLY, FOR PUMP MODEL 16C20-B, 10 SERIES, S/N 971367	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050033916	SLEEVE, SHAFT, FOR PUMP MODEL 12MNV-14, S/N 78ZUS8167-2	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
4320050033923	RING, WEAR, SUCTION ELBOW, FOR PUMP MODEL 12MNV-14, S/N 78245-8167-2	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
4320050033924	HEAD, STUFFING BOX, FOR PUMP MODEL 12MNV-14, S/N 78245-8167-2	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
4320050033938	SLEEVE, SHAFT, FOR PUMP MODEL 14MNV24, S/N 77ZUS-8132-4	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
4320050033942	RING, WEAR, SUCTION HEAD, FOR PUMP MODEL 14MNV24,S/N 77ZUS-8132-4	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
4320050033943	HEAD, STUFFING BOX, FOR PUMP MODEL 14MNV24, S/N 77ZUS-8132-4	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
4320050033966	SLEEVE, SHAFT, FOR PUMP MODEL 8MFV-18, S/N 80TP90624	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
4320050033968	RING, WEAR, CASING, FOR PUMP MODEL 8MFV-18, S/N 80TP90624	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
4320050033973	STUFFING BOX, FOR PUMP MODEL 8MFV-18, S/N 80TP90624	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
4320050034331	CARTRIDGE, END PLATE, PUMP S/N 811-37332-1-1, ST.156	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050034333	COLLAR, THRUST, PUMP MODEL 39RXL, S/N 891A0350	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
4320050034349	SHAFT, PUMP S/N 87311, STA. 22, S/N 1-64723-01-1, STA.690	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050034350	STUFFING BOX, PUMP S/N 87311, STA. 22, S/N 1-64723-01-1, STA.690	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO

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4320050034352	SLEEVE, SHAFT, PUMP S/N 87311, STA. 22	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050034354	GLAND, PUMP S/N 87311, STA. 22	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050034403	COLUMN, INNER, 3 1/2 X 50 5/8 , 316SS, PUMP 32RXL, S/N 771-E-0121/26, WELL 8-10	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
4320050034434	SLEEVE, SHAFT, FOR PUMP SIZE 10 X 8 X 14-U1314B	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050034435	VOLUTE, PUMP 4 X 4 X 12 LC, 6 X 4 X 12LC, MODEL 300	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050034546	ROTATING ASSEMBLY, CURRENT, W/DYNAMIC SEAL, FOR A4X4X12 LC NSWV PUMP, CW ROTAT.	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050034547	ROTATING ASSEMBLY, CURRENT, W/DYNAMIC SEAL, FOR A 4X4X14 NSWV PUMP, CW ROTATION	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050034579	RING, WEAR, CASING, PUMP S/N 64869-1, 5, SIZE 36 X 24L, MODEL WSHDA(9800)	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050034583	SLEEVE, SHAFT, PUMP S/N 64869-1, 5, SIZE 36 X 24L, MODEL WSHDA(9800)	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050035115	SHAFT, PUMP	WASD1	PATTERSO		EA			YES	NO	NO	NO	NO
4320050035314	COVER, SUCTION, PUMP S/N 791-31800-1-2, 12 X 10 X21, 21 DIAM.	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050035340	PUMP	WASD1	LIQUID M		EA			YES	NO	NO	NO	NO
4320050035582	RING, CASE WEAR, FOR PUMP MODEL F20D, ITEM 25	WASD1	PATTERSO		EA			YES	NO	NO	NO	NO
4320050035648	CAGE, SEAL, CHEMICAL RECIRCULATION PUMP	WASD1	DURCO		EA			YES	NO	NO	NO	NO
4320050035654	SHAFT, BB STEEL HOOK, CHEMICAL RECIRCULATION PUMP	WASD1	DURCO		EA			YES	NO	NO	NO	NO
4320050035655	SLEEVE, DC 8 WEAR, CHEMICAL RECIRCULATION PUMP	WASD1	DURCO		EA			YES	NO	NO	NO	NO
4320050035657	SHAFT, BBCB 1 PC., CHEMICAL RECIRCULATION PUMP	WASD1	DURCO		EA			YES	NO	NO	NO	NO
4320050035666	SHAFT, BBC8 ONE PC., CHEMICAL RECIRCULATION PUMP	WASD1	DURCO		EA			YES	NO	NO	NO	NO
4320050035670	PUMP, 4 X 3-10H/86 BARE W/CD4MCU WETTED PARTS, DC8 WEAR SLEEVE, 5 STAR 84 SEAL	WASD1	DURCO		EA			YES	NO	NO	NO	NO
4320050035671	PUMP, 6 X 4-10/85 RV BARE W/CD4MCU WETTED PARTS, BBC8 SHAFT, 5 STAR 84 SEAL	WASD1	DURCO		EA			YES	NO	NO	NO	NO
4320050035672	PUMP, 6 X 4-13A/124RV BARE WITH CD4MCU WETTED PARTS, BBC8 SHAFT, 5 STAR 84 SEAL	WASD1	DURCO		EA			YES	NO	NO	NO	NO
4320050035673	PUMP, 3 X 1.5-82/76RV BARE W/CD4MCJ WETTED PARTS,BBC8 SHAFT,5START 84 SEAL	WASD1	DURCO		EA			YES	NO	NO	NO	NO
4320050035760	RING, SLINGER, FOR SAMPLE PUMP MODEL 11 1/2A3-B, S/N 900289	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050035764	SLEEVE, SHAFT, FOR SAMPLE PUMP MODEL 11 1/2A3-B, S/N 900289	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050035765	PLATE, WEAR, ASSEMBLY, FOR SAMPLE PUMP MODEL 11 1/2A3-B, S/N 900289	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050035798	CASING, PUMP S/N 781-22581-11-1 & 2	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050035800	PLATE, WEAR, PUMP S/N 781-22581-11-1 & 2	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050035801	RING, WEAR, PUMP S/N 781-22581-11-1 & 2	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050035803	SHAFT, PUMP S/N 781-22581-22-1 & 2	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050035804	STUFFING BOX, PUMP S/N 781-22581-22-1 & 2	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050035805	CASING, PUMP S/N 781-22581-22-1 & 2	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050035806	COVER, SUCTION, PUMP S/N 781-22581-22-1 & 2	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050035904	VOLUTE, COMPLETE UNIT, PUMP MODEL 14A2-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050035905	CASING, COMPLETE, PUMP MODEL 13A2-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050035940	BODY, PUMP	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050036013	SLEEVE, SHAFT, EFFLUENT PUMPS MODEL 72 X 48 TYPE WCA, S/N 0842-7810 THRU 7813	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050036096	VOLUTE, FOR PUMP MODEL T6A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050036098	CASING, PUMP S/N 76119601-1-1, SIZE 6 X4 X 10 LC	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050037633	SHEARPELLER, FOR ITT AC PUMP MODEL 100	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050039389	PUMP, SIZE 125A, MODEL 042604100801, SAME AS S/N 25642,FOR POLY.SYS.@DEWAT.BLDG	WASD1	TUTHILL		EA			YES	NO	NO	NO	NO
4320050040718	KIT, REPAIR, MECHANICAL SHAFT SEAL, CHLORINE BOOSTER PUMPS FOR SOUTH DADE	WASD1	BURKS		KT			YES	NO	NO	NO	NO
4320050040898	CASING, OIL, 88 HP, PUMP MODEL 3300	WASD1	FLYGT		EA			YES	NO	NO	NO	NO
4320050040899	BACKHEAD, PUMP MODEL C5445, FRAME T40, S/N K4C1074256-0, PS 212, PUMPS 1&2	WASD1	FAIRBANK		EA			YES	NO	NO	NO	NO
4320050040900	FRONTHEAD, PUMP MODEL C5445, FRAME T40, S/N K4C1074256-0, PS 212, PUMPS 1&2	WASD1	FAIRBANK		EA			YES	NO	NO	NO	NO
4320050040901	VOLUTE, PUMP MODEL C5445, FRAME T40, S/N K4C1074256-0, PS 212, PUMPS 1&2	WASD1	FAIRBANK		EA			YES	NO	NO	NO	NO
4320050041050	PUMP, CENTRIFUGAL, CW, 24"X20" SSF-H, MO	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050041051	PUMP, CENTRIFUGAL, CW, 30"X24" SSF-H, MO	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050041081	BACKHEAD, PUMP S/N K4B1073249-0, MODEL B5444, SIZE 4"	WASD1	FAIRBANK		EA			YES	NO	NO	NO	NO
4320050041130	SLEEVE, SHAFT, HIGH SERVICE PUMP #5, MODEL 24LNC42, SERIAL # 0109MS001386	WASD1	FLOWSERV		EA			YES	NO	NO	NO	NO
4320050041133	RING, WEAR, CASING, HIGH SERVICE PUMP #5, MODEL 24LNC42, SERIAL # 0109MS001386	WASD1	FLOWSERV		EA			YES	NO	NO	NO	NO
4320050041138	SLEEVE, SHAFT, HIGH SERVICE PUMP # 3 & 4, SIZE 16LNC-28, SERIAL # 0109MS001385	WASD1	FLOWSERV		EA			YES	NO	NO	NO	NO
4320050041141	RING, WEAR, CASING, HIGH SERVICE PUMP #	WASD1	FLOWSERV		EA			YES	NO	NO	NO	NO
4320050041190	SLEEVE, SHAFT, PUMP S/N K3W1070757-0, STA. 595	WASD1	FAIRBANK		EA			YES	NO	NO	NO	NO
4320050041195	GLAND, HALF, PUMP S/N K3W1070757-0, STA. 595	WASD1	FAIRBANK		EA			YES	NO	NO	NO	NO
4320050041197	BACKHEAD, PUMP S/N K3W1070757-0, STA. 595	WASD1	FAIRBANK		EA			YES	NO	NO	NO	NO
4320050041203	FRONTHEAD, PUMP S/N K3W1070757-0, STA. 595	WASD1	FAIRBANK		EA			YES	NO	NO	NO	NO
4320050041204	SHAFT, PUMP S/N K3W1070757-1, STA. 595	WASD1	FAIRBANK		EA			YES	NO	NO	NO	NO
4320050041206	COVER, SUCTION, PUMP S/N 1-64723-01-2, PS 690	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO

Part	Description	Organization	Preferred Manufacturer	Category	OUM	Buyer	Preferred Supplier	Insurance Item	Repairable Spare	Calibration Standard	Prevene Reorders	Track by Asset
4320050041211	GLAND, ASSEMBLY, PUMP S/N 1-64723-01-2, PS 690	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050041223	HOUSING, THRUST BEARING, PUMP S/N M27412-16, MODEL 20EC, PS559	WASD1	MORRIS P		EA			YES	NO	NO	NO	NO
4320050041225	COLLAR, THRUST BEARING, PUMP S/N M27412-16, MODEL 20EC, PS559	WASD1	MORRIS P		EA			YES	NO	NO	NO	NO
4320050041251	DIAPHRAGM, PUMP S3CAH120145PV500DOWD100C	WASD1	PROMINEN		EA			YES	NO	NO	NO	NO
4320050041259	PUMP, SUMP, 304SS, 1/3 HP, 1/115 VOLT, WITH 25 FT POWER CORD	WASD1	EBARA		EA			YES	NO	NO	NO	NO
4320050041260	PUMP, SUMP, 304SS, 1/2 HP, 1/115 VOLT, WITH 25 FT POWER CORD	WASD1	EBARA		EA			YES	NO	NO	NO	NO
4320050041304	PUMP, SUBMERSIBLE, 6", 20 HP, WITH 60 FT CABLE, FOR VARIOUS PUMP STATIONS PSMD	WASD1	EBARA		EA			YES	NO	NO	NO	NO
4320050041305	PUMP, SUBMERSIBLE, 6", 50 HP, WITH 60 FT CABLE (DO NOT REORDER)	WASD1	EBARA		EA			YES	NO	NO	NO	NO
4320050041306	PUMP, SUBMERSIBLE, 6", 60 HP, WITH 60 FT CABLE, FOR VARIOUS PUMP STATIONS PSMD	WASD1	EBARA		EA			YES	NO	NO	NO	NO
4320050041316	VOLUTE, MT, PUMP MODEL 3152	WASD1	FLYGT		EA			YES	NO	NO	NO	NO
4320050041355	SLEEVE, PUMP MODEL 300NSWV, SIZE 8X4X14, PACKING PUMP W/TAPERED BORE DESIGN	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050041372	PUMP, AUTOMATIC CONDENSATE, WITH 115 V AUXILLIARY SAFETY SWITCH	WASD1	HARTELL		EA			YES	NO	NO	NO	NO
4320050041578	PUMP, SUCTION, 4x4x14.5, MODEL 5000, S/N 7933V6656, FOR RECYCLE	WASD1	GOYNE PU		EA			YES	NO	NO	NO	NO
4320050041591	KIT, HYPO PUMP, FOR GAMMA/LGALA0713NPE960WDC1200	WASD1	PROMINEN		KT			YES	NO	NO	NO	NO
4320050041632	BACKHEAD, MODEL B5443, S/N 355732-1, PS 0239 MAIN PUMPS	WASD1	FAIRBANK		EA			YES	NO	NO	NO	NO
4320050041633	GLAND, HALF, INTERLOCKING, MODEL B5443, S/N 355732-1, PS 0239 MAIN PUMPS	WASD1	FAIRBANK		EA			YES	NO	NO	NO	NO
4320050041634	FRONTHEAD, MODEL B5443, S/N 355732-1, PS 0239 MAIN PUMPS	WASD1	FAIRBANK		EA			YES	NO	NO	NO	NO
4320050041643	GLAND, SPLIT, PUMP MODEL 7196, 4x4x12, S/N DP-759171, PS 0510	WASD1	CRANE DE		EA			YES	NO	NO	NO	NO
4320050041649	SHAFT, PUMP, PUMP MODEL 7196, 4x4x12, S/N DP-759171, PS 0510	WASD1	CRANE DE		EA			YES	NO	NO	NO	NO
4330050034244	CLUTCH, CENTRIFUGAL (CATERPILLAR 5308, 4TH ST PUMP STATION)	WASD1	CENTRI-M		EA			YES	NO	NO	NO	NO
4610050034630	KIT, COMPLETE PUMP REPAIR, FOR SERIES 50-200 EVAPORATOR, RECIRCULATION PUMP	WASD1	WALLACE-		KT			YES	NO	NO	NO	NO
4610050034631	KIT, SHAFT SEAL AND SEAT, FOR SERIES 50-200 EVAPORATOR, RECIRCULATION PUMP	WASD1	WALLACE-		KT			YES	NO	NO	NO	NO
4730050033060	PET COCK, LIFT STATION DRY WELL PUMPS	WASD1	FAIRBANK		EA			YES	NO	NO	NO	NO
4730050033550	CLAMP, CAP SCREW, 50C, PUMP S/N 348966, SIZE 2K 6X4-13A-11050	WASD1	DURCO		EA			YES	NO	NO	NO	NO
4730050034461	AIRCOCK, (VENT), FOR 4 X 4 X 12 AC PUMPS MODEL 300	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4930050033539	OILER, TRICO, PUMP S/N 349588, SIZE 10X8X17 & S/N348966, SIZE 2K 6X4-13A-11050	WASD1	DURCO		EA			YES	NO	NO	NO	NO
5305050017924	SCREW, CLAMP BAR, FOR PUMP MODELS T3A3-B, T4A3-B,T6A3-B, T8A3-B, 14A2-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
5305050017927	SCREW, CLAMP BAR, FOR PUMP MODEL 13A2-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
5305050025213	SCREW, CAP, FOR PUMP MODEL # F05-1/3 (04-05 SERIES)	WASD1	AURORA		EA			YES	NO	NO	NO	NO
5305050025514	SCREW, SET, 1/2 X 1/2 SOC HD, SELF LOCKING, LAYNEPUMP # 80531	WASD1	LAYNE AN		EA			YES	NO	NO	NO	NO
5305050030019	SCREW, SET SOCKET HEAD, CP POINT, 1/2 -13 X 3/4 ,18-8 SS, FOR PUMP MOD. 32RXL1,	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
5305050030020	SCREW, SET, CP PT, 1/2 -13 X 1/2 , 18-8 SS, FOR PUMP MODEL 32RXL1, S/N 816-E-110	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
5305050030021	SCREW, SET, CP PT, 3/4 -10 X 3/4 , 18-8 SS, FOR PUMP MODEL 32RXL1, S/N 816-E-110	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
5305050030022	SCREW, SET, CP PT, 1/4 -20 X 1/4 , FOR PUMP MODEL32RXL1, S/N 816-E-1103, WELLS	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
5305050030027	SCREW, CAP, SOCKET HEAD, 3/4 -10 X 2 , FOR PUMP MODEL 32RXL1, S/N 816-E-1103, WE	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
5305050030029	SCREW, CAP, SOCKET HEAD, 3/4 -10X1 3/4 FOR PUMPMODEL 32RXL1, S/N 816-E-1103,	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
5305050030030	SCREW, CAP, HEX HEAD, 7/8 -9 X 4 , FOR PUMP MODEL32RXL1, S/N 816-E-1103, WELLS	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
5305050030033	SCREW, CAP, HEX HEAD, 3/4 -10 X 4 , FOR PUMP MODEL 32RXL1, S/N 816-E-1103, WELLS	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
5305050030981	SCREW, DIE RING, PUMP SIZE 2K, MODEL K, S/N K215995	WASD1	WILFLEY		EA			YES	NO	NO	NO	NO
5305050031126	SCREW, PIN RETAINER, PUMP S/N AS52309, MODEL 1L10H, TYPE CSRX TQ	WASD1	MOYNO PU		EA			YES	NO	NO	NO	NO
5305050031155	SCREW, DRIVE PIN RETAINING, PUMP MODEL 2L8, TYPE CDQ	WASD1	MOYNO PU		EA			YES	NO	NO	NO	NO
5305050034023	SCREW, ALLEN, FOR 3127 FLYGT PUMP (METRIC)	WASD1	FLYGT		EA			YES	NO	NO	NO	NO
5305050034353	SCREW, SET, SLEEVE, PUMP S/N 87311, STA. 22	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
5306050023133	BOLT, ASSY, FOR PUMP MODEL 413, S/N 84-12607, L.H. ROTATION, SIZE 6X8X15	WASD1	AURORA		EA			YES	NO	NO	NO	NO
5306050030026	BOLT, HEX HEAD, 3/4 -10 X 3 1/2 , FOR PUMP MODEL 32RXL1, S/N 816-E-1103, WELLS 2	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
5306050030037	BOLT, 3/4 - 10X2 1/2 , 18-8SS, FOR PUMP MODEL 32RXL1, S/N 816-E-1103, WELLS 25-	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
5306050030991	BOLT, RUNNER, PUMP SIZE K1.5 S/N K118410, SIZE K2 S/N K215995, DRWG#K779MS	WASD1	WILFLEY		EA			YES	NO	NO	NO	NO
5307050030023	STUD, 1/2 -13 X 2 , 18-8 SS, FOR PUMP MODEL 32RXL1, S/N 816-E-1103, WELLS 25-26-	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
5307050030028	STUD, 3/4 -10 X 3 3/4 , 18-8 SS, FOR PUMP MODEL 32RXL1, S/N 816-E-1103, WELLS 25	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
5307050030034	STUD, 3/4 -10 X 3 1/2, 18-8 SS, FOR PUMP MODEL 32RXL1, S/N 816-E-1103, WELLS 25-	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
5310050006818	NUT, P.P. #3 H.S. PUMP	WASD1	EDISON-M		EA			YES	NO	NO	NO	NO
5310050006819	NUT, P.P. #3 H.S. PUMP	WASD1	EDISON-M		EA			YES	NO	NO	NO	NO
5310050006820	SLEEVE, P.P. #3 H.S. PUMP	WASD1	EDISON-M		EA			YES	NO	NO	NO	NO
5310050012409	LOCKNUT, PUMP S/N M25252, M25864, M26297, M26807, MODEL 1JC11	WASD1	MORRIS P		EA			YES	NO	NO	NO	NO
5310050012410	NUT, PUMP S/N M22155, PUMP MODEL 2RX	WASD1	MORRIS P		EA			YES	NO	NO	NO	NO
5310050012414	WASHER, LOCK, PUMP S/N M25252, M25864, M26297, M26807, MODEL 1JC11	WASD1	MORRIS P		EA			YES	NO	NO	NO	NO
5310050012415	WASHER, LOCK, PUMP S/N M22155, PUMP MODEL 2RX	WASD1	MORRIS P		EA			YES	NO	NO	NO	NO
5310050013429	LOCKNUT, THRUST BEARING, FOR PUMP MDOEL 10MF21	WASD1	WORTHING		EA			YES	NO	NO	NO	NO

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5310050013430	NUT, BEARING LOCK, FOR PUMP MODEL 10MF21	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
5310050013431	WASHER, THRUST BEARING LOCK, FOR PUMP MODEL 10MF21	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
5310050013434	WASHER, THRUST BEARING, FOR PUMP MODEL 10MF21, SIZE 14	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
5310050013485	NUT, ITEM 16, PUMP S/N 1543846, SIZE 20-LCS-4 VOLUTE, ENGINE S/N V03451, SW #5 M	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
5310050013675	LOCKNUT, BEARING, PUMP TYPE ETA 80-250, S/N 112933-491 HEAT EXCHANGER PUMP, HO	WASD1	CARVER P		EA			YES	NO	NO	NO	NO
5310050013676	WASHER, BEARING LOCKNUT, FOR PUMP TYPE ETA 80-250, S/N 112933-491 HEAT EXCHANGER	WASD1	CARVER P		EA			YES	NO	NO	NO	NO
5310050025245	NUT, FOR PUMP MODELS 114, 115 & 116, TYPE F4S	WASD1	AURORA		EA			YES	NO	NO	NO	NO
5310050025531	NUT, SELF LOCKING, FOR CL-302 VACUUM PUMP TEST NO. 83U-1688	WASD1	NASH		EA			YES	NO	NO	NO	NO
5310050025539	WASHER, BEARING LOCK, FOR CL-302 VACUUM PUMP TESTNO. 83U-1688	WASD1	NASH		EA			YES	NO	NO	NO	NO
5310050025542	LOCKNUT, BEARING, FOR CL-302 VACUUM PUMP TEST NO.83U-1688	WASD1	NASH		EA			YES	NO	NO	NO	NO
5310050029068	NUT, CHECK, FOR DOUBLE SUCTION PUMP S/N 255209, SIZE 10 (E PUMP)	WASD1	TRANSAM-		EA			YES	NO	NO	NO	NO
5310050029069	LOCKNUT, FOR DOUBLE SUCTION PUMP S/N 255209, SIZE10 (E PUMP)	WASD1	TRANSAM-		EA			YES	NO	NO	NO	NO
5310050029126	LOCKNUT, PUMP S/N 66287, SIZE 20 X 18, M	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
5310050029127	LOCKNUT, PUMP S/N 66287, SIZE 20 X 18, MODEL 214-354-502, TYPE L.S.	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
5310050029128	WASHER, LOCK, PUMP S/N 66287, SIZE 20 X	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
5310050029129	WASHER, LOCK, PUMP S/N 66287, SIZE 20 X 18, MODEL214-354-502, TYPE L.S.	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
5310050029133	NUT, SHAFT SLEEVE, (RIGHT), PUMP S/N 66287, SIZE 20 X 18, MODEL 214-354-502, TYP	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
5310050029134	NUT, SHAFT SLEEVE, (LEFT), PUMP S/N 66287, SIZE 20 X 18, MODEL 214-354-502, TYPE	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
5310050029402	NUT, WASHER, BEARING, PUMP MOD. 5150, S/N 7928V6651-1610, 4 , SIZE 400VB (# 136)	WASD1	GOYNE PU		ST			YES	NO	NO	NO	NO
5310050030024	WASHER, LOCK, 1/2 , 18-8 SS, FOR PUMP MODEL 32RXL1, S/N 816-E-1103, WELLS 25-26-	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
5310050030025	NUT, HEX, 1/2 -13, 18-8SS, FOR PUMP MODEL 32RXL1,S/N 816-E-1103, WELLS 25-26-27	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
5310050030031	NUT, HEX, 7/8 -9, 18-8 SS,FOR PUMP MODEL32RXL1, S/N 816-E-1103, WELLS 25-26-27-2	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
5310050030032	WASHER, LOCK, 7/8 , 18-8 SS, FOR PUMP MODEL 32RXL1, S/N 816-E-1103, WELLS 25-26-	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
5310050030035	NUT, HEX, 3/4 -10, 18-8 SS, FOR PUMP MODEL 32RXL1, S/N 816-E-1103, WELLS 25-26-2	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
5310050030036	WASHER, LOCK, 3/4 , 18-8SS, FOR PUMP MODEL 32RXL1, S/N 816-E-1103, WELLS 25-26-2	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
5310050030058	NUT, PACKING RING, 4 15/16 OD X 3 7/8 ID X 1 1/2 , FOR PUMP MODEL 32RXL1, S/N	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
5310050030059	NUT, TENSION, 5 OD X 2 15/32 ID X 3 LG, FOR PUMP MODEL 32RXL1, S/N 816-E-1103	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
5310050030063	NUT, HEAD SHAFT, BRONZE, 4 5/16 X 2 7/16X 1 5/8, FOR PUMP MODEL 32RXL1, S/N 816-	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
5310050032862	NUT, BEARING, FOR PUMP MODEL 16LNC-35, S/N 1413987, 1 THRU 4 HS PUMPS	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
5310050032863	WASHER, LOCK, FOR PUMP MODEL 16LNC-35, S/N 1413987, 1 THRU 4 HS PUMPS	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
5310050032865	NUT, THRUST BEARING, FOR PUMP MODEL 20LCS-4, S/N 1543846, # 5 HS PUMP	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
5310050032868	NUT, BEARING, FOR PUMP MODEL 24LNC-42, S/N 560009428A, 7 THRU 10 HS PUMPS	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
5310050032869	WASHER, LOCK, BEARING, FOR PUMP MODEL 24LNC-42, S/N 560009428A, 7 THRU 10 HS PUM	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
5310050033361	NUT, SHAFT, CHLORINE BOOSTER PUMP SPLIT CASE 8000SERIES 6X4X12L	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
5310050033547	WASHER, SPHERICAL, PUMP S/N 348966, SIZE 2K 6X4-13A-11050	WASD1	DURCO		EA			YES	NO	NO	NO	NO
5310050035763	WASHER, SPRING CONTROL, FOR SAMPLE PUMP MODEL 11 1/2A3-B, S/N 900289	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
5310050041128	LOCKNUT, BEARING, HIGH SERVICE PUMP #5, MODEL 24LNC42, SERIAL # 0109MS001386	WASD1	FLOWSERV		EA			YES	NO	NO	NO	NO
5310050041129	NUT, SHAFT, HIGH SERVICE PUMP #5, MODEL 24LNC42, SERIAL # 0109MS001386	WASD1	FLOWSERV		EA			YES	NO	NO	NO	NO
5310050041136	LOCKNUT, BEARING, HIGH SERVICE PUMP # 3	WASD1	FLOWSERV		EA			YES	NO	NO	NO	NO
5310050041137	NUT, SHAFT, HIGH SERVICE PUMP # 3 & 4, SIZE 16LNC-28, SERIAL # 0109MS001385	WASD1	FLOWSERV		EA			YES	NO	NO	NO	NO
5310050041139	WASHER, LOCK, BEARING, HIGH SERVICE PUMP	WASD1	FLOWSERV		EA			YES	NO	NO	NO	NO
5310050041650	WASHER, LOCK, PUMP MODEL 7196, 4x4x12, S/N DP-759171, PS 0510	WASD1	CRANE DE		EA			YES	NO	NO	NO	NO
5315010137660	PIN, PUMP MODEL #F05-1/3, #15 AND MODEL #J05BF, S/N 7615302-2	WASD1	AURORA		EA			YES	NO	NO	NO	NO
5315050012272	PIN, WRIST, FOR 11 MARLOW PUMP	WASD1	MARLOW P		EA			YES	NO	NO	NO	NO
5315050017961	KEY, SHAFT, FOR PUMP MODEL T4A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
5315050025527	KEY, ROTOR, FOR CL-302 VACUUM PUMP TEST NO. 83U-1688	WASD1	NASH		EA			YES	NO	NO	NO	NO
5315050025533	KEY, ROTOR, FOR CL-302 VACUUM PUMP TEST NO. 83U-1688	WASD1	NASH		EA			YES	NO	NO	NO	NO
5315050029135	PIN, AND RUBBER BUSHING, (FOR COUPLING), PUMP S/N66287, SIZE 20 X 18, MODEL 214	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
5315050030062	KEY, GIB, 5/8 X 4, FOR PUMP MODEL 32RXL1 S/N 816-E-1103, WELLS 25-26-27-28	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
5315050030067	KEY, GIB, 1/2 SQUARE, WELLS 8-9, PUMP MODEL 32RXL, S/N 771-E-0121/0126	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
5315050032884	PIN, DOWEL, PUMP S/N M22155-57, MODEL 2RX	WASD1	MORRIS P		EA			YES	NO	NO	NO	NO
5315050032885	PIN, TAPER, PUMP S/N M22155-57, MODEL 2RX	WASD1	MORRIS P		EA			YES	NO	NO	NO	NO
5325050034019	GROMMET, LEAD THROUGH, FOR PUMP MODEL 3127, 10	WASD1	FLYGT		EA			YES	NO	NO	NO	NO
5325050034020	GROMMET, SLEEVE, FOR PUMP MODEL 3102	WASD1	FLYGT		EA			YES	NO	NO	NO	NO
5325050034021	GROMMET, CORD, FOR PUMP MODEL 3127 AND 3152	WASD1	FLYGT		EA			YES	NO	NO	NO	NO
5330001719110	GASKET, SET OF 4, FOR PUMP MODEL 13A2-B	WASD1	GORMAN-R		ST			YES	NO	NO	NO	NO
5330002958811	O-RING, FOR DIAPHRAGM PUMP A-747	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
5330003535202	GASKET, VOLUTE, FOR PUMP MODEL 12D-13, S/N 756206	WASD1	GORMAN-R		ST			YES	NO	NO	NO	NO

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5330005941082	GASKET, FOR PUMP MODEL 13A2-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
5330007727196	GASKET, FOR PUMP MODELS 14A2-B, 14C2VH4D	WASD1	GORMAN-R		ST			YES	NO	NO	NO	NO
5330008190980	GASKET, PUMP MODEL # F05-1/3	WASD1	AURORA		EA			YES	NO	NO	NO	NO
5330008889212	GASKET, FOR PUMP MODEL 14A2-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
5330009318688	GASKET, COVER PLATE, FOR PUMP MODELS T3A3-B, T4A3-B, T6A3-B, T8A3-B, 14A2-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
5330009834217	SEAL, OIL, (NAT. 457349) WORTHINGTON PUMP, SINGLELIP	WASD1	CR INDUS		EA			YES	NO	NO	NO	NO
5330010109802	O-RING, FOR PUMP MODEL T3A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
5330010111566	GASKET, FOR PUMP MODELS T3A3-B, T4A3-B, T6A3-B, T8A3-B, 14A2-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
5330010111567	GASKET, FOR PUMP MODEL T3A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
5330010111568	GASKET, SUCTION FLANGE, FOR PUMP MODEL T3A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
5330010841290	GASKET, FOR PUMP MODEL 413, S/N 84-12607-1, L.H. ROTATION, SIZE 6X8X15	WASD1	AURORA		EA			YES	NO	NO	NO	NO
5330011605732	SEAL, OIL, (NATIONAL 327303) WORTHINGTON PUMP, SINGLE LIP	WASD1	CR INDUS		EA			YES	NO	NO	NO	NO
5330050012291	GASKET, MOLDED 456, FOR MARLOW PLUNGER PUMP MODEL HPE1142	WASD1	MARLOW P		EA			YES	NO	NO	NO	NO
5330050012308	GASKET, FOR MARLOW 11 PUMP	WASD1	MARLOW P		EA			YES	NO	NO	NO	NO
5330050012348	SEAL, RING, 11"x12"x2"x2 3/4", SLUDGE PUMP MODEL HPE1142, S/N 67, SET=5	WASD1	MARLOW P		ST			YES	NO	NO	NO	NO
5330050012365	SEAL, GREASE, (MORRIS PUMP 9241095058) PUMP S/N M26261, M26260, SIZE 14X12	WASD1	JM CLIPP		EA			YES	NO	NO	NO	NO
5330050012366	SEAL, GREASE, (MORRIS PUMP 9241111070) PUMP S/N M26260, M26261, SIZE 14X12	WASD1	JM CLIPP		EA			YES	NO	NO	NO	NO
5330050012367	SEAL, GREASE, (MORRIS PUMP 9241070035, PUMP S/N M26260, M26261, M26259 SZ 14X12	WASD1	JM CLIPP		EA			YES	NO	NO	NO	NO
5330050012381	RETAINER, PUMP S/N M25252, M25864, M26297, M26807, SIZE, MODEL 1JC11	WASD1	MORRIS P		EA			YES	NO	NO	NO	NO
5330050012388	GASKET, PUMP S/N M25252, M25864, M26297, M26807, MODEL 1JC11SPD, 049751G0305115	WASD1	MORRIS P		EA			YES	NO	NO	NO	NO
5330050012392	RETAINER, PUMP S/N M22155, SIZE, MODEL 2RX	WASD1	MORRIS P		EA			YES	NO	NO	NO	NO
5330050012408	O-RING, SEAL, PUMP S/N M25252, M25864, M26297, M2680, SIZE, MODEL 1JC11,	WASD1	MORRIS P		EA			YES	NO	NO	NO	NO
5330050012412	SEAL, OIL (MORRIS PUMP 9241048021)	WASD1	JM CLIPP		EA			YES	NO	NO	NO	NO
5330050012518	GASKET, STUFFING BOX, PUMP S/N K2B4536CW, SIZE 8 X 5, MODEL 5413A, STA. 639	WASD1	FAIRBANK		EA			YES	NO	NO	NO	NO
5330050013446	SEAL, RING, OUTBOARD, (WORTHINGTON 8449 ITM# 49) FOR PUMP MODEL 10MF21	WASD1	CR INDUS		EA			YES	NO	NO	NO	NO
5330050013448	RETAINER, GREASE, OUTBOARD, FOR PUMP MODEL 10MF21	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
5330050013449	RETAINER, GREASE, OUTBOARD, FOR PUMP MODEL 10MF21	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
5330050013450	RETAINER, GREASE, INBOARD, FOR PUMP MODEL 10MF21	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
5330050013459	O-RING, FOR PUMP MODEL 10MF21	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
5330050013460	O-RING, FOR PUMP MODEL 10MF21	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
5330050013491	GASKET, CASING, 4 SHEET FORM, MUST BE CUT, PUMP MOD. 10MF21,SN.80TP90567,FRAME7	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
5330050013502	O-RING, SLEEVE, PUMP S/N 791-31932-4-1, 791-31932-5-1, SIZE 4 X 4 X 14, MODEL 30	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
5330050013685	GLAND, GASKET SEAL, FOR PUMP TYPE ETA 80-250, S/N112933-491 HEAT EXCHANGER PUMP	WASD1	CARVER P		EA			YES	NO	NO	NO	NO
5330050014274	O-RING, FOR TYPE 24KXL, S/N 279744, WELL FIELD PUMPS	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
5330050014686	GASKET, FOLLOWER PLATE, RUBBER, PUMP K2, S/N K215995	WASD1	WILFLEY		EA			YES	NO	NO	NO	NO
5330050014690	GASKET, RUNNER, PUMP SIZE 2K, S/N K21662, DRWG#K372 RUB (NO SUBSTITUTIONS)	WASD1	WILFLEY		EA			YES	NO	NO	NO	NO
5330050014696	SEAL, OIL, SINGLE LIP, WILFLEY PUMP (NATIONAL 471141)	WASD1	CR INDUS		EA			YES	NO	NO	NO	NO
5330050014698	SEAL, OIL, SINGLE LIP, WILFLEY PUMP	WASD1	CR INDUS		EA			YES	NO	NO	NO	NO
5330050014699	SEAL, OIL, SINGLE LIP, WILFLEY PUMP (GARLOCK 50427, NATIONAL 470954)	WASD1	CR INDUS		EA			YES	NO	NO	NO	NO
5330050014841	SEAL, OIL, S/N 87414-15, PUMP 14 NATIONAL 450374(KROGH ITEM 33)	WASD1	NATIONAL		EA			YES	NO	NO	NO	NO
5330050014844	GASKET, SEAL, S/N 87414-15, PUMP 14 MODEL #NCC	WASD1	KROGH		EA			YES	NO	NO	NO	NO
5330050014846	SEAL, LANTERN, S/N 87414-15, PUMP 14 MODEL #NCC	WASD1	KROGH		EA			YES	NO	NO	NO	NO
5330050014875	GASKET, S/N 87414-15, PUMP #14 MODEL #NCC	WASD1	KROGH		EA			YES	NO	NO	NO	NO
5330050017865	GASKET, FOR PUMP MODEL T4A3-B, T6A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
5330050017876	GASKET, SUCTION FLANGE, FOR PUMP MODEL T4A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
5330050017897	GASKET, SEAL PLATE, FOR PUMP MODEL T8A3-B, T4B3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
5330050017900	GASKET, BEARING CAP, FOR PUMP MODEL T8A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
5330050017905	SEAL, ASSEMBLY, FOR PUMP MODEL T8A3-B, T4B3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
5330050017918	GASKET, FOR PUMP MODEL T4A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
5330050017951	O-RING, FOR PUMP MODELS T4A3-B, T8A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
5330050017952	O-RING, FOR PUMP MODEL T6A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
5330050017953	O-RING, BEARING HOUSING, FOR PUMP MODEL T8A3-B, T10A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
5330050017954	O-RING, FOR PUMP MODEL T8A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
5330050017955	O-RING, FOR PUMP MODELS T3A3-B, T4A3-B, T6A3-B, T8A3-B, 14A2-B, S-2088	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
5330050017968	O-RING, SEAL PLATE, FOR PUMP MODEL T4A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
5330050017969	O-RING, SHAFT SLEEVE, FOR PUMP MODEL T8A3-B, T4B3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
5330050023136	GASKET, FOR PUMP MODEL 413, S/N 84-12607-1, L.H. ROTATION, SIZE 6X8X15	WASD1	AURORA		EA			YES	NO	NO	NO	NO
5330050023137	GASKET, FOR PUMP MODEL 413, S/N 84-12607-1, L.H. ROTATION, SIZE 6X8X15	WASD1	AURORA		EA			YES	NO	NO	NO	NO

Part	Description	Organization	Preferred Manufacturer	Category	OUM	Buyer	Preferred Supplier	Insurance Item	Repairable Spare	Calibration Standard	Prevene Reorders	Track by Asset
5330050024636	SEAL, OIL, SINGLE LIP (AURORA PUMP 712-632-9653, NATIONAL 450543)	WASD1	CR INDUS		EA			YES	NO	NO	NO	NO
5330050024819	SEAL, OIL, SINGLE LIP, WORTHINGTON HIGH SVC PUMP (NATIONAL 415935)	WASD1	CR INDUS		EA			YES	NO	NO	NO	NO
5330050025284	GASKET, SLINGER, FOR PUMP MODELS 114, 115 & 116	WASD1	AURORA		EA			YES	NO	NO	NO	NO
5330050025484	SEAL, SHAFTENED OUTSIDE, FOR MTH TURBOFLEX PUMP MOD#1421A,(TURBOFLEX 12&12.5)	WASD1	TURBOFLE		ST			YES	NO	NO	NO	NO
5330050025519	RACKING, FOR CL-302 VACUUM PUMP TEST NO. 83U-1688	WASD1	NASH		EA			YES	NO	NO	NO	NO
5330050025524	GASKET, BODY, FOR CL-302 VACUUM PUMP TEST NO. 83U-1688	WASD1	NASH		EA			YES	NO	NO	NO	NO
5330050025525	GASKET, CONE, FOR CL-302 VACUUM PUMP TEST NO. 83U-1688	WASD1	NASH		EA			YES	NO	NO	NO	NO
5330050025528	GASKET, OUTER CAP, FOR CL-302 VACUUM PUMP TEST NO. 83U-1688	WASD1	NASH		EA			YES	NO	NO	NO	NO
5330050025532	GASKET, BEARING, FOR CL-302, VACUUM PUMP TEST NO 83U-1688	WASD1	NASH		EA			YES	NO	NO	NO	NO
5330050025534	GASKET, BODY, FOR CL-302 VACUUM PUMP TEST NO. 83U-1688	WASD1	NASH		EA			YES	NO	NO	NO	NO
5330050025540	GASKET, CAP,FOR CL-302 VACUUM PUMP TEST NO. 83U-1688	WASD1	NASH		ST			YES	NO	NO	NO	NO
5330050025585	SEAL, MECHANICAL, (WEINMAN Q26217-Y35) FOR WEINMANPUMP AT 02 PLANT COOLING TOWER	WASD1	PAC-SEAL		EA			YES	NO	NO	NO	NO
5330050028562	SEAL, RING, RUBBER, 14 X 1/4 ROUND, PUMP S/N M26428-6431, MODEL 16EC, STA. 698	WASD1	MORRIS P		EA			YES	NO	NO	NO	NO
5330050028908	SLEEVE, SEAL, FOR WORTHINGTON PUMP	WASD1	CR INDUS		EA			YES	NO	NO	NO	NO
5330050029404	SEAL, OIL, SINGLE LIP (NATIONAL 417262, GOYNE PUMP 8690-17262)	WASD1	CR INDUS		EA			YES	NO	NO	NO	NO
5330050030047	O-RING, TOP CASE TO COLUMN, 23 ID X .139, FOR PUMP MODEL 32RXL1, S/N 816-E-1103	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
5330050030055	O-RING, COLUMN TO HEAD, 25 ID X .139, FOR PUMP MODEL 32RXL1, S/N 816-E-1103, WE	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
5330050030060	O-RING, 3 7/8 X .275 RD., FOR PUMP MODEL 32RXL1, S/N 816-E-1103, WELLS 25-26-2	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
5330050030076	O-RING, GASKET PORT BODY, PUMP S/N 771E-0121/0126, 32 RXL, 20 1/2 ID X 1.39	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
5330050030914	SEAL, OIL, (MARLOW4022600) SINGLE LIP FOR MARLOW PUMPS	WASD1	NATIONAL		EA			YES	NO	NO	NO	NO
5330050030978	SEAL, OIL, END CAP, PUMP SIZE 2K (JM # 10250LUP),MODEL K, (WILFLEY K23A)	WASD1	JM CLIPP		EA			YES	NO	NO	NO	NO
5330050030979	SEAL, OIL, FRONT BEARING CAP, PUMP SIZE 2K (JM # 17670LDS),(WILFLEY K55B)	WASD1	JM CLIPP		EA			YES	NO	NO	NO	NO
5330050031244	GASKET, SET OF 2, FOR PUMP MODEL 16C20-B	WASD1	GORMAN-R		ST			YES	NO	NO	NO	NO
5330050031899	GASKET, COVER PLATE, FOR PUMP MODEL 13D1-17, S/N 538492	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
5330050032718	SEAL, MECHANICAL, (FARBANKS-MORSE HYD1AD8) PUMP S/N K3260539, MODEL 5432-16	WASD1	PAC-SEAL		EA			YES	NO	NO	NO	NO
5330050032819	O-RING, KIT, FLYGT SUBMERSIBLE PUMP, SIZE 3082, 2.5 H.P.	WASD1	SOUTHMEC		KT			YES	NO	NO	NO	NO
5330050032820	O-RING, KIT, FLYGT SUBMERSIBLE PUMP, SIZE 3085, 3.2 H.P.	WASD1	SOUTHMEC		KT			YES	NO	NO	NO	NO
5330050032821	O-RING, KIT, FLYGT SUBMERSIBLE PUMP, SIZE 3101, 5 H.P. OLD STYLE	WASD1	SOUTHMEC		KT			YES	NO	NO	NO	NO
5330050032822	O-RING, KIT, FLYGT SUBMERSIBLE PUMP, SIZE 3102, 5 H.P. NEW STYLE	WASD1	SOUTHMEC		KT			YES	NO	NO	NO	NO
5330050032823	O-RING, KIT, FLYGT SUBMERSIBLE PUMP, SIZE 3126, 9.4 H.P.	WASD1	SOUTHMEC		KT			YES	NO	NO	NO	NO
5330050032824	O-RING, KIT, FLYGT SUBMERSIBLE PUMP, SIZE 3127, 10 H.P.	WASD1	SOUTHMEC		KT			YES	NO	NO	NO	NO
5330050032825	O-RING, KIT, FLYGT SUBMERSIBLE PUMP, SIZE 3151, 18 H.P.	WASD1	SOUTHMEC		KT			YES	NO	NO	NO	NO
5330050032826	O-RING, KIT, FLYGT SUBMERSIBLE PUMP, SIZE 3152, 20 H.P.	WASD1	SOUTHMEC		KT			YES	NO	NO	NO	NO
5330050032827	O-RING, KIT, FLYGT SUBMERSIBLE PUMP, SIZE 3201, 30-47 H.P.	WASD1	SOUTHMEC		KT			YES	NO	NO	NO	NO
5330050032851	GASKET, SEAL END PLATE, FOR PUMP MODEL T10A3-B	WASD1	GORMAN-R		ST			YES	NO	NO	NO	NO
5330050032852	O-RING, BEARING CAP, FOR PUMP MODEL T10A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
5330050032855	SEAL, OIL, INBOARD/OUTBOARD, FOR PUMP MODEL T10A3-B (NATIONAL 450298, NO-SUB)	WASD1	NATIONAL		EA			YES	NO	NO	NO	NO
5330050032859	SEAL, ASSEMBLY, FOR PUMP MODEL T10A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
5330050032870	O-RING, FOR PUMP MODEL 24LNC-42, S/N 560009428A, 7 THRU 10 HS PUMPS	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
5330050033345	GASKET, SUCTION HALF, CHLORINE BOOSTER PUMP SPLITCASE 8000 SERIES 6X4X12L	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
5330050033346	GASKET, DISCHARGE HALF, CHLORINE BOOSTER PUMP SPLIT CASE 8000 SERIES 6X4X12L	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
5330050033352	SEAL, OIL, BEARING, CHLORINE BOOSTER PUMP SPLIT CASE(ALLIS-CHALMERS 3-177-9)	WASD1	CR INDUS		EA			YES	NO	NO	NO	NO
5330050033354	O-RING, STUFFING BOX, CHLORINE BOOSTER PUMP SPLITCASE 8000 SERIES 6X4X12L	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
5330050033355	O-RING, CASING RING, CHLORINE BOOSTER PUMP SPLIT CASE 8000 SERIES 6X4X12L	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
5330050033434	GASKET, SEAL, HOUSING, PUMP S/N K3P1-056450, STATION 29	WASD1	FAIRBANK		EA			YES	NO	NO	NO	NO
5330050033534	GASKET, REAR COVER, PUMP S/N 349588, SIZE 10X8X17	WASD1	DURCO		EA			YES	NO	NO	NO	NO
5330050033536	GASKET, BEARING COVER, PUMP S/N 349588, SIZE 10X8X17	WASD1	DURCO		KT			YES	NO	NO	NO	NO
5330050033538	ADAPTER, O-RING, PUMP S/N 349588, SIZE 10X8X17	WASD1	DURCO		EA			YES	NO	NO	NO	NO
5330050033546	ADAPTER, O-RING, PUMP S/N 348966, SIZE 2K 6X4-13A-11050	WASD1	DURCO		EA			YES	NO	NO	NO	NO
5330050033549	O-RING, BEARING, PUMP S/N 348966, SIZE 2K 6X4-13A-11050	WASD1	DURCO		EA			YES	NO	NO	NO	NO
5330050033553	SEAL, MECHANICAL, FOR DURCO PUMP ANT NORTH AND SOUTH SCRUBBER BUILDING	WASD1	JM CLIPP		EA			YES	NO	NO	NO	NO
5330050033610	O-RING, BEARING RETAINER, PUMP MODEL 12C4B, S/N 721104	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
5330050033625	O-RING, PUMP MODEL JC2X3-11, S/N MM39162-9164	WASD1	MORRIS P		EA			YES	NO	NO	NO	NO
5330050033659	GASKET, CLEAN OUT COVER, FOR PUMP MODEL T10A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
5330050033660	GASKET, SUCTION HEAD, PUMP MODEL T10A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
5330050033665	O-RING, BEARING HOUSING, FOR PUMP MODEL T10A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
5330050033807	SEAL, ASSEMBLY, FOR PUMP MODEL 16C20-B, 10 SERIES, S/N 971367	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
5330050033808	GASKET, DISCHARGE FLANGE, FOR PUMP MODEL 16C20-B,10 SERIES, S/N 971367	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO

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5330050033809	O-RING, FOR PUMP MODEL 16C20-B, 10 SERIES, S/N 971367	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
5330050033812	SEAL, OIL, (GORMAN-RUPP 25227-534) FOR PUMP MODEL16C20-B, 10 SERIES	WASD1	NATIONAL		EA			YES	NO	NO	NO	NO
5330050033814	O-RING, FOR PUMP MODEL 16C20-B, 10 SERIES, S/N 971367	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
5330050033816	GASKET, COVER PLATE, FOR PUMP MODEL 16C20-B, 10 SERIES, S/N 971367	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
5330050033919	SEAL, RING, (WORTHINGTON 007887-00) FOR PUMP MODEL 12MNV-14, S/N 78245-8167-2	WASD1	CR INDUS		EA			YES	NO	NO	NO	NO
5330050033920	SEAL, RING, (WORTHINGTON 7888 ITEM 47) FOR PUMP MODEL 12MNV-14, S/N 78245-8167-2	WASD1	CR INDUS		EA			YES	NO	NO	NO	NO
5330050033921	SEAL, CAGE KIT, PUMP MODEL 12MNV-14, S/N 78245-8167-2	WASD1	WORTHING		KT			YES	NO	NO	NO	NO
5330050033941	SEAL, CAGE KIT, TEFLON, PUMP MODEL 14MNV24, S/N 77ZUS-8132-4	WASD1	WORTHING		KT			YES	NO	NO	NO	NO
5330050033949	SEAL, RING, INBOARD, PUMP MODEL 10MF21 (WORTHINGTON 7889, ITEM 47)	WASD1	CR INDUS		EA			YES	NO	NO	NO	NO
5330050034308	GASKET, COVER, SUCTION, FOR STA. 1073, PUMP MODEL150 10X10X21 LC-N5W	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
5330050034332	SEAL, CARTRIDGE, PUMP S/N 811-37332-1-1, STA. 156	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
5330050034351	SEAL, MECHANICAL, PUMP S/N 87311, STA. 22 (ALLIS CHALMERS 52-237-805-801)	WASD1	U.S. SEA		EA			YES	NO	NO	NO	NO
5330050034355	GASKET, GLAND, PUMP S/N 87311, STA. 22	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
5330050035647	GASKET, REAR COVER, CHEMICAL RECIRCULATION PUMP	WASD1	DURCO		EA			YES	NO	NO	NO	NO
5330050035649	O-RING, BEARING HOUSING, CHEMICAL RECIRCULATION PUMP	WASD1	DURCO		EA			YES	NO	NO	NO	NO
5330050035651	KIT, BEARING COVER GASKET, CHEMICAL RECIRCULATIONPUMP	WASD1	DURCO		KT			YES	NO	NO	NO	NO
5330050035662	GASKET, REAR COVER, CHEMICAL RECIRCULATION PUMP	WASD1	DURCO		EA			YES	NO	NO	NO	NO
5330050035663	PLUG, VENT, CHEMICAL RECIRCULATION PUMP	WASD1	DURCO		EA			YES	NO	NO	NO	NO
5330050035664	O-RING, BEARING CARRIER, CHEMICAL RECIRCULATION PUMP	WASD1	DURCO		EA			YES	NO	NO	NO	NO
5330050035667	SEAL, MECHANICAL, 1 7/8 DIA., 5 STAR, CHEMICAL RECIRC. PUMP(DURCO 1 7/8 SER 85)	WASD1	BW/IP		EA			YES	NO	NO	NO	NO
5330050035668	SEAL, MECHANICAL, 1 3/8 DIA., CHEMICAL RECIRCULATION PUMP (DURCO 1 3/8 SER. 84)	WASD1	BW/IP		EA			YES	NO	NO	NO	NO
5330050035669	SEAL, INBOARD OIL, CHEMICAL RECIRCULATION PUMP (DURCO 1K118)	WASD1	DURCO		EA			YES	NO	NO	NO	NO
5330050035678	SEAL, OIL, CHEMICAL RECIRCULATION PUMP (DURCO 2Z118)	WASD1	DURCO		EA			YES	NO	NO	NO	NO
5330050035679	SEAL, OIL, CHEMICAL RECIRCULATION PUMP (DURCO 2Z129)	WASD1	DURCO		EA			YES	NO	NO	NO	NO
5330050035759	SEAL, MECHANICAL, FOR SAMPLE PUMP MODEL 11 1/2 A3-B, S/N 900289	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
5330050040894	O-RING, GASKET, TOP CASE, 32RXL1, 94-ER-1616, WEST WELL PUMPS 29, 30 ,31	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
5330050040896	O-RING, GASKET, COLUMN, 32RXL1, 94-ER-1616, WEST WELL PUMPS 29, 30 ,31	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
5330050041189	SEAL, TETRA, PUMP S/N K3W1070757-0, STA. 595	WASD1	FAIRBANK		EA			YES	NO	NO	NO	NO
5330050041200	SEAL, LIP, PUMP S/N K3W1070757-0, STA. 595	WASD1	FAIRBANK		EA			YES	NO	NO	NO	NO
5330050041201	SEAL, LIP, PUMP S/N K3W1070757-0, STA. 595	WASD1	FAIRBANK		EA			YES	NO	NO	NO	NO
5330050041202	SEAL, TETRA, PUMP S/N K3W1070757-0, STA. 595	WASD1	FAIRBANK		EA			YES	NO	NO	NO	NO
5330050041205	GASKET, PUMP S/N 1-64723-01-2, PS 690	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
5330050041207	SEAL, BEARING, PUMP S/N 1-64723-01-2, PS 690	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
5330050041210	SEAL, BEARING, PUMP S/N 1-64723-01-2, PS 690	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
5330050041224	RETAINER, THRUST BEARING, PUMP S/N M27412-16, MODEL 20EC, PS559	WASD1	MORRIS P		EA			YES	NO	NO	NO	NO
5330050041226	SEAL, GREASE, PUMP S/N M27412-16, MODEL 20EC, PS559	WASD1	MORRIS P		EA			YES	NO	NO	NO	NO
5330050041594	KIT, DRIVE SEAL GASKET, FOR SIGMA NH3 FLUOR. PUMP	WASD1	PROMINEN		KT			YES	NO	NO	NO	NO
5330050041646	SEAL, OUTBOARD, PUMP MODEL 7196, 4x4x12, S/N DP-759171, PS 0510	WASD1	CRANE DE		EA			YES	NO	NO	NO	NO
5330050041647	SEAL, INBOARD SHAFT, PUMP MODEL 7196, 4x4x12, S/N DP-759171, PS 0510	WASD1	CRANE DE		EA			YES	NO	NO	NO	NO
5330050041997	SEAL, OIL, DOUBLE DIP, 3.5 X 4.501 X 0.468, FOR DYNAMIC SEAL PUMP	WASD1	TIMKEN		EA			YES	NO	NO	NO	NO
5330050041998	SEAL, OIL, FOR HAYWARD GORDON/SLURRY TRANSFER PUMPS (SKF 13812)	WASD1	SKF		EA			YES	NO	NO	NO	NO
5330050041999	SEAL, OIL, FOR HAYWARD GORDON/SLURRY TRANSFER PUMPS (TIMKEN 471762)	WASD1	TIMKEN		EA			YES	NO	NO	NO	NO
5340050014845	CLAMP, GLAND, S/N 87414-15, PUMP 14 MODEL #NCC	WASD1	KROGH		EA			YES	NO	NO	NO	NO
5360050025521	SPRING, TENSION, FOR CL-302 VACUUM PUMP TEST NO.83U-1688	WASD1	NASH		EA			YES	NO	NO	NO	NO
5365001722475	SHIM, ADJUSTING, FOR PUMP MODEL T6A3-B	WASD1	GORMAN-R		ST			YES	NO	NO	NO	NO
5365002816655	RING, RETAINING, FOR PUMP MODELS T3A3-B, T4A3-B, T6A3-B, T8A3-B, 14A2-B, 14A11-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
5365003617355	SHIM, ADJUSTING, FOR PUMP MODELS T8A3-B, 12D-13 (S/N 756206)	WASD1	GORMAN-R		ST			YES	NO	NO	NO	NO
5365004339825	RING, RETAINING, FOR PUMP MOD. 413, S/N 84-12607-1, L.H. ROTATION, SIZE 6X8X15	WASD1	AURORA		EA			YES	NO	NO	NO	NO
5365004673064	PLUG, THREADED, PROTECTOR, PUMP MOD. 413, S/N 84-12607-1, L.H. ROT., SIZE 6X8X15	WASD1	AURORA		EA			YES	NO	NO	NO	NO
5365050013438	RING, SNAP, FOR PUMP MODEL 10MF21	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
5365050013454	SHIM, ADJUSTING, FOR PUMP MODEL 10MF21	WASD1	WORTHING		ST			YES	NO	NO	NO	NO
5365050013455	SHIM, ADJUSTING, FOR PUMP MODEL 10MF21	WASD1	WORTHING		ST			YES	NO	NO	NO	NO
5365050013546	SHIM, .015, PUMP S/N 761-1938 8-1-1, 761-19388-2-1, SIZE 6 X 4 X 12, M	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
5365050013684	RING, SNAP, FOR PUMP TYPE ETA 80-250, S/N 112933-491 HEAT EXCHANGER PUMP HOT CIR	WASD1	CARVER P		EA			YES	NO	NO	NO	NO
5365050014232	RING, RETAINING, #334, FOR B.J. EFF. PUMP 806E1073	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
5365050017945	PLUG, PIPE, VENTED, FOR PUMP MODELS T3A3-B, T4A3-B, T6A3-B, T8A3-B, 14A2-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
5365050017948	RING, RETAINING, FOR PUMP MODEL T8A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
5365050017956	RING, RETAINING, FOR PUMP MODEL 13A2-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO

Part	Description	Organization	Preferred Manufacturer	Category	OUM	Buyer	Preferred Supplier	Insurance Item	Repairable Spare	Calibration Standard	Prevene Reorders	Track by Asset
5365050017957	RING, RETAINING, FOR PUMP MODEL 14A2-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
5365050018447	SHIM, ADJUSTING, .005, PUMP MODEL 300-NSWV	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
5365050018449	SHIM, ADJUSTING, PUMP S/N 801-35149-1-1, & 1-2, &1-3, SIZE 12 X 10 X 21 LC, MOD	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
5365050025451	RING, SNAP, #40, FOR FLOW PUMP, 4 X 4	WASD1	WEMCO		EA			YES	NO	NO	NO	NO
5365050025522	KIT, SHIM, FOR CL-302 VACUUM PUMP TEST NO. 83U-1688	WASD1	NASH		EA			YES	NO	NO	NO	NO
5365050025536	KIT, SHIM, USED IN CAP GASKET, FOR L3/H4 PUMP	WASD1	NASH		EA			YES	NO	NO	NO	NO
5365050029070	SPACER, FOR DOUBLE SUCTION PUMP S/N 255209, SIZE 10 (E PUMP)	WASD1	TRANSAM-		EA			YES	NO	NO	NO	NO
5365050032856	SHIM, SET, ROTATING ASSEMBLY, FOR PUMP MODEL T10A3-B	WASD1	GORMAN-R		ST			YES	NO	NO	NO	NO
5365050032881	SHIM, KIT, PUMP S/N M22155-57, MODEL 2RX	WASD1	MORRIS P		KT			YES	NO	NO	NO	NO
5365050032882	SHIM, PUMP S/N M22155-57, MODEL 2RX	WASD1	MORRIS P		EA			YES	NO	NO	NO	NO
5365050033026	RING, RETAINING, FOR PUMP MODEL T8A3-B, T10A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
5365050033225	RING, SEAL, GARLOCK KLOZURE, PUMP MODEL 28TLO, S/N 26142, WELLS 1-4	WASD1	U.S. PUM		EA			YES	NO	NO	NO	NO
5365050033357	RING, RETAINING, BEARING, CHLORINE BOOSTER PUMP SPLIT CASE 8000 SERIES 6X4X12L	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
5365050033537	SHIM, BEARING, PUMP S/N 349588, SIZE 10X8X17	WASD1	DURCO		KT			YES	NO	NO	NO	NO
5365050033813	SHIM, SET, BEARING, FOR PUMP MODEL 16C20-B, 10 SERIES, S/N 971367	WASD1	GORMAN-R		ST			YES	NO	NO	NO	NO
5365050034580	RING, PACKING, PUMP S/N 64869-1, 5, SIZE 36 X 24L, MODEL WSHDA(9800)	WASD1	ALLIS-CH		BX			YES	NO	NO	NO	NO
5365050035652	SHIM, KIT, CHEMICAL RECIRCULATION PUMP	WASD1	DURCO		KT			YES	NO	NO	NO	NO
5365050035761	SHIM, SET, BEARING, FOR SAMPLE PUMP MODEL 11 1/2A3-B, S/N 900289	WASD1	GORMAN-R		ST			YES	NO	NO	NO	NO
5945050034753	RELAY, ANTI-PUMP, 120 VOLTS (NO SUBSTITUTIONS)	WASD1	SQUARE D		EA			YES	NO	NO	NO	NO
5945050035912	BOARD, CONTROL, ELECTRIC BEARING TEMP. RELAY, 0 -600 DEG. F, EFFLUENT PUMP 5-6	WASD1	WATLOW		EA			YES	NO	NO	NO	NO
5945050041364	RELAY, PUMP STATION CONTROL PANELS	WASD1	MULTITRO		EA			YES	NO	NO	NO	NO
5945050041365	RELAY, PUMP STATION CONTROL PANELS	WASD1	MULTITRO		EA			YES	NO	NO	NO	NO
5950050041361	TRANSFORMER, CURRENT, PUMP STATION CONTROL PANELS	WASD1	MULTITRO		EA			YES	NO	NO	NO	NO
5950050041362	TRANSFORMER, CURRENT, PUMP STATION CONTROL PANELS	WASD1	MULTITRO		EA			YES	NO	NO	NO	NO
5975050041574	ENCLOSURE, WALL MOUNT, NEMA 4X, SCADA PUMP STATION	WASD1	HOFFMAN		EA			YES	NO	NO	NO	NO
5999050006779	START UP, CONTROL AND FIELD DISCHARGE UNIT, 125V FIELD,PP HI SERV PUMPS, 4-5-6	WASD1	DWG		EA			YES	NO	NO	NO	NO
6105050025526	ROTOR, BRONZE, FOR CL-302 VACUUM PUMP TEST NO. 83U-1688	WASD1	NASH		EA			YES	NO	NO	NO	NO
6105050025537	ROTOR, BRONZE, FOR CL-302 VACUUM PUMP TEST NO. 83U-1688	WASD1	NASH		EA			YES	NO	NO	NO	NO
6105050031132	ROTOR, PUMP MODEL 1L10H, TYPE CSR	WASD1	MOYNO PU		EA			YES	NO	NO	NO	NO
6105050031133	STATOR, PUMP S/N P8A388, PUMP MODEL 1L8, TYPE CDQ	WASD1	MOYNO PU		EA			YES	NO	NO	NO	NO
6105050031135	ROTOR, PUMP MODEL FRAME 2L8, TYPE CDQ	WASD1	MOYNO PU		EA			YES	NO	NO	NO	NO
6105050040860	HOUSING, STATOR, PUMP MODEL 3152	WASD1	FLYGT		EA			YES	NO	NO	NO	NO
6135050041366	BATTERY, BACKUP, 12 VOLT, 12 AMP, PUMP STATION CONTROL PANELS	WASD1	MULTITRO		EA			YES	NO	NO	NO	NO
6680050041576	BOARD, CONTROLWARE MICRO 4 PORT COMMUNICATION, SCADA PUMP STATION	WASD1	BRISTOL		EA			YES	NO	NO	NO	NO
6685050036374	CONTROLLER, DUPLEX PUMP, DPC11, 2 TRANSDUCERS (NOSUBSTITUTIONS)	WASD1	DIGITAL		EA			YES	NO	NO	NO	NO
3.02005E+12	DRIVE, GEAR, RATIO 1200:1, S/N 14T-34100, 11 OUTPUT SHAFT, W/MOTOR FRAME CK560	WASD1	FOOTE-JO		EA			YES	NO	NO	NO	NO
3.02005E+12	DRIVE, GEAR, S/N 15T-34100, 11 OUTPUT SHAFT W/MOTOR FRAME CK560, 460V, 3/4 HP	WASD1	FOOTE-JO		EA			YES	NO	NO	NO	NO
3.02005E+12	DRIVE, GEAR, W/MOTOR, 10HP, 267 RPM, W/CLOSED LOOPCONTROL, W/AUTORATOR WASHDOW	WASD1	SHIMPO		EA			YES	NO	NO	NO	NO
3.02005E+12	DRIVE, GEAR, W/MOTOR, 10HP, 125 RPM, W/CLOSED LOOPCONTROL, W/AUTORATOR WASHDOW	WASD1	SHIMPO		EA			YES	NO	NO	NO	NO
3.02005E+12	RETAINER, CONE, GEAR MOTOR NMA2203000CACOA1, S/N 30997-01L07	WASD1	SHIMPO		EA			YES	NO	NO	NO	NO
3.02005E+12	CONE, ASSEMBLY, GEAR MOTOR NMA2203000CACOA1, S/N 30997-01L07	WASD1	SHIMPO		EA			YES	NO	NO	NO	NO
3.02005E+12	DISC, CAM, GEAR MOTOR NMA2203000CACOA1, S/N 30997-01L07	WASD1	SHIMPO		EA			YES	NO	NO	NO	NO
3.03005E+12	BELT, FOR FR 15, S/N 6102440-021, F1760215 MOTOR VARIDRIVE FRAME ASSY	WASD1	U.S. MOT		EA			YES	NO	NO	NO	NO
3.11001E+12	BEARING, SINGLE ROW RADIAL, WIDE TYPE, TWO SHIELDS (REEVES MOTOR DRIVE 079147-06	WASD1	FAFNIR		EA			YES	NO	NO	NO	NO
3.11005E+12	BEARING, INNER OUT PUT SHAFT, F/REEVES MOTOR DRIVE(RELIANCE 411626-01CE)	WASD1	TIMKEN		EA			YES	NO	NO	NO	NO
3.11005E+12	BEARING, TAPER, GEAR MOTOR NMA2203000CACOA1, S/N 30997-01L07	WASD1	SHIMPO		EA			YES	NO	NO	NO	NO
3.11005E+12	BEARING, TAPER, REDUCER, GEAR MOTOR NMA2203000CACOA1, S/N 30997-01L07	WASD1	SHIMPO		EA			YES	NO	NO	NO	NO
3.11005E+12	BEARING, REDUCER, GEAR MOTOR NMA2203000CACOA1, S/N 30997-01L07	WASD1	SHIMPO		EA			YES	NO	NO	NO	NO
3.11005E+12	BEARING, OUTPUT, GEAR MOTOR NMA2203000CACOA1, S/N 30997-01L07	WASD1	SHIMPO		EA			YES	NO	NO	NO	NO
3.12005E+12	BUSHING, MOTOR AND DRIVEN END, FOR FR 15, S/N 6102440-021, F1760215 MOTOR VARIDR	WASD1	U.S. MOT		KT			YES	NO	NO	NO	NO
4.13005E+12	FILTER, FOAM FILTER MATERIAL, 1/2 X 4' X 25', USED ON LIFT PUMP MOTORS STA.348	WASD1	PRECIAIR		RL			YES	NO	NO	NO	NO
4.31005E+12	COMPRESSOR, AIR, W/ELECTRIC 1/8HP MOTOR,115V,W/THERMAL OVERLOAD (NO SUBSTITUTION	WASD1	FLOMATCH		EA			YES	NO	NO	NO	NO
4.31005E+12	VARIDISC, STATIONARY MOTOR, FOR FR 15, S/N 6102440-021, F1760215 VARIDRIVE	WASD1	U.S. MOT		EA			YES	NO	NO	NO	NO
4.31005E+12	SHIFTING, SUB ASSY., VARIDISC, ON FR 15, S/N 6102440-021, F1760215 MOTOR VARIDR.	WASD1	U.S. MOT		EA			YES	NO	NO	NO	NO
4.31005E+12	VARIDISC, ADJUSTABLE DRIVE, FOR FR 15, S/N 6102440-021, F1760215 MOTOR VARIDRIVE	WASD1	U.S. MOT		EA			YES	NO	NO	NO	NO
4.32005E+12	WEDGE, END O LUBE,(MOTOR END), FOR FR 15 S/N 6102440-021, F1760215 VARIDRIVE	WASD1	U.S. MOT		EA			YES	NO	NO	NO	NO
4.32005E+12	COLLAR, SPRING, FOR FR 15, S/N 6102440-021, F1760215 MOTOR VARIDRIVE FRAME ASSY	WASD1	U.S. MOT		EA			YES	NO	NO	NO	NO
4.32005E+12	SHAFT, MOTOR, SS, 2 7/16 X 68 1/8, FOR PUMP MODEL32RXL1, S/N 816-E-1103, WELLS	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO

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4.32005E+12	SHAFT, MOTOR, 2 3/16 X 58 13/16 , WELLS 8-9	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
4.32005E+12	PUMP, MOTOR, CENTRIFUFAL, (C) EVAPORATOR SERIES 50200, DRWG U27885	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
4.32005E+12	PUMP, CENTRIFUGAL SUMP GUARD,ODOR CONTROL UNIT,W/5HP MOTOR & ACCS.S/N 17447/48	WASD1	VANTON		EA			YES	NO	NO	NO	NO
4.32005E+12	PUMP, TSE HAZARDOUS, G05-BF, MARATHON MOTOR 1HP/1725RPM, 90E-56117655080P	WASD1	AURORA		EA			YES	NO	NO	NO	NO
4.61005E+12	SCREW, CONVEYOR, WITHOUT MOTOR & DRIVE, 16 X 14'5-1/2	WASD1	FULLER		EA			YES	NO	NO	NO	NO
4.61005E+12	SCREW, CONVEYOR, WITH OUT MOTOR & DRIVE, 16 X 18'	WASD1	FULLER		EA			YES	NO	NO	NO	NO
4.61005E+12	SCREW, CONVEYOR, WITH OUT MOTOR & DRIVE, 16 X 19'	WASD1	FULLER		EA			YES	NO	NO	NO	NO
5.33005E+12	O-RING, FOR AC MOTOR SER#150839 (NO SUBSTITUTIONS)	WASD1	SIEMEALL		EA			YES	NO	NO	NO	NO
5.33005E+12	SEAL, OIL, FOR REEVES XV MOTOR DRIVE, VARI SPEED(RELIANCE 411627-02BF)	WASD1	NATIONAL		EA			YES	NO	NO	NO	NO
5.33005E+12	SEAL, OIL, INPUT, FOR REEVES XV MOTOR DRIVE, VARISPEED(RELIANCE 411627-02AW)	WASD1	CR INDUS		EA			YES	NO	NO	NO	NO
5.33005E+12	SEAL, OIL, OUTPUT, FOR REEVES XV MOTOR DRIVE, VARI SPEED (RELIANCE 411627-02AT)	WASD1	CR INDUS		EA			YES	NO	NO	NO	NO
5.33005E+12	SEAL, LIP, SHIMPO GEAR MOTOR SIZE 75 & 37	WASD1	CR INDUS		EA			YES	NO	NO	NO	NO
5.33005E+12	SEAL, DOUBLE LIP, SHIMPO GEAR MOTOR SIZE 75 AND 37	WASD1	CR INDUS		EA			YES	NO	NO	NO	NO
5.33005E+12	SEAL, LIP, SHIMPO GEAR MOTOR SIZE 75 & 37	WASD1	CR INDUS		EA			YES	NO	NO	NO	NO
5.33005E+12	SEAL, LIP, SHIMPO GEAR MOTOR SIZE 75 & 37	WASD1	CR INDUS		EA			YES	NO	NO	NO	NO
5.33005E+12	SEAL, LIP, SHIMPO GEAR MOTOR SIZE 75 & 37	WASD1	CR INDUS		EA			YES	NO	NO	NO	NO
5.33005E+12	SEAL, INPUT SHAFT, GEAR MOTOR NMA2203000CACOA1, S/N 30997-01L07	WASD1	CR INDUS		EA			YES	NO	NO	NO	NO
5.33005E+12	SEAL, OUTPUT, OIL, GEAR MOTOR NMA2203000CACOA1, S/N 30997-01L07	WASD1	CR INDUS		EA			YES	NO	NO	NO	NO
5.33005E+12	SEAL, REDUCER, OIL, GEAR MOTOR NMA2203000CACOA1, S/N 30997-01L07	WASD1	CR INDUS		EA			YES	NO	NO	NO	NO
5.33005E+12	O-RING, GEAR MOTOR NMA2203000CACOA1, S/N 30997-01L07	WASD1	SHIMPO		EA			YES	NO	NO	NO	NO
5.33005E+12	O-RING, GEAR MOTOR NMA2203000CACOA1, S/N 30997-01L07	WASD1	SHIMPO		EA			YES	NO	NO	NO	NO
5.33005E+12	GASKET, GEAR MOTOR NMA2203000CACOA1, S/N 30997-01L07	WASD1	SHIMPO		EA			YES	NO	NO	NO	NO
5.33005E+12	GASKET, GEAR MOTOR NMA2203000CACOA1, S/N 30997-01L07	WASD1	SHIMPO		EA			YES	NO	NO	NO	NO
5.36005E+12	SPRING, FOR FR 15, S/N 6102440-021, F1760215 MOTOR VARIDRIVE FRAME ASSY	WASD1	U.S. MOT		EA			YES	NO	NO	NO	NO
5.36505E+12	RING, GEAR MOTOR NMA2203000CACOA1, S/N 30997-01L07	WASD1	SHIMPO		EA			YES	NO	NO	NO	NO
5.36505E+12	SHIM, GEAR MOTOR NMA2203000CACOA1, S/N 30997-01L07	WASD1	SHIMPO		EA			YES	NO	NO	NO	NO
5.90505E+12	RESISTOR, ADJ,AC MOTOR CONTROLLER,TYPE ARC-2AM,4000 OHM,SER# 2-1440-29360,50 WAT	WASD1	SIEMEALL		EA			YES	NO	NO	NO	NO
5.92005E+12	FUSE, 70 AMP,2500 VOLTS,TYPE BALANCE,150 LOCKED ROTOR,MOTOR CONTROL (NO SUBSTITU	WASD1	WESTINGH		EA			YES	NO	NO	NO	NO
5.92505E+12	PROTECTOR, MOTOR CIRCUIT, TYPE-HMCP, 150 AMPS, 600 VOLTS, 3 POLE (NO SUBSTITUTIO	WASD1	WESTINGH		EA			YES	NO	NO	NO	NO
5.92505E+12	BREAKER, TYPE DHP (150DHP500), SER 6506, CONT AMPS1200, MOTOR 125 DC, VACUUM	WASD1	WESTINGH		EA			YES	NO	NO	NO	NO
5.93005E+12	SWITCH, ASSEMBLY, MOTOR CUT-OFF, FOR VCP-W VACUUMCIRCUIT BREAKER (NO SUBSTITUTIO	WASD1	WESTINGH		EA			YES	NO	NO	NO	NO
5.94501E+12	KIT, MOTOR CONTROL PARTS (NO SUBSTITUTIONS)	WASD1	SIEMEALL		KT			YES	NO	NO	NO	NO
5.94505E+12	RELAY, MOTOR MANAGEMENT, P/N 269 PLUS-D/O-111-10C-125VDC (NO SUBSTITUTIONS)	WASD1	MULTILIN		EA			YES	NO	NO	NO	NO
5.97005E+12	KIT, MOTOR #8 - 2 AWG (NO SUBSTITUTIONS)	WASD1	RAYCHEM		KT			YES	NO	NO	NO	NO
5.97005E+12	KIT, MOTOR #1 - 250 MCM, 600 V (NO SUBSTITUTIONS)	WASD1	RAYCHEM		KT			YES	NO	NO	NO	NO
5.97005E+12	KIT, MOTOR, SIZE 250 KCM, 600 VOLT (NO SUBSTITUTIONS)	WASD1	RAYCHEM		KT			YES	NO	NO	NO	NO
5.97505E+12	KIT, SPLICE, MOTOR, #14-4 (NO SUBSTITUTIONS)	WASD1	RAYCHEM		KT			YES	NO	NO	NO	NO
5.97505E+12	KIT, SPLICE, MOTOR, #8-2/0 (NO SUBSTITUTIONS)	WASD1	RAYCHEM		KT			YES	NO	NO	NO	NO
5.97505E+12	KIT, SPLICE, MOTOR, #2-4/0 (NO SUBSTITUTIONS)	WASD1	RAYCHEM		KT			YES	NO	NO	NO	NO
5.97705E+12	BRUSH, CARBON, FOR N0800 INJECTION WELL PUMP MOTORBRUSHES (TOSHIBA MOTOR)	WASD1	CONDO EL		EA			YES	NO	NO	NO	NO
6.105E+12	MOTOR, 5 HP, 1800 RPM, 230/460 VOLT, FRAME 184T, 3 PHASE, TEFC	WASD1	MARATHON		EA			YES	NO	NO	NO	NO
6.105E+12	MOTOR, 1 HP, 1165 RPM, 220/440 VOLT, OLD #8488618, DELCO IF 3100-A, CIRCUL. PUMP	WASD1	ELECTMOT		EA			YES	NO	NO	NO	NO
6.10505E+12	MOTOR, MODULATOR, 120 VOLTS, 13 WATT, FOR BAG SHAKERS PRESTON PLANT, TYPE M	WASD1	MINN-HON		EA			YES	NO	NO	NO	NO
6.10505E+12	MOTOR, CHART DRIVE, 24 HOUR, 120 VOLT AC (NO SUBSTITUTIONS)	WASD1	FISCHER		EA			YES	NO	NO	NO	NO
6.10505E+12	MOTOR, BLOWER, MODEL 17CA1010 (NO SUBSTITUTIONS)	WASD1	FISCHER		EA			YES	NO	NO	NO	NO
6.10505E+12	MOTOR, CHART DRIVE, INDICATOR RECORDER, MOD#51-1310CED, SER #7212A118254, 6/8 ,	WASD1	FISCHER		EA			YES	NO	NO	NO	NO
6.10505E+12	ROTOR, 110 VOLT, TYPE BC, 60 RPM, WITH MOTOR (NO SUBSTITUTIONS)	WASD1	BIF		ST			YES	NO	NO	NO	NO
6.10505E+12	MOTOR, MODEL 764, 60 RPM (NO SUBSTITUTIONS)	WASD1	BRISTOL		EA			YES	NO	NO	NO	NO
6.10505E+12	MOTOR, CHART DRIVE, 120 VOLT, 4 WATTS, 1/24 RPH, 60 CYCLE (SYNCHRON GP383LK)	WASD1	BRISTOL		EA			YES	NO	NO	NO	NO
6.10505E+12	MOTOR, CHART DRIVE, 7-DAY (NO SUBSTITUTIONS)	WASD1	BRISTOL		EA			YES	NO	NO	NO	NO
6.10505E+12	MOTOR (NO SUBSTITUTIONS)	WASD1	ELECTMOT		EA			YES	NO	NO	NO	NO
6.10505E+12	GEARMOTOR, TEFC RIGHT ANGLE 2,216, 1.5HP, 230/460V, 3 PHASE, 60HZ	WASD1	FULLER		EA			YES	NO	NO	NO	NO
6.10505E+12	MOTOR, 1/20 HP, 1625 RPM, 230 VAC, FRAME 48Z, 1 PHASE, 60 CYL (NO SUBSTITUTIONS	WASD1	GE		EA			YES	NO	NO	NO	NO
6.10505E+12	MOUNT, MOTOR, TORQUE ARM (TA6M)	WASD1	DODGE		EA			YES	NO	NO	NO	NO
6.10505E+12	MOTOR, 40HP, 1800RPM, 3/60/230/460, FRAME 324TCV,VSS,TEFC, W/HYD 6282 SHAFT EXT	WASD1	MARATHON		EA			YES	NO	NO	NO	NO
6.10505E+12	MOTOR, 1 HP, 1725 RPM, FRAME 143T, EXP. PROOF, SPEC 35E362-87	WASD1	BALDOR		EA			YES	NO	NO	NO	NO
6.10505E+12	MOTOR, 1 HP, 1725 RPM, 230/460 VOLT, FRA	WASD1	MARATHON		EA			YES	NO	NO	NO	NO
6.10505E+12	MOTOR, 208-230/460V, 56 C FRAME, 1725 RPM, AMPS: 2.1-2/1., 3F:1.25, HOR. SHAFT	WASD1	BALDOR		EA			YES	NO	NO	NO	NO

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6.10505E+12	MOTOR, 1/2 HP, 1725 RPM, 115 VOLT, FRAME 56T, 9.2A (GE C223) (NO SUBSTITUTIONS)	WASD1	MARATHON		EA			YES	NO	NO	NO	NO
6.10505E+12	MOTOR, 3/4 HP, 1725 RPM, 180VDC, 60 HZ, 3.5 A, 1 PHASE, TYPE PM (NO SUBSTITUTION	WASD1	MAGNETEK		EA			YES	NO	NO	NO	NO
6.10505E+12	MOTOR, ELECTRIC ACTUATOR	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
6.10505E+12	MOTOR, 30 HP, 1760 RPM, 230/460 VOLT, FRAME 286T,60HZ,78/39AMP,3PH,TYPE TFS	WASD1	MARATHON		EA			YES	NO	NO	NO	NO
6.10505E+12	MOTOR, PILOT, SPEED CONTROL, DRIVE MODEL MA7503032AAA005	WASD1	SHIMPO		EA			YES	NO	NO	NO	NO
6.10505E+12	MOTOR, 75/33 HP, 1800 RPM, 460V, FR 405VPAZ, TYPE RVE, 3PH, MODEL R2121175	WASD1	U.S. MOT		EA			YES	NO	NO	NO	NO
6.11005E+12	STARTER, MOTOR, SERIES 50 MT, TYPE 400, DELCO REMY, 24V, CW	WASD1	ELECTMOT		EA			YES	NO	NO	NO	NO
6.11005E+12	STARTER, MOTOR, DELCO REMY, SERIES 42 MT, TYPE 400, MODEL 1990367, 24V, CW	WASD1	ELECTMOT		EA			YES	NO	NO	NO	NO
6.68005E+12	INDICATOR, BIN LEVEL, MODEL SG-6, 115V, PULSE SWITCH 12 WATT MOTOR AT 230 V	WASD1	FULLER		EA			YES	NO	NO	NO	NO
6.68505E+12	THERMOMETER, FOR AC MOTOR	WASD1	WEKSLER		EA			YES	NO	NO	NO	NO
6.68505E+12	CONTROLLER, MULTISMART 3 PUMP, W/MOTOR PROTECTION, DNP3 COMM PROTOCOL & FLOW	WASD1	MULTITRO		EA			YES	NO	NO	NO	NO
6.81E+12	ELECTROLYTE, FLOWMATCHER, FOR 125 HP MOTOR, (RESISTIVITY 28.5) (NO SUBSTITUTIONS	WASD1	FLOMATCH		PK			YES	NO	NO	NO	NO
2940050029612	ELEMENT, VALVE, THERMAL, FOR SULLAIR COMPRESSOR, S/N 003-84693, 003-84694	WASD1	SULLAIR		EA			YES	NO	NO	NO	NO
3110050008435	BEARING, FOR 6 GAS BOOSTER REGULATOR VALVE, VAREC #P2-10 (SMT SR-8)	WASD1	SMT		EA			YES	NO	NO	NO	NO
3120050010463	BUSHING, ACETAL STEM, FOR 3 KEYSTONE VALVE	WASD1	KEYSTONE		EA			YES	NO	NO	NO	NO
4310050029604	KIT, REPAIR, MINIMUM PRESSURE, CHECK VALVE, FOR SULLAIR COMP. S/N 003-84693, 694	WASD1	SULLAIR		KT			YES	NO	NO	NO	NO
4310050029605	KIT, REPAIR, VALVE, THERMAL, (GUARD RING), FOR SULLAIR COMP S/N 003-84693, 84694	WASD1	SULLAIR		KT			YES	NO	NO	NO	NO
4310050029607	KIT, REPAIR, FLUID, STOP VALVE, FOR SULLAIR COMPRESSOR, S/N 003-84693, 003-84694	WASD1	SULLAIR		KT			YES	NO	NO	NO	NO
4310050032752	KIT, REPAIR, PILOT VALVE, FOR AIR COMPRESSOR MODEL 10-25, S/N 003-140013	WASD1	SULLAIR		KT			YES	NO	NO	NO	NO
4310050032753	COIL, REPLACEMENT, PILOT VALVE, FOR AIR COMPRESSOR MODEL 10-25, S/N 003-140013	WASD1	SULLAIR		EA			YES	NO	NO	NO	NO
4310050032755	KIT, REPAIR, THERMAL VALVE, FOR AIR COMPRESSOR MODEL 10-25, S/N 003-140013	WASD1	SULLAIR		EA			YES	NO	NO	NO	NO
4310050032756	KIT, REPAIR, AIR INLET VALVE, FOR AIR COMPRESSOR MODEL 10-25, S/N 003-140013	WASD1	SULLAIR		EA			YES	NO	NO	NO	NO
4310050033555	VALVE, INTERSTAGE SAFETY, FOR AIR COMPRESSOR MODEL BRA20, S/N R70A5983 AND 5984	WASD1	CHAMPAIR		EA			YES	NO	NO	NO	NO
4310050033557	VALVE, SET, ON AIR COMPRESSOR MODEL BRA20, S/N R70A5983 AND 5984	WASD1	CHAMPAIR		ST			YES	NO	NO	NO	NO
4310050033570	VALVE, RELEASE, KIT, AIR COMPRESSOR MODEL BRA20, S/N R70A5893 AND 5894	WASD1	CHAMPAIR		KT			YES	NO	NO	NO	NO
4310050040776	KIT, REPAIR, THERMAL VALVE, 100HP COMPRE	WASD1	SULLAIR		KT			YES	NO	NO	NO	NO
4310050040778	KIT, REPAIR, BLOW DOWN VALVE, 100HP COMP	WASD1	SULLAIR		KT			YES	NO	NO	NO	NO
4310050040779	KIT, REPAIR, SOLENOID VALVE, 100HP COMPR	WASD1	SULLAIR		KT			YES	NO	NO	NO	NO
4310050040780	KIT, REPAIR, SOLENOID VALVE COIL, 100HP	WASD1	SULLAIR		KT			YES	NO	NO	NO	NO
4310050040785	KIT, REPAIR, MINIMUM PRESSURE VALVE, 100	WASD1	SULLAIR		KT			YES	NO	NO	NO	NO
4310050040787	KIT, REPAIR, INLET VALVE, 100HP, MODEL LS160-100, H/A, S/N 200703200032	WASD1	SULLAIR		KT			YES	NO	NO	NO	NO
4310050040788	KIT, REPAIR, CHECK VALVE ASSEMBLY, 100HP, MODEL LS160-100, H/A, S/N 200703200032	WASD1	SULLAIR		KT			YES	NO	NO	NO	NO
4320050012329	COVER, VALVE	WASD1	MARLOW P		EA			YES	NO	NO	NO	NO
4320050012330	SEAT, VALVE, FOR MARLOW 11 PUMP MODEL HPE1142, S/N 575104	WASD1	MARLOW P		EA			YES	NO	NO	NO	NO
4320050013703	SHAFT, ROCKER, FOR 6 GAS BOOSTER REGULATOR VALVE	WASD1	VAREC		EA			YES	NO	NO	NO	NO
4320050014694	DIAPHRAGM, CHECK VALVE PACKING, PUMP SIZE 1K S/N K118410, SIZE 2K S/N K215995,	WASD1	WILFLEY		EA			YES	NO	NO	NO	NO
4320050029369	PISTON, FOR ROTO VALVE S/N FJ15047E, ON HIGH SERVICE PUMP # 4-5-6 (DNR - MRM)	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050029578	KIT, REPAIR, FOR CONE VALVE ACTUATOR ON # 8, 9, 10, 24 ROTO VALVE,ORDER #76986-1	WASD1	ALLIS-CH		KT			YES	NO	NO	NO	NO
4320050035035	VALVE, DIAPHRAGM TRI-PURPOSE, RELIEF 30-125 PSI	WASD1	WALCHEM		EA			YES	NO	NO	NO	NO
4610050018825	STRAINER, (C) GAS PRESSURE REDUCING VALVE (PILOTED) SERIES 50-185, S/N AH11313,	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
4610050018838	SEGMENT, FOR SERIES 50-185 GAS PRESSURE REDUCING VALVE	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
4610050022842	GUIDE, FOR AMMONIATOR SERIES 60-215, M/N U25382, S/N AF17599, CTR. VALVE U23457,	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
4610050022843	STEM, FOR AMMONIATOR SERIES 60-215, M/N U25382, S/N AF17599, CTR. VALVE U23457,	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
4610050022913	SHAFT, CONTROL VALVE, FOR AMMONIATOR SERIES 60-215, M/N U25382, S/N AF17599	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
4610050022943	DIAPHRAGM, (C) GAS PRESSURE REDUCING VALVE (PILOTED) SERIES 50-185, S/N AH11313	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
4610050022946	DIAPHRAGM, (C) GAS PRESSURE REDUCING VALVE (PILOTED) SERIES 50-185, S/N AH11313	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
4610050023167	DIAPHRAGM, FOR SHUT OFF VALVE	WASD1	FISCHER		EA			YES	NO	NO	NO	NO
4610050023200	TRIM, CAPSULE, FOR SHUT OFF VALVE	WASD1	FISCHER		EA			YES	NO	NO	NO	NO
4610050024548	VALVE, ROD, FOR 10000 LB. SERIES 800 V. NOTCH CHLORINATOR, S/N V8080, AL16198	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
4610050029825	STEM, UNIT, (C) SERIES 50-185 GAS PRESSURE REDUCING VALVE	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
4610050030818	STEM, CONTROL VALVE FOR AMMONIATOR SYSTEM	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
4610050032501	STOP, COMPRESSION, 3/4 VALVE, (C) EVAPORATOR SERIES 50-200, DRWG U22418	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
4610050032684	PLATE, VACUUM SUPPORT, (C) GAS PRESSURE REDUCING VALVE SERIES 50-185, P/N U28505	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
4610050032686	SEAT, BIAS SPRING, (C) VACUUM REGULATOR U28177, PRESSURE RELIEF VALVE U27550	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
4610050032687	ADJUSTER, (C) VACUUM REGULATOR U28177, PRESSURE RELIEF VALVE U27550	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
4610050032688	CAP, SPRING, (C) VACUUM REGULATOR U28177, PRESSURE RELIEF VALVE U27550	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
4610050032691	DIAPHRAGM, HYPALON, (C) VACUUM REGULATOR U28177, PRESSURE RELIEF VALVE U27550	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
4610050032693	DIAPHRAGM, (C) VACUUM REGULATOR U28177, PRESSURE RELIEF VALVE U27550	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO

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4610050032694	PLATE, BACKING, (C) VACUUM REGULATOR U28177, PRESSURE RELIEF VALVE U27550	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
4610050032698	BAFFLE, (C) VACUUM REGULATOR U28177, PRESSURE RELIEF VALVE U27550	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
4610050032699	FLANGE, W/SEAT UNIT, (C) VACUUM REGULATOR U28177,PRESS. RELIEF VALVE U27550	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
4610050032705	DIAPHRAGM, (C) VACUUM REGULATOR U28177, PRESSURE RELIEF VALVE U27550	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
4610050032706	PLATE, BACKING, BOTTOM, (C) VACUUM REGULATOR U28177, PRESS. RELIEF VALVE U27550	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
4610050032707	PLATE, BACKING, TOP, (C) VACUUM REGULATOR U28177,PRESSURE RELIEF VALVE U27550	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
4610050032709	STEM, (C) VACUUM REGULATOR U28177, PRESSURE RELIEF VALVE U27550	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
4610050033415	HOUSING, VALVE, FOR V-2000 CHLORINATOR	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
4610050033830	DISC, CONTROL VALVE, FOR AMMONIATOR SERIES 60-215	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
4610050035619	LINE, DIFFERENTIAL VALVE	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
4610050039123	DIAPHRAGM, ASSEMBLY, FOR DIFFERENTIAL VALVE	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
4730050013696	CONNECTOR, PLUG, FOR 6 GAS BOOSTER REGULATOR VALVE	WASD1	VAREC		EA			YES	NO	NO	NO	NO
4730050019185	PLUG, VALVE, FOR ROTAMETER V-50, SERIES YY30235	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
4730050041443	CAP, DEBRIS, FOR # 3 VALVE BOX	WASD1	SW SERVI		EA			YES	NO	NO	NO	NO
4730050041444	CAP, DEBRIS, FOR # 2 VALVE BOX	WASD1	SW SERVI		EA			YES	NO	NO	NO	NO
4810000027324	VALVE, 4 WAY SOLENOID, SINGLE SOLENOID, PIPE SIZE1/2 , 120 V(DO NOT SUBSTITUTE)	WASD1	ASCO		EA			YES	NO	NO	NO	NO
4810001221657	VALVE, 2 WAY SOLENOID, N.C., PIPE SIZE 3/4 , 120 VOLT (DO NOT SUBSTITUTE)	WASD1	ASCO		EA			YES	NO	NO	NO	NO
4810001750009	VALVE, 2 WAY SOLENOID, N.C., PIPE SIZE 1 1/2 , 120 VOLT, MANUAL OPERATOR	WASD1	ASCO		EA			YES	NO	NO	NO	NO
4810050003919	VALVE, 4-WAY SOLENOID,SINGLE SOLENOID,PIPE SIZE3/8 ,120V,60CYCLE(NO SUBSTITUTION	WASD1	ASCO		EA			YES	NO	NO	NO	NO
4810050006208	VALVE, 2 WAY SOLENOID, N.C., PIPE SIZE 2 , 120 VOLT (NO SUBSTITUTIONS)	WASD1	ASCO		EA			YES	NO	NO	NO	NO
4810050006212	VALVE, 4 WAY SOLENOID, SINGLE SOLENOID, PIPE SIZE1/4 , 120 VOLT, EXP. PROOF, WA	WASD1	ASCO		EA			YES	NO	NO	NO	NO
4810050006214	VALVE, 4 WAY SOLENOID, SINGLE SOLEN., 3/4 X3/4 , 120V, EXP.PROOF, MANUAL OPER.	WASD1	ASCO		EA			YES	NO	NO	NO	NO
4810050006218	VALVE, 4 WAY SOLENOID, SINGLE SOLENOID, PIPE SIZE1 , 120 VOLT, MANUAL OPERATOR	WASD1	ASCO		EA			YES	NO	NO	NO	NO
4810050006876	VALVE, SOLENOID, PRESTON PLANT GENERATOR	WASD1	ELECTMOT		EA			YES	NO	NO	NO	NO
4810050013701	DIAPHRAGM, FOR 6 GAS BOOSTER REGULATOR VALVE, BUNA N	WASD1	VAREC		EA			YES	NO	NO	NO	NO
4810050024866	VALVE, 4 WAY, SINGLE, SOLENOID, 120 VOLT, PLENUM COLLECTOR, TYPE 2, ZONE 24, OPE	WASD1	FULLER		EA			YES	NO	NO	NO	NO
4810050024881	VALVE, QUICK RESPONSE, DIAPHRAGM, 2 WAY NC SOLENOID, 120 VOLT, 2 1/2 COMPLETE	WASD1	FULLER		EA			YES	NO	NO	NO	NO
4810050024883	DIAPHRAGM, POPPET VALVE ASSEMBLY	WASD1	FULLER		EA			YES	NO	NO	NO	NO
4810050028819	VALVE, MANUAL / AUTOMATIC SELECTOR (CONOFLOW GH10XTHC)	WASD1	BIF		EA			YES	NO	NO	NO	NO
4810050032890	VALVE, 4 WAY, 1/2 NPT, 120 VOLT AC (NO SUBSTITUTIONS)	WASD1	ASCO		EA			YES	NO	NO	NO	NO
4810050033285	VALVE, FOR OXYGEN INST. AIR DRYER (NO SUBSTITUTIONS)	WASD1	SKINNER		EA			YES	NO	NO	NO	NO
4810050033286	VALVE, FOR OXYGEN INST. AIR DRYER (NO SUBSTITUTIONS)	WASD1	SKINNER		EA			YES	NO	NO	NO	NO
4810050033364	VALVE, 1/4 , A86929A HO (NO SUBSTITUTIONS)REPLACES X8314C611924	WASD1	ASCO		EA			YES	NO	NO	NO	NO
4810050033382	VALVE, SOLENOID, 3 WAY, BRASS BODY, 1/8 PIPE SIZE, NC, 3/32 ORIF.SIZE, 120VDC	WASD1	ASCO		EA			YES	NO	NO	NO	NO
4810050033591	VALVE, 1 1/2 , DOUBLE DIAPHR. W/SOLEN. ALUM. BODYNEMA 4, JET COLL, GOYEN CA40TK	WASD1	FULLER		EA			YES	NO	NO	NO	NO
4810050034654	KIT, REBUILD, FOR 2 PIPE VALVE, S/N A708597001 (NO SUBSTITUTIONS)	WASD1	ASCO		KT			YES	NO	NO	NO	NO
4810050035343	VALVE, 1 , 3 WAY, NC, 120 VOLTS, S/N FFP96687	WASD1	ASCO		EA			YES	NO	NO	NO	NO
4810050041055	VALVE, 4 WAY, MANUAL VALVE, 120-VOLTS, 5	WASD1	ASCO		EA			YES	NO	NO	NO	NO
4820050001639	VALVE, BALL METER, STRAIGHT, 1 VALVE, 1 FEMALE PIPE, FOR 1 METER	WASD1	FORD MET		EA			YES	NO	NO	NO	NO
4820050002182	VALVE, GLOBE, WOG 400 PSI, LPG, FEMALE THREAD, RS, 1 1/2	WASD1	REGO		EA			YES	NO	NO	NO	NO
4820050002183	VALVE, GLOBE, WOG 400 PSI, LPG, FEMALE THREAD, RS, 2	WASD1	REGO		EA			YES	NO	NO	NO	NO
4820050002186	VALVE, 3", GLOBE, FLANGE, 300 CHLORINE SERVICE, RS	WASD1	STEEL		EA			YES	NO	NO	NO	NO
4820050002193	VALVE, 2", PLUG, FLANGE, WOG 175 PSI	WASD1	CAST IRO		EA			YES	NO	NO	NO	NO
4820050002195	VALVE, 4", PLUG, FLANGE, WOG 200 PSI, W/O OPERATOR	WASD1	CAST IRO		EA			YES	NO	NO	NO	NO
4820050002208	VALVE, BALL, CHLORINE APPLICATION, 1	WASD1	WHITEY		EA			YES	NO	NO	NO	NO
4820050002234	VALVE, 36", GATE, M.J., DBL-SQ-BOTT	WASD1	CAST IRO		EA			YES	NO	NO	NO	NO
4820050002243	VALVE, 36", BUTTERFLY, M.J., W/H4BC OPERATOR, HENRY PRATT XR70	WASD1	CAST IRO		EA			YES	NO	NO	NO	NO
4820050008048	VALVE, CHECK/SWING, FLANGED, W/SPRING & LEVER ON RIGHT SIDE, 16 LAY LENGTH, 6"	WASD1	MUELLER		EA			YES	NO	NO	NO	NO
4820050008053	VALVE, CHECK, 4", LEVER-AND-WEIGHT, BODY	WASD1	MUELLER		EA			YES	NO	NO	NO	NO
4820050009609	VALVE, FLOAT, MALE PIPE THREAD, 3/4	WASD1	GRAINGER		EA			YES	NO	NO	NO	NO
4820050010433	VALVE, PLUG , SIZE 3, PLUG FACE (AM), BODY C.I.,SOLENOID TO OPEN VALVE W/ENERG	WASD1	DEZURIK		EA			YES	NO	NO	NO	NO
4820050010447	CYLINDER, FOR 3 VALVE	WASD1	KEYSTONE		EA			YES	NO	NO	NO	NO
4820050010454	DISK, 316 SS, FOR 3 VALVE, LIST SM0010	WASD1	KEYSTONE		EA			YES	NO	NO	NO	NO
4820050010456	ADAPTER, SLEEVE, FOR 3 VALVE	WASD1	KEYSTONE		EA			YES	NO	NO	NO	NO
4820050010457	KIT, STAINLESS STEEL DISK FASTENER & O RING SET, FOR 3 VALVE	WASD1	KEYSTONE		KT			YES	NO	NO	NO	NO
4820050010460	STEM, STAINLESS STEEL, FOR 3 KEYSTONE VALVE	WASD1	KEYSTONE		EA			YES	NO	NO	NO	NO
4820050010464	SEAT, FOR 3 VALVE	WASD1	KEYSTONE		EA			YES	NO	NO	NO	NO
4820050012259	VALVE, BALL, 5 1/8 DIA., FOR 11 MARLOW PUMP	WASD1	MARLOW P		EA			YES	NO	NO	NO	NO

Part	Description	Organization	Preferred Manufacturer	Category	OUM	Buyer	Preferred Supplier	Insurance Item	Repairable Spare	Calibration Standard	Prevene Reorders	Track by Asset
4820050013689	ROD, DIAPHRAGM, FOR 6 GAS BOOSTER REGULATOR VALVE	WASD1	VAREC		EA			YES	NO	NO	NO	NO
4820050013690	RING, TRIARC, FOR 6 GAS BOOSTER REGULATOR VALVE	WASD1	VAREC		EA			YES	NO	NO	NO	NO
4820050013691	SWIVEL, FOR 6 GAS BOOSTER REGULATOR VALVE	WASD1	VAREC		EA			YES	NO	NO	NO	NO
4820050013693	TOGGLE END, FOR 6 GAS BOOSTER REGULATOR VALVE	WASD1	VAREC		EA			YES	NO	NO	NO	NO
4820050013700	ARMLOCK, STATIONARY, FOR 6 GAS BOOSTER REGULATOR VALVE	WASD1	VAREC		EA			YES	NO	NO	NO	NO
4820050013704	LEVER, FOR 6 GAS BOOSTER REGULATOR VALVE	WASD1	VAREC		EA			YES	NO	NO	NO	NO
4820050013706	PLATE, DIAPHRAGM, 32 , 6 GAS BOOSTER REGULATOR VALVE	WASD1	VAREC		EA			YES	NO	NO	NO	NO
4820050014742	VALVE, FLAP, FOR MODEL 30MP, S/N 449-666	WASD1	HYDROMAT		EA			YES	NO	NO	NO	NO
4820050017906	CV GASKET, VALVE, FOR PUMP MODEL 14A2-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4820050017915	VALVE, FLAP, FOR PUMP MODEL 13A2-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4820050017916	VALVE, FLAP, W.T., FOR PUMP MODEL 12D-13, S/N 756206	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4820050017942	VALVE, FLAP, FOR PUMP MODEL T8A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4820050017944	VALVE, FLAP, FOR PUMP MODEL T4A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4820050017986	VALVE, FLAP, FOR PUMP MODEL T6A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4820050017987	VALVE, FLAP, FOR PUMP MODEL T3A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4820050017988	VALVE, FLAP, FOR PUMP MODEL T6A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4820050017989	VALVE, FLAP, FOR PUMP MODEL T8A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4820050019121	ADAPTER, VALVE, OUTLET, FOR CHLORINATION SYSTEM	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
4820050019122	ADAPTER, VALVE, INLET, FOR CHLORINATION SYSTEM	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
4820050019267	VALVE, HEADER, 3/4 , FOR CHLORINATION SYSTEM	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
4820050019286	VALVE, FOR CHLORINATOR SERIES A-741	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
4820050022799	KIT, VALVE, W/ASSORTED PARTS, FOR CHLORINATOR SERIES A-741	WASD1	WALLACE-		KT			YES	NO	NO	NO	NO
4820050022836	VALVE, FOR CHLORINATOR SERIES A-741	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
4820050022904	VALVE, CONTROL, FOR AMMONIATOR SERIES 60-215, M/NU25382, S/N AF17599, (200-100/	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
4820050022907	VALVE, BACK PRESSURE, FOR AMMONIATOR SERIES 60-215, M/N U25382, S/N AF17599	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
4820050022910	VALVE, PRESSURE REDUCING, FOR AMMONIATOR SERIES 60-215, BOOK # WCB60215	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
4820050024865	DIAPHRAGM, POPPET VALVE, 14 STEEL, PLENUM COLLECTOR, TYPE 2, ZONE 24, OPEN BOTT	WASD1	FULLER		EA			YES	NO	NO	NO	NO
4820050025415	KIT, DIAPHRAGM SUB ASS'Y, FOR GAS REGULATING VALVE MODEL RV 131-4	WASD1	MAXITROL		KT			YES	NO	NO	NO	NO
4820050025453	VALVE, BY-PASS, ALUMINUM-S/S, F/FIG.440, DWG C 6895-B PRESSURE RELIEF/FLAME TRAP	WASD1	VAREC		EA			YES	NO	NO	NO	NO
4820050025746	VALVE, EXHAUST, #421, FOR 02 PLANT AIR TEX TYPE HL DRYER MODEL#TW200,S/N 80-1476	WASD1	FARGO EQ		EA			YES	NO	NO	NO	NO
4820050025747	VALVE, INLET SWITCHING, #424, F/02 PLANTAIR TEX TYPE HL DRYER MOD#TW200 S/N 80-	WASD1	FARGO EQ		EA			YES	NO	NO	NO	NO
4820050026313	VALVE, 8", PLUG, 11 1/2 F./F.	WASD1	CAST IRO		EA			YES	NO	NO	NO	NO
4820050026453	DISC, FOR 4 CHECK VALVE FIG. 106 LW	WASD1	KENNEVAL		EA			YES	NO	NO	NO	NO
4820050026651	KIT, DIAPHRAGM, FOR SAFETY VALVE #93 S/N 9718-0, ON UNOX-LEL SYSTEM	WASD1	ANDERSON		EA			YES	NO	NO	NO	NO
4820050026884	KIT, DIAPHRAGM, FOR 6 X 8 SAFETY VALVE #93, S/N 9710-0, USED ON UNOX-LEL SYSTEM	WASD1	ANDERSON		EA			YES	NO	NO	NO	NO
4820050027287	VALVE, 3", CHECK/SWING, FLANGE, WITH LEVER AND SPRING	WASD1	CAST IRO		EA			YES	NO	NO	NO	NO
4820050027737	VALVE, 4", PLUG, FLG., 1/4 TURN, WITH 2 SQ. NUT	WASD1	KEYSTONE		EA			YES	NO	NO	NO	NO
4820050027978	SEAT, DISC, 85 DURO BOX, ON APCO AIR CUSHIONED CHECK VALVE #6016	WASD1	APCO		EA			YES	NO	NO	NO	NO
4820050027981	ARM, DISC, DI, ON APCO AIR CUSHIONED CHECK VALVE #6014	WASD1	APCO		EA			YES	NO	NO	NO	NO
4820050027983	SHAFT, PIVOT, SS-17-4PH, 1 5/8, FOR APCO AIR CUSHIONED CHECK VALVE #6014	WASD1	APCO		EA			YES	NO	NO	NO	NO
4820050027988	SLEEVE, 1 1/4 , DISC ARM, BRONZE, FOR APCO AIR CUSHIONED CHECK VALVE #6016	WASD1	APCO		EA			YES	NO	NO	NO	NO
4820050027989	DISC, APCO CHECK VALVE	WASD1	APCO		EA			YES	NO	NO	NO	NO
4820050028055	CUP, LEATHER, FOR 30 CONE VALVE, 16 1/2 X 1/4 THICK BY 1 1/2 H,14 1/2 CENTER	WASD1	CHAPMAN		EA			YES	NO	NO	NO	NO
4820050029004	VALVE, 3-WAY, FOR SDR WORTHINGTON & ENTERPRISE ENGINES	WASD1	SCHRADER		EA			YES	NO	NO	NO	NO
4820050029006	VALVE, 3-WAY, FOR SDR WORTHINGTON & ENTERPRISE ENGINES	WASD1	SCHRADER		EA			YES	NO	NO	NO	NO
4820050029421	TRANSMITTER, VALVE POSITION INDICATOR, MODEL 281-09	WASD1	BIF		EA			YES	NO	NO	NO	NO
4820050029610	VALVE, BLOW DOWN, FOR SULLAIR COMPRESSOR, S/N 003-84693, 003-84694	WASD1	SULLAIR		EA			YES	NO	NO	NO	NO
4820050029667	VALVE, DRAIN RELIEF, FOR V-NOTCH CHLORINATOR SERIES V2100, S/N AN17390	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
4820050029668	VALVE, FLOAT, FOR V-NOTCH CHLORINATOR SERIES V2100, S/N AN17390	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
4820050029670	VALVE, DIFFERENTIAL, FOR V-NOTCH CHLORINATOR SERIES V2100, S/N AN17390	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
4820050029828	PLUG, SIDE, UNIVERSAL, CHECK VALVE FIG. 106LW	WASD1	KENNEVAL		EA			YES	NO	NO	NO	NO
4820050029832	DISC, FOR 6 CHECK VALVE FIG. 106LW	WASD1	KENNEVAL		EA			YES	NO	NO	NO	NO
4820050029835	RING, SEAT, FOR 6 CHECK VALVE FIG. 106LW	WASD1	KENNEVAL		EA			YES	NO	NO	NO	NO
4820050029962	RING, SEAT, FOR 4 CHECK VALVE FIG. 106LW	WASD1	KENNEVAL		EA			YES	NO	NO	NO	NO
4820050030061	VALVE, SIGHT FEED, ANGLE PATTERN, BRASS,1/8 , FORPUMP MODEL 32RXL1, S/N 816-E-1	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
4820050031785	VALVE, FLAP, FOR PUMP MODEL T4A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4820050032498	VALVE, SOLENOID, 1/2 , (C) EVAPORATOR SERIES 50-200	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
4820050032743	SEAT RING, FOR 20 L23 TDCV TILTING DISC CHECK VALVE, CRANE VALVE 412-266-8350	WASD1	CHAPMAN		EA			YES	NO	NO	NO	NO

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4820050032745	CAP, END BEARING, 20 L23 TDCV TILTING DISC CHECKVALVE,CRANE VALVE 412-266-8830	WASD1	CHAPMAN		EA			YES	NO	NO	NO	NO
4820050032747	BUSHING, DISC, ON 20 L23 TDCV TILTING DISC CHECKVALVE,CRANE VALVE 412-266-8350	WASD1	CHAPMAN		EA			YES	NO	NO	NO	NO
4820050032858	VALVE, CHECK, FOR PUMP MODEL T10A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4820050033172	VALVE, PRESSURE VACUUM RELIEF, FOR #4 V-NOTCH 1000 LB CHLORINATOR	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
4820050033191	VALVE, PLUG, 3, FLANGED, ECCENTRIC, CAST IRON BODY, NICKEL SEAT (SEE NOTES)	WASD1	DEZURIK		EA			YES	NO	NO	NO	NO
4820050033192	VALVE, PLUG, 4 , FLANGED, LEVER OPERATED, WITH RS48 PLUG FACING	WASD1	DEZURIK		EA			YES	NO	NO	NO	NO
4820050033344	KIT, REBUILD, (S-91K-C67V) W/DEAD SPACE INSERTS (TGC-91K-67-LD), 1 1/2 VALVE	WASD1	WHITEY		KT			YES	NO	NO	NO	NO
4820050033396	VALVE, PRESSURE RELIEF, FOR V-2000 CHLORINATOR	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
4820050033474	VALVE, RELIEF, ENGINE MODEL 12GT2B	WASD1	SUPERIOR		EA			YES	NO	NO	NO	NO
4820050033479	VALVE, CONTROL, ENGINE MODEL 12GT2B	WASD1	SUPERIOR		EA			YES	NO	NO	NO	NO
4820050033481	BODY, VALVE, ENGINE MODEL 12GT2B	WASD1	SUPERIOR		EA			YES	NO	NO	NO	NO
4820050033482	VALVE, METERING, ENGINE MODEL 12GT2B	WASD1	SUPERIOR		EA			YES	NO	NO	NO	NO
4820050033484	VALVE, PILOT, ENGINE MODEL 12GT2B	WASD1	SUPERIOR		EA			YES	NO	NO	NO	NO
4820050033485	VALVE, CHECK, ENGINE MODEL 12GT2B	WASD1	SUPERIOR		EA			YES	NO	NO	NO	NO
4820050033870	VALVE, VACUUM, DWG 25.050.023.015, FOR V-2000 LB CHLORINATOR	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
4820050033878	VALVE, 1/2 , FOR SUPERIOR GENERATORS (VG210)	WASD1	ROBERTSH		EA			YES	NO	NO	NO	NO
4820050033913	VALVE, BALL, 1 1/2 , FEMALE NPT	WASD1	WHITEY		EA			YES	NO	NO	NO	NO
4820050034271	VALVE, CHECK, ASSEMBLY, CV02K-B, FOR 2K SLURRY PUMPS	WASD1	WILFLEY		EA			YES	NO	NO	NO	NO
4820050034294	DIAPHRAGM, GRADE SS, FOR CL 2 VALVE	WASD1	ITT GRIN		EA			YES	NO	NO	NO	NO
4820050034438	WEIGHT, & LEVER ARM #15, ON M & H 12 CHECK VALVE	WASD1	M AND H		EA			YES	NO	NO	NO	NO
4820050034439	WEIGHT, FOR M & H 12 CHECK VALVE	WASD1	M AND H		EA			YES	NO	NO	NO	NO
4820050034648	VALVE, BALL, TWO WAY	WASD1	WHITEY		EA			YES	NO	NO	NO	NO
4820050034788	VALVE, ASSEMBLY, GAS ADMISSION	WASD1	SUPERIOR		EA			YES	NO	NO	NO	NO
4820050035095	VALVE, CHECK	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4820050035118	ACTUATOR, DOUBLE ACTING, FOR 14 PLUG VALVE, 9045703	WASD1	DEZURIK		EA			YES	NO	NO	NO	NO
4820050035119	CYLINDER, FOR 14 PLUG VALVE 9045703 DOUBLE ACTING ACTUATOR	WASD1	DEZURIK		EA			YES	NO	NO	NO	NO
4820050035299	VALVE, PRESSURE RELIEF, PRESSURE CHECK	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
4820050035301	VALVE, REDUCING, GAS PRESSURE, SERIES 50-185	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
4820050035335	VALVE, CHECK, 4 , MODEL 5050, 350F, S/N Z4625, TECHNO CORP.	WASD1	A.C. COM		EA			YES	NO	NO	NO	NO
4820050035615	VALVE, DRAIN	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
4820050035616	VALVE, TRIMMER	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
4820050035766	VALVE, CHECK, FOR SAMPLE PUMP MODEL 11 1/2A3-B, S/N 900289	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4820050036104	VALVE, PLUG,ECCENTRIC, FLANGED ENDS, WORM GEAR,OPERATOR W/HAND WHEEL 12 X14LL	WASD1	DEZURIK		EA			YES	NO	NO	NO	NO
4820050036105	VALVE, PLUG, ECCENTRIC, FLANGED ENDS, WORM GEAR, OPERATOR W/HAND WHEEL, 14 X17LL	WASD1	DEZURIK		EA			YES	NO	NO	NO	NO
4820050036106	VALVE, PLUG, ECCENTRIC, FLANGED ENDS, WORM GEAR, OPERATOR W/HAND WHEEL, 16 X18LL	WASD1	DEZURIK		EA			YES	NO	NO	NO	NO
4820050036107	VALVE, PLUG, ECCENTRIC, FLANGED ENDS, WORM GEAR, OPERATOR W/HAND WHEEL 18X21.5LL	WASD1	DEZURIK		EA			YES	NO	NO	NO	NO
4820050036108	VALVE, PLUG, ECCENTRIC, FLANGED ENDS, WORM GEAR, OPERATOR W/HAND WHEEL, 20 X24LL	WASD1	DEZURIK		EA			YES	NO	NO	NO	NO
4820050036109	VALVE, PLUG, ECCENTRIC, FLANGED ENDS, WORM GEAR, OPERATOR W/HAND WHEEL, 24 X42LL	WASD1	DEZURIK		EA			YES	NO	NO	NO	NO
4820050036126	VALVE, BALL, 2 , SS, W/VIRGIN TEFLON SEATS & PACKING, LOCKING HANDLES (NO SUBSTI	WASD1	WHITEY		EA			YES	NO	NO	NO	NO
4820050041253	VALVE, COMPLETE, AQUAS AMMONIA	WASD1	PROMINEN		EA			YES	NO	NO	NO	NO
4820050041254	VALVE, COMPLETE, FLUROSILIC ACID	WASD1	PROMINEN		EA			YES	NO	NO	NO	NO
4820050041257	VALVE, COMPLETE, DN20PP, MTMAH12108PCT1A04000	WASD1	PROMINEN		EA			YES	NO	NO	NO	NO
4820050041565	VALVE, 6", 3 WAY, WITH OPERATOR PART NBR. W.O. 355920-1	WASD1	DEZURIK		EA			YES	NO	NO	NO	NO
4820050041592	VALVE, BACK PRESSURE, 1/2" PVC FNPT, HYPO PUMP, FOR GAMMA/LGALA0713NPE960WDC1200	WASD1	PROMINEN		EA			YES	NO	NO	NO	NO
4820050041593	VALVE, PRESSURE RELIEF, 1/2" PVC NPT, HYPO PUMP, FOR GAMMA/LGALA0713NPE960WDC120	WASD1	PROMINEN		EA			YES	NO	NO	NO	NO
4820050041844	VALVE, 42", BUTTERFLY, M.J., W/LIMITORQUE OPERATOR, AND ACCESSORIES, WASD SPECS	WASD1	CAST IRO		EA			YES	NO	NO	NO	NO
4820050041869	VALVE, RELIEF, ADJUSTABLE BPV-SM, 1" NPT, AMMONIA PUMP, 7-150 PSI RANGE	WASD1	PROMINEN		EA			YES	NO	NO	NO	NO
4820050041870	VALVE, BACK PRESSURE, ADJUSTABLE BPV-DM, 1" NPT, AMMONIA PUMP, 7-150 PSI RANGE	WASD1	PROMINEN		EA			YES	NO	NO	NO	NO
4930050014617	BODY, OILER, 1/2 GAL.,COMPLETE,W/ADJUSTABLE SIGHTFORD VALVE,PRESSURE ACTIVATED,	WASD1	U.S. PUM		EA			YES	NO	NO	NO	NO
5120050034443	LEVER, ARM KEY, ON 12 M & H CHECK VALVE, STATION21	WASD1	M AND H		EA			YES	NO	NO	NO	NO
5305050015184	SCREW, SEALING, FOR MODEL 74 B/M, 14811-745NS10, VALVE POSITIONER, RANGE .25-2.5	WASD1	MOORE PR		EA			YES	NO	NO	NO	NO
5305050015199	SCREW, ADJUSTING, FOR MODEL 74 B/M, 14811-745NS VALVE POSITIONER	WASD1	MOORE PR		EA			YES	NO	NO	NO	NO
5305050015200	SCREW, SEALING, FOR MODEL 74 B/M, 14811-745NS VALVE POSITIONER	WASD1	MOORE PR		EA			YES	NO	NO	NO	NO
5305050015203	SCREW, SEALING, FOR MODEL 74 B/M, 14811-745NS VALVE POSITIONER	WASD1	MOORE PR		EA			YES	NO	NO	NO	NO
5305050025412	SCREW, ADJUSTING, FOR GAS REGULATING VALVE MODEL RV 131-4	WASD1	MAXITROL		EA			YES	NO	NO	NO	NO
5305050025413	SPRING, GUIDE, ADJUSTING SCREW, ON GAS REGULATING, VALVE MODEL RV 131-4	WASD1	MAXITROL		EA			YES	NO	NO	NO	NO
5305050033053	SCREW, FOR V-2000 CHLORINATOR TRIMMER VALVE	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
5306050029830	BOLT, DISC, 316 SS, FOR 6 CHECK VALVE FIG. 106LW	WASD1	KENNEVAL		EA			YES	NO	NO	NO	NO

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5306050029964	BOLT, DISC, FOR 4 CHECK VALVE FIG. 106LW	WASD1	KENNEVAL		EA			YES	NO	NO	NO	NO
5307050032690	STUD, ADUSTER, (C) VACUUM REGULATOR U28177, PRESSURE RELIEF VALVE U27550	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
5310050026459	NUT, DISC, FOR 4 CHECK VALVE FIG. 106LW	WASD1	KENNEVAL		EA			YES	NO	NO	NO	NO
5310050029833	NUT, DISC, BRASS, FOR 6 CHECK VALVE FIG. 106LW	WASD1	KENNEVAL		EA			YES	NO	NO	NO	NO
5310050032712	NUT, (C) VACUUM REGULATOR U28177, PRESSURE RELIEFVALVE U27550	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
5310050033184	NUT, CAP, PRESSURE RELIEF VALVE DWG # 50-177-000-080A	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
5310050033829	NUT, CONTROL VALVE, FOR AMMONIATOR SERIES 60-215	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
5315050010426	PIN, PIVOT, 3616 SS, FOR VALMATIC 24 TILTED DISC CHECK VALVE	WASD1	VALMATIC		EA			YES	NO	NO	NO	NO
5315050010431	GASKET, PIVOT PIN COVER, RAYBESTOS #73, FOR VALMATIC 24 TILTED DISC CK VALVE	WASD1	VALMATIC		EA			YES	NO	NO	NO	NO
5315050010469	BUSHING, PIVOT PIN, STEEL, FOR VALMATIC 24 TILTED DISC CK VALVE	WASD1	VALMATIC		EA			YES	NO	NO	NO	NO
5315050013692	PIN, FOR 6 GAS BOOSTER REGULATOR VALVE	WASD1	VAREC		EA			YES	NO	NO	NO	NO
5315050013695	PIN, FOR 6 GAS BOOSTER REGUALTOR VALVE	WASD1	VAREC		EA			YES	NO	NO	NO	NO
5315050017886	PIN, FLAP VALVE, FOR PUMP MODEL T4A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
5315050017889	PIN, FLAP VALVE, FOR PUMP MODEL T6A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
5315050017903	PIN, FLAP VALVE, FOR PUMP MODEL T8A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
5315050027560	PIN, PIVOT, FOR CHAPMAN CHECK VALVE, DRAWING NO.B-56119	WASD1	CHAPMAN		EA			YES	NO	NO	NO	NO
5315050027561	PIN, PIVOT, IND. END, CHAPMAN CHECK VALVE DRAWING#B-56119	WASD1	CHAPMAN		EA			YES	NO	NO	NO	NO
5315050029829	PIN, EXTENDED, HINGE, FOR 6 CHECK VALVE FIG. 106/106A, LS/LW	WASD1	KENNEVAL		EA			YES	NO	NO	NO	NO
5315050029961	PIN, HINGE, EXTENDED, SS, FOR LS/LW CHECK VALVES	WASD1	KENNEVAL		EA			YES	NO	NO	NO	NO
5315050035094	PIN, CHECK VALVE	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
5330050010419	GASKET, BODY, RAYBESTOS #73, ON VALMATIC 12 TILTED DISC CK VALVE	WASD1	VALMATIC		EA			YES	NO	NO	NO	NO
5330050010421	SEAT RING, CENTRIFUGALLY CAST ALUM, FOR VALMATIC 12 TILTED DISC CK VALVE	WASD1	VALMATIC		EA			YES	NO	NO	NO	NO
5330050010422	GASKET, INSPECTION HOLE, RAYBESTOS #73, FOR VALMATIC 12 TILTED DISC CK VALVE	WASD1	VALMATIC		EA			YES	NO	NO	NO	NO
5330050010427	GASKET, BODY, RAYBESTOS #73, ON VALMATIC 24 TILTED DISC CK VALVE	WASD1	VALMATIC		EA			YES	NO	NO	NO	NO
5330050010430	GASKET, INSPECTION HOLE, RAYBESTOS #73, FOR VALMATIC 24 TILTED DISC CK VALVE	WASD1	VALMATIC		EA			YES	NO	NO	NO	NO
5330050010458	PACKING, STEM, BUNA-N, FOR 3 VALVE	WASD1	KEYSTONE		EA			YES	NO	NO	NO	NO
5330050012331	GASKET, VALVE SEAT, FOR MARLOW 11 PUMP	WASD1	MARLOW P		EA			YES	NO	NO	NO	NO
5330050013687	RETAINER, SPRING, FOR 6 GAS BOOSTER REGULATOR VALVE	WASD1	VAREC		EA			YES	NO	NO	NO	NO
5330050013694	GASKET, BONNET, FOR 6 GAS BOOSTER REGULATOR VALVE (OLD P/N B2195-070)	WASD1	VAREC		EA			YES	NO	NO	NO	NO
5330050013698	RETAINER, BEARING, FOR 6 GAS BOOSTER REGULATOR VALVE	WASD1	VAREC		EA			YES	NO	NO	NO	NO
5330050013705	GASKET, BONNET COVER, F/6 GAS BOOSTER REGULATOR VALVE	WASD1	VAREC		EA			YES	NO	NO	NO	NO
5330050013707	GASKET, VALVE BODY, FOR 6 GAS BOOSTER REGULATOR VALVE	WASD1	VAREC		EA			YES	NO	NO	NO	NO
5330050013709	O-RING, FOR 6 GAS BOOSTER REGULATOR VALVE	WASD1	VAREC		EA			YES	NO	NO	NO	NO
5330050015188	O-RING, FOR MODEL 74 B/M, 14811-745NS10, VALVE POSITIONER	WASD1	MOORE PR		EA			YES	NO	NO	NO	NO
5330050015189	O-RING, FOR MODEL 74 B/M, 14811-745NS10, VALVE POSITIONER	WASD1	MOORE PR		EA			YES	NO	NO	NO	NO
5330050015206	O-RING, FOR MODEL 74 B/M, 14811-745NS10, VALVE POSITIONER	WASD1	MOORE PR		EA			YES	NO	NO	NO	NO
5330050018826	GASKET, (C) GAS PRESS. REDUCING VALVE (PILOTED)SERIES 50-185, S/N AH11313, EV	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
5330050018833	GASKET, (C) GAS PRESSURE REDUCING VALVE (PILOTED)SERIES 50-185, S/N AH11313, EV	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
5330050018846	O-RING, (C) GAS PRESSURE REDUCING VALVE (PILOTED)SERIES 50-185, S/N AH11313, EV	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
5330050022941	O-RING, VITON, FOR SERIES 50-185 GAS PRESSURE REDUCING VALVE	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
5330050022944	O-RING, (C) GAS PRESSURE REDUCING VALVE (PILOTED)SERIES 50-185, S/N AH11313, EV	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
5330050024083	RETAINER, AND SEAT UNIT, FOR SERIES 50-185 GAS PRESSURE REDUCING VALVE	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
5330050027320	O-RING, FOR 3 VALVE	WASD1	KEYSTONE		EA			YES	NO	NO	NO	NO
5330050029606	KIT, REPAIR, THERMAL, VALVE, (GASKET), FOR SULLAIR COMP. S/N 003-84693, 84694	WASD1	SULLAIR		KT			YES	NO	NO	NO	NO
5330050029960	GASKET, FOR 4 CHECK VALVE FIG. 106LW	WASD1	KENNEVAL		EA			YES	NO	NO	NO	NO
5330050032692	GASKET, (C) VACUUM REGULATOR U28177, PRESSURE RELIEF VALVE U27550	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
5330050032695	O-RING, (C) VACUUM REGULATOR U28177, PRESSURE RELIEF VALVE U27550	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
5330050032697	RETAINER, (C) SEAT UNIT, FOR VACUUM REGULATOR U28177, PRESS. RELIEF VALVE U27550	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
5330050032700	O-RING, (C) VACUUM REGULATOR U28177, PRESSURE RELIEF VALVE U27550	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
5330050032701	RETAINER, SPRING, (C) VACUUM REGULATOR U28177, PRESSURE RELIEF VALVE U27550	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
5330050032704	GASKET, (C) VACUUM REGULATOR U28177, PRESSURE RELIEF VALVE U27550	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
5330050032708	O-RING, (C) VACUUM REGULATOR U28177, PRESSURE RELIEF VALVE U27550	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
5330050032711	GASKET, (C) VACUUM REGULATOR U28177, PRESSURE RELIEF VALVE U27550	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
5330050032746	GASKET, PIVOT PIN, 20 L23 TDCV TILTING DISC CHECK VALVE, CRANE VALVE 4122668350	WASD1	CHAPMAN		EA			YES	NO	NO	NO	NO
5330050032757	KIT, SEAL, MINIMUM PRESSURE VALVE, FOR AIR COMPRESSOR MODEL 10-25, S/N 003140013	WASD1	SULLAIR		EA			YES	NO	NO	NO	NO
5330050033558	GASKET, VALVE, SET, FOR AIR COMPRESSOR MODEL BRA20, S/N R70A5983 AND 5984	WASD1	CHAMPAIR		ST			YES	NO	NO	NO	NO
5330050034272	O-RING, SLEEVE, CHECK VALVE, ARP225-BUNA, FOR SLURRY PUMPS	WASD1	WILFLEY		EA			YES	NO	NO	NO	NO
5330050034273	O-RING, SLEEVE, CHECK VALVE, MODEL K1.5, S/N 17146, ARP224-BUNA	WASD1	WILFLEY		EA			YES	NO	NO	NO	NO

Part	Description	Organization	Preferred Manufacturer	Category	OUM	Buyer	Preferred Supplier	Insurance Item	Repairable Spare	Calibration Standard	Prevene Reorders	Track by Asset
5330050034440	O-RING, SIDE PLUG # 24, FOR 12 M & H CHECK VALVE- STATION 21	WASD1	M AND H		EA			YES	NO	NO	NO	NO
5330050034441	GASKET, SIDE PLUG, #14, FOR 12 M & H CHECK VALVE- STATION 21	WASD1	M AND H		EA			YES	NO	NO	NO	NO
5330050041252	O-RING, VALVE SEAL	WASD1	PROMINEN		EA			YES	NO	NO	NO	NO
5330050041258	O-RING, VALVE SEAL, 28X35EPDM	WASD1	PROMINEN		EA			YES	NO	NO	NO	NO
5330050041445	WASHER, MAIN VALVE, CLOW MEDALLION	WASD1	CLOW		EA			YES	NO	NO	NO	NO
5340050029831	HINGE, W/KEY WAY, FOR 6" CHECK VALVE 106/106A, LS/LW	WASD1	KENNEVAL		EA			YES	NO	NO	NO	NO
5340050029963	HINGE, W/KEY WAY, FOR 4" CHECK VALVE FIG. 106/106A, LS/LW	WASD1	KENNEVAL		EA			YES	NO	NO	NO	NO
5340050033831	CLAMP, CONTROL VALVE, FOR AMMONIATOR SERIES 60-215	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
5360050015185	SPRING, PLUNGER, FOR MODEL 74 B/M, 14811-745NS10,VALVE POSITIONER, RANGE .25-2.	WASD1	MOORE PR		EA			YES	NO	NO	NO	NO
5360050015201	SPRING, FOR MODEL 74 B/M, 14811-745NS VALVE POSITIONER	WASD1	MOORE PR		EA			YES	NO	NO	NO	NO
5360050015202	SPRING, PLUNGER, FOR MODEL 74 B/M, 14811-745NS VALVE POSITIONER	WASD1	MOORE PR		EA			YES	NO	NO	NO	NO
5360050015205	SPRING, PLUNGER, FOR MODEL 74 B/M, 14811-745NS VALVE POSITIONER	WASD1	MOORE PR		EA			YES	NO	NO	NO	NO
5360050025414	SPRING, FOR MAXITROL REG. CODE BLACK, FOR GAS REGULATING VALVE MODEL RV 131,4	WASD1	MAXITROL		EA			YES	NO	NO	NO	NO
5360050029422	SPRING, ZERO, FOR PNEUMATIC VALVE POSITIONER TRANSMITTER MODEL 281-09	WASD1	BIF		EA			YES	NO	NO	NO	NO
5360050032685	SPRING, BIAS, (C) VACUUM REGULATOR U28177, PRESSURE RELIEF VALVE U27550	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
5360050032689	SPRING, RETURN, (C) VACUUM REGULATOR U28177, PRESSURE RELIEF VALVE U27550	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
5360050032696	SPRING, MAIN, (C) VACUUM REGULATOR U28177, PRESSURE RELIEF VALVE U27550	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
5360050032702	SPRING, RELIEF, (C) VACUUM REGULATOR U28177, PRESSURE RELIEF VALVE U27550	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
5360050032710	SPRING, (C) VACUUM REGULATOR U28177, PRESSURE RELIEF VALVE U27550	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
5360050033884	SPRING, FOR 2 VALVE 85380-E0012 (SUPERIOR GENERATORS)	WASD1	ROBERTSH		EA			YES	NO	NO	NO	NO
5365050010420	SEAT RING, CENTRIFUGALLY CAST ALUM, FOR VALMATIC 12 TILTED DISC CK VALVE	WASD1	VALMATIC		EA			YES	NO	NO	NO	NO
5365050010424	INDICATOR, O-RING, BUNA N 70 DUROMETER, FOR VALMATIC 12 TILTED DISC CK VALVE	WASD1	VALMATIC		EA			YES	NO	NO	NO	NO
5365050010429	SEAT RING, GASKET, RAYBESTOS, ON VALMATIC 24 TILTED DISC CK VALVE	WASD1	VALMATIC		EA			YES	NO	NO	NO	NO
5365050013688	PLUG, STEM ASSY., 6 GAS BOOSTER REGULATOR VALVE	WASD1	VAREC		EA			YES	NO	NO	NO	NO
5365050013697	RING, RETAINER, FOR 6 GAS BOOSTER REGULATOR VALVE	WASD1	VAREC		EA			YES	NO	NO	NO	NO
5365050013702	PLUG, FOR 6 GAS BOOSTER REGULATOR VALVE	WASD1	VAREC		EA			YES	NO	NO	NO	NO
5365050015193	SPACER, FOR MODEL 74 B/M, 14811-745NS VALVE POSITIONER	WASD1	MOORE PR		EA			YES	NO	NO	NO	NO
5365050015195	SPACER, FOR MODEL 74 B/M, 14811-745NS10, VALVE POSITIONER	WASD1	MOORE PR		EA			YES	NO	NO	NO	NO
5935050034442	LEVER, HINGE PIN, #8, FOR 12 M & H CHECK VALVE, STATION 21	WASD1	M AND H		EA			YES	NO	NO	NO	NO
5999050037791	ACTUATOR, QUADRAPOWER, 50 PSI AIR SUPPLY, SOLENOID VALVE TO FIT 12 815W VALVE	WASD1	JAMESBUR		EA			YES	NO	NO	NO	NO
5999050041317	ACTUATOR, ELECTRAULIC, ROTARY CYLINDER, ANALOG INPUT SIGNAL, WELL PADS 1-4 VALVE	WASD1	REXA		EA			YES	NO	NO	NO	NO
6115050033880	KIT, REPAIR, FOR 2 VALVE 85380-E0012 (SUPERIOR GENERATORS)	WASD1	ROBERTSH		KT			YES	NO	NO	NO	NO
6115050033882	PLUG, FOR 2 VALVE 85380-E0012 (SUPERIOR GENERATORS)	WASD1	ROBERTSH		EA			YES	NO	NO	NO	NO
6115050033885	CAGE, FOR 2 VALVE 85380-E0012 (SUPERIOR GENERATORS)	WASD1	ROBERTSH		EA			YES	NO	NO	NO	NO
6680050030275	INDICATOR, SIGHT FLOW, FOR DUOPORT RELIEF MANIFOLD VALVE	WASD1	REGO		EA			YES	NO	NO	NO	NO
6685050015186	PLUNGER, FOR MODEL 74 B/M, 14811-745NS VALVE POSITIONER	WASD1	MOORE PR		EA			YES	NO	NO	NO	NO
6685050015190	GAUGE, 0-160 PSI, FOR MODEL 74 B/M, 14811-745NS10, VALVE POSITIONER	WASD1	MOORE PR		EA			YES	NO	NO	NO	NO
6685050015191	NUT, FOR MODEL 74 B/M, 14811-745NS VALVE POSITIONER	WASD1	MOORE PR		EA			YES	NO	NO	NO	NO
6685050015192	DIAPHRAGM, ASSEMBLY, ON MODEL 74 B/M, 14811-745NSVALVE POSITIONER	WASD1	MOORE PR		EA			YES	NO	NO	NO	NO
6685050015194	RING, DIAPHRAGM, FOR MODEL 74 B/M, 14811-745NS10,VALVE POSITIONER	WASD1	MOORE PR		EA			YES	NO	NO	NO	NO
6685050015196	BEAM, ASSEMBLY, ON MODEL 74 B/M, 14811-745NS VALVE POSITIONER	WASD1	MOORE PR		EA			YES	NO	NO	NO	NO
6685050015197	RING, DIAPHRAGM, FOR MODEL 74 B/M, 14811-745NS10,VALVE POSITIONER	WASD1	MOORE PR		EA			YES	NO	NO	NO	NO
6685050015198	DIAPHRAGM, ASSEMBLY, ON MODEL 74 B/M, 14811-745NSVALVE POSITIONER	WASD1	MOORE PR		EA			YES	NO	NO	NO	NO
6685050015204	PLUNGER, CLEANING, FOR MODEL 74 B/M, 14811-745NS VALVE POSITIONER	WASD1	MOORE PR		EA			YES	NO	NO	NO	NO
6685050015207	POSITIONER, PNEUMATIC, VALVE, RANGE .25-2.5SCFH	WASD1	MOORE PR		EA			YES	NO	NO	NO	NO
6685050018596	POSITIONER, PNEUMATIC, VALVE, H/FR AIR COMPRESSOR, RANGE .25-2.5SCFH (NO SUBSTIT	WASD1	MOORE PR		EA			YES	NO	NO	NO	NO
6685050019275	GAUGE, VACUUM PRESSURE DIAPHRAGM, FOR INJECTOR VALVE MODEL A-452,062, SIZE 3	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
6685050027339	RING, DIAPHRAGM, FOR MODEL 74 B/M, 14811-745NS10,VALVE POSITIONER	WASD1	MOORE PR		EA			YES	NO	NO	NO	NO
6685050032703	UNIT, (C) PRESSURE CHECK VACUUM REGULATOR U28177,PRESS. RELIEF VALVE U27550	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
6685050032713	UNIT, (C) CHECK AND INSERT VACUUM REGULATOR U28177, PRESS. RELIEF VALVE U27550	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
3110050039047	BEARING, MARINE, IMPELLER PUMP	WASD1	THORDON		EA			YES	NO	NO	NO	NO
4320001807860	SLEEVE, IMPELLER, MODEL 114, 115, 116, AND MODEL J05BF, S/N 7615302-2, INTERCHAN	WASD1	AURORA		EA			YES	NO	NO	NO	NO
4320010457932	IMPELLER, FOR PUMP MODEL 114	WASD1	AURORA		EA			YES	NO	NO	NO	NO
4320050012361	IMPELLER, CW, PUMP S/N M26260, M26261, M	WASD1	MORRIS P		EA			YES	NO	NO	NO	NO
4320050012377	IMPELLER, PUMP S/N M22155, PUMP MODEL 2RX	WASD1	MORRIS P		EA			YES	NO	NO	NO	NO
4320050012385	IMPELLER, 6 VANE, 11 DIA., PUMP S/N M25252, M25864, M26297, M26807, SIZE, MODEL	WASD1	MORRIS P		EA			YES	NO	NO	NO	NO
4320050012400	IMPELLER, PUMP S/N	WASD1	MORRIS P		EA			YES	NO	NO	NO	NO
4320050012969	IMPELLER, CCW, 11 1/2 DIA., W/WEAR RING, PUMP S/N K2V1071261, K2V1071261-1, MOD	WASD1	FAIRBANK		EA			YES	NO	NO	NO	NO

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4320050013428	IMPELLER, 19 , FOR PUMP MODEL 10MF21, FRAME #6	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
4320050013474	PLATE, IMPELLER COVER, FOR PUMP MODEL 10MF21, 8MFV-18	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
4320050013674	IMPELLER, FOR PUMP TYPE ETA 80-250, S/N 112933-491 HEAT EXCHANGE PUMP HOT CIRC.	WASD1	CARVER P		EA			YES	NO	NO	NO	NO
4320050013748	IMPELLER, R.H. ROTATION, PUMP MODEL VOSOM-4, S/N FA-11-8360B-1455	WASD1	CHICAPUM		EA			YES	NO	NO	NO	NO
4320050013998	IMPELLER, 9.4 H.P.	WASD1	FLYGT		EA			YES	NO	NO	NO	NO
4320050014250	IMPELLER, 20 7/8 DIA., FOR EFFLUENT PUMP 806E1073	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
4320050014261	IMPELLER, PUMP S/N 80531	WASD1	LAYNE AN		EA			YES	NO	NO	NO	NO
4320050014333	COLLAR, IMPELLER THRUST, #226, SIZE 28KXL, F/WELL17-18-19-20 (DELETE WHEN 0)	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
4320050014346	IMPELLER, #176, SIZE 28KXL, F/WELL17-18-19-20 (DELETE WHEN 0)	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
4320050014347	IMPELLER, #176, 15 5/16 DIA. P21552 LAG UF 1/8 X3 3/4, SIZE 24KXL	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
4320050014610	IMPELLER, TLO CB-5, ZINCLESS BRONZE, MODEL 28TLO, WELLS 1 THRU 7	WASD1	U.S. PUM		EA			YES	NO	NO	NO	NO
4320050014767	IMPELLER, 7 5/32 DIA., FOR MODEL 30MP	WASD1	HYDROMAT		EA			YES	NO	NO	NO	NO
4320050014857	IMPELLER, CCW, 18 , FOR MODEL #NCC, S/N 8744 & 87415	WASD1	KROGH		EA			YES	NO	NO	NO	NO
4320050014860	IMPELLER, CCW, CI, F/MODEL #V4265A, S/N 87195PRH & 87196PLH, 25HP, SIZE 6 X 4, S	WASD1	KROGH		EA			YES	NO	NO	NO	NO
4320050017863	IMPELLER, FOR PUMP MODEL T4A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050017871	IMPELLER, FOR PUMP MODEL T6A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050017882	IMPELLER, FOR PUMP MODEL T3A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050017895	IMPELLER, FOR PUMP MODEL T8A3-B, T4B3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050017933	IMPELLER, FOR PUMP MODEL 13A2-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050018534	IMPELLER, CCW, 13 3/8 , PUMP S/N 741-13455-3-2, SIZE 6 X 4 X 14, MODEL 400-NSWV,	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050018633	IMPELLER, CCW, 11.94 ,PUMP S/N 791-31880-2-1, SIZE 6 X 4 X 12, MODEL 300-NSWV, S	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050025360	IMPELLER, CW, (V1974)14 , MOD.500 NCC, S/N 88205,-07, SIZE 4 X 6 X 3 1/8 L	WASD1	KROGH		EA			YES	NO	NO	NO	NO
4320050025438	IMPELLER, FOR FLOW PUMP 4 X 4	WASD1	WEMCO		EA			YES	NO	NO	NO	NO
4320050027347	SHAFT, IMPELLER, SS, FOR FLOW PUMP 4 X 4	WASD1	WEMCO		EA			YES	NO	NO	NO	NO
4320050028424	IMPELLER	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050029372	RING, IMPELLER, PUMP S/N 1606217, SIZE 16LN28	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
4320050029491	RING, IMPELLER, FOR # 6 HIGH SERVICE PUMP, SIZE 36X 24	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050030038	IMPELLER, 32 RXL, ZINCLESS BRONZE, FOR PUMP MODEL 32RXL1, S/N 816-E-1103, WELLS	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
4320050030085	IMPELLER, WITH 3/4 KEYWAY, WELLS 8-9	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
4320050031049	IMPELLER, PUMP # 257230, 20 1/8 (A PUMP)	WASD1	TRANSAM-		EA			YES	NO	NO	NO	NO
4320050031565	IMPELLER	WASD1	AURORA		EA			YES	NO	NO	NO	NO
4320050032290	IMPELLER, ALPHA NICKEL ALUMINUM BRONZE, (ASTM-B148, C958) W/ WEAR RING 316SS	WASD1	AURORA		EA			YES	NO	NO	NO	NO
4320050032591	IMPELLER, CW, 10 3/4 , PUMP S/N 3R1-057416-0, SIZE4 , MODEL B5413, STA. 5	WASD1	FAIRBANK		EA			YES	NO	NO	NO	NO
4320050032850	IMPELLER, FOR PUMP MODEL T10A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050032853	SHAFT, IMPELLER, FOR PUMP MODEL T10A3-B5	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050033058	IMPELLER, CW, 12.75 , PUMP MODEL 300, STATION 515	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050033188	IMPELLER, CW, PUMP MODEL 300-NSWV	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050033189	RING, SPLIT, IMPELLER, FOR PUMP MODEL 32RXL S/N 771-E-0121/26, WELLS 8,9,10 PORT	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
4320050033226	IMPELLER, PUMP MODEL 28TLO, S/N 26142, WELLS 1-4	WASD1	U.S. PUM		EA			YES	NO	NO	NO	NO
4320050033358	IMPELLER, 954 ALLOY, CHLORINE BOOSTER PUMP SPLIT CASE 8000 SERIES 6X4X12L	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050033359	RING, WEAR, IMPELLER, 410 SS, CHLORINE BOOSTER PUMP SPLIT CASE 8000 SERIES6X4X12	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050033389	IMPELLER, FOR PUMP MODEL 135	WASD1	AURORA		EA			YES	NO	NO	NO	NO
4320050033531	IMPELLER, 10X8X17, PUMP S/N 349588, SIZE 10X8X17	WASD1	DURCO		EA			YES	NO	NO	NO	NO
4320050033541	IMPELLER, PUMP S/N 348966, SIZE 2K 6X4-13A-11050	WASD1	DURCO		EA			YES	NO	NO	NO	NO
4320050033606	IMPELLER, PUMP MODEL 12C4B, S/N 721104	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050033609	SHAFT, IMPELLER, PUMP MODEL 12C4B, S/N 721104	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050033623	IMPELLER, PUMP MODEL JC2X3-11, S/N MM39162-9164	WASD1	MORRIS P		EA			YES	NO	NO	NO	NO
4320050033626	IMPELLER, PUMP MODEL JC1X1.5-11, S/N MM39150-9151	WASD1	MORRIS P		EA			YES	NO	NO	NO	NO
4320050033810	SHAFT, IMPELLER, FOR PUMP MODEL 16C20-B, 10 SERIES, S/N 971367	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050033915	IMPELLER, WITH RINGS (ASSEMBLY), FOR PUMP MODEL 12MNV-14, S/N 78245-8167-2	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
4320050033917	RING, IMPELLER WEARING, FOR PUMP MODEL 12MNV-14, S/N 78245-8167-2	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
4320050033937	IMPELLER, W/WEAR RING (ASSEMBLY), FOR PUMP MODEL 14MNV24, S/N 77ZUS-8132-4	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
4320050033939	RING, WEAR, IMPELLER, FOR PUMP MODEL 14MNV24, S/N77ZUS-8132-4	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
4320050033964	IMPELLER, WITH SS WEAR RINGS, 16.50 DIA., PUMP MODEL 8MF18A	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
4320050033967	RING, WEAR, IMPELLER, FOR PUMP MODEL 8MFV-18, S/N80TP90624	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
4320050033993	IMPELLER, FOR PUMP MODEL 3152-181, DRIVE HT454	WASD1	FLYGT		EA			YES	NO	NO	NO	NO
4320050034150	IMPELLER, CCW, NSWV, 6 X 4 X 14	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050034194	PUMP, W/CODE #454 IMPELLER, 40 FT CORD,	WASD1	FLYGT		EA			YES	NO	NO	NO	NO

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4320050034340	IMPELLER, CCW, FOR STA. 695, MODEL 1977C	WASD1	KROGH		EA			YES	NO	NO	NO	NO
4320050034357	IMPELLER, CCW, FOR STA. 610, PUMP MODEL 5433, SIZE 4 X 6, S/N K3T1059671-0	WASD1	FAIRBANK		EA			YES	NO	NO	NO	NO
4320050034433	SLEEVE, IMPELLER, FOR PUMP SIZE 10 X 8 X 14-U1314B	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050034564	IMPELLER, CW, PUMP SIZE 6 X 5 X 17, MODEL NSWV 300	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050034578	RING, WEAR, IMPELLER, PUMP S/N 64869-1, 5, SIZE 36 X 24L , MODEL WSHDA(9800)	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050034685	SLEEVE, IMPELLER	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050034688	EXPELLER, IMPELLER, DYN. SEAL	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050034691	IMPELLER, ASSEMBLY, CW	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050034711	IMPELLER, PUMP S/N 761-20076-1-1 (STA. 117), 861-39459-1-1 (STA. 176)	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050034717	IMPELLER	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050035116	IMPELLER, RIGHT HAND, 28.75 AVG. DIAMETER, MODEL20X24 S/N 90PT14791-8-F20	WASD1	PATTERSO		EA			YES	NO	NO	NO	NO
4320050035117	IMPELLER, LEFT HAND, 28.75 AVG. DIAMETER	WASD1	PATTERSO		EA			YES	NO	NO	NO	NO
4320050035315	IMPELLER, ASSEMBLY, CW, 19 DIAM., PUMP S/N 791-31800-1-2, 12 X 10 X 21	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050035337	PUMP, 3 H.P., 208-230/460 VOLTS, PH 3, FRAME 145JM, IMPELLER SIZE 5.5 ,S/N502111	WASD1	PEERLESS		EA			YES	NO	NO	NO	NO
4320050035466	IMPELLER, FOR 4X4 MODEL 5000. S/N 7933V6656	WASD1	GOYNE PU		EA			YES	NO	NO	NO	NO
4320050035653	IMPELLER, CD4M TRIM TO 8.750 , CHEMICAL RECIRCULATION PUMP	WASD1	DURCO		EA			YES	NO	NO	NO	NO
4320050035656	IMPELLER, CD4M TRIM TO 8.625 , CHEMICAL RECIRCULATION PUMP	WASD1	DURCO		EA			YES	NO	NO	NO	NO
4320050035658	IMPELLER, CD4M TRIM TO 12.500 , CHEMICAL RECIRCULATION PUMP	WASD1	DURCO		EA			YES	NO	NO	NO	NO
4320050035659	IMPELLER, CD4M TRIM TO 8.875 , CHEMICAL RECIRCULATION PUMP	WASD1	DURCO		EA			YES	NO	NO	NO	NO
4320050035660	IMPELLER, CD4M TRIM TO 8.0 , CHEMICAL RECIRCULATION PUMP	WASD1	DURCO		EA			YES	NO	NO	NO	NO
4320050035665	IMPELLER, CD4M TRIM TO 7.750 , CHEMICAL RECIRCULATION PUMP	WASD1	DURCO		EA			YES	NO	NO	NO	NO
4320050035698	IMPELLER, CCW, WITH RINGS, DYNAMIC SEAL 4 X 4 X 14 PUMP	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050035699	IMPELLER, CCW, DYNAMIC SEAL PUMP	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050035758	IMPELLER, FOR SAMPLE PUMP MODEL 11 1/2A3B, S/N 900289	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050035762	SHAFT, IMPELLER, FOR PUMP MODEL 11 1/2A3-B, S/N 900289	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
4320050035777	IMPELLER, DRW#5235722, DJ, 316SS, ITEM 176	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
4320050035799	IMPELLER, PUMP S/N 781-22581-11-1 & 2	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050036004	CONE, IMPELLER	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050036005	IMPELLER	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050036097	IMPELLER, CW, 14 , PUMP S/N 821-37485-1-1, SIZE 6X 4 X 14	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050036267	IMPELLER, 15 DIA., FOR GOULDS 3196XL, 8X10-15G, S/N 2768 758.1.2.3	WASD1	GOULDS P		EA			YES	NO	NO	NO	NO
4320050036268	IMPELLER	WASD1	GOULDS P		EA			YES	NO	NO	NO	NO
4320050036269	IMPELLER	WASD1	GOULDS P		EA			YES	NO	NO	NO	NO
4320050036270	IMPELLER	WASD1	GOULDS P		EA			YES	NO	NO	NO	NO
4320050036298	IMPELLER	WASD1	GOULDS P		EA			YES	NO	NO	NO	NO
4320050036353	IMPELLER, 6 X 6 X 17 , MODEL 300, FOR DYNAMIC SEAL AND TAPERED SHAFT, CW	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050036354	IMPELLER, 6 X 6 X 17 , MODEL 300, FOR DYNAMIC SEAL AND TAPERED SHAFT, CCW	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050040717	KIT, REPAIR, IMPELLER AND RACEWAY, CHLORINE BOOSTER PUMP FOR SOUTH DADE	WASD1	BURKS		KT			YES	NO	NO	NO	NO
4320050040889	IMPELLER, PUMP MODEL 3300, 88HP, CODE 454	WASD1	FLYGT		EA			YES	NO	NO	NO	NO
4320050041132	RING, WEAR, IMPELLER, HIGH SERVICE PUMP #5, MODEL 24LNC42, SERIAL # 0109MS001386	WASD1	FLOWSERV		EA			YES	NO	NO	NO	NO
4320050041140	RING, WEAR, IMPELLER, HIGH SERVICE PUMP	WASD1	FLOWSERV		EA			YES	NO	NO	NO	NO
4320050041196	IMPELLER, 15", PUMP S/N K3W1070757-0, STA. 595	WASD1	FAIRBANK		EA			YES	NO	NO	NO	NO
4320050041212	IMPELLER, ASSEMBLY, CW, FULL SIZE, PUMP S/N 1-64723-01-2, PS 690	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
4320050041315	IMPELLER, PUMP MODEL 3152, CODE 432	WASD1	FLYGT		EA			YES	NO	NO	NO	NO
4320050041356	IMPELLER, PUMP MODEL 3140, CODE 481	WASD1	FLYGT		EA			YES	NO	NO	NO	NO
4320050041682	IMPELLER, POLYMER BLENDER MIXERS	WASD1	STRANCO		EA			YES	NO	NO	NO	NO
4610050024448	IMPELLER, CHEMICAL FEEDER	WASD1	BIF		EA			YES	NO	NO	NO	NO
5305010135452	SCREW, LOCK, IMPELLER, FOR PUMP MODELS T3A3-B, T4A3-B, T6A3-B, T8A3-B, 14A2-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
5305050028522	SCREW, SET, IMPELLER NUT, PUMP S/N 811-37199-1-1,SIZE 8 X 6 X 17, MODEL 250-NSW	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
5305050034358	SCREW, IMPELLER, FOR STA. 610, MODEL 5433, SIZE 4X 6	WASD1	FAIRBANK		EA			YES	NO	NO	NO	NO
5305050041648	SCREW, IMPELLER, PUMP MODEL 7196, 4x4x12, S/N DP-759171, PS 0510	WASD1	CRANE DE		EA			YES	NO	NO	NO	NO
5306050014743	BOLT, IMPELLER, FOR MODEL 30MP	WASD1	HYDROMAT		EA			YES	NO	NO	NO	NO
5306050014873	BOLT, IMPELLER, 316 SS, F/MODEL V4265A, S/N 87195PRH & 87196PLH, SIZE 6 X 4	WASD1	KROGH		EA			YES	NO	NO	NO	NO
5306050025440	BOLT, IMPELLER LOCK, FOR FLOW PUMP 4 X 4	WASD1	WEMCO		EA			YES	NO	NO	NO	NO
5310010111458	WASHER, IMPELLER, FOR PUMP MODEL T3A3-B, T4A3-B, T6A3-B, T8A3-B, 14A2-B, 14A11-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
5310050012312	LOCKNUT, IMPELLER	WASD1	MARLOW P		EA			YES	NO	NO	NO	NO
5310050012397	NUT, IMPELLER,	WASD1	MORRIS P		EA			YES	NO	NO	NO	NO
5310050012970	NUT, IMPELLER, PUMP S/N K2V1071261, K2V1071261-1,SIZE 6 X 8, MODEL 5433B, STA.	WASD1	FAIRBANK		EA			YES	NO	NO	NO	NO

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5310050012971	WASHER, IMPELLER NUT, PUMP S/N K2V1071261, K2V1071261-1, SIZE 6 X 8, MODEL 5433B	WASD1	FAIRBANK		EA			YES	NO	NO	NO	NO
5310050013436	NUT, IMPELLER, FOR PUMP MODEL 10MF21	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
5310050013483	NUT, IMPELLER	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
5310050014746	WASHER, IMPELLER, FOR MODEL 30MP	WASD1	HYDROMAT		EA			YES	NO	NO	NO	NO
5310050014872	WASHER, IMPELLER, 316 SS, F/MODEL #V4265A, S/N 87195 PRH & 96 PLH	WASD1	KROGH		EA			YES	NO	NO	NO	NO
5310050017963	WASHER, IMPELLER, FOR PUMP MODEL T3A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
5310050018410	NUT, IMPELLER, PUMP S/N 811-37370-2-1, 811-37370-1-1, SIZE 6 X 4 X 14, MODEL 300	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
5310050018755	NUT, IMPELLER, PUMP S/N 795004, MODEL 5712, BRONZE	WASD1	FAIRBANK		EA			YES	NO	NO	NO	NO
5310050032861	NUT, IMPELLER, FOR PUMP MODEL 16LNC-35, S/N 1413987, 1 THRU 4 HS PUMPS	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
5310050033918	NUT, IMPELLER, FOR PUMP MODEL 12MNV-14, S/N 78245-8167-2	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
5310050033940	NUT, IMPELLER, FOR PUMP MODEL 14MNV24, S/N 77ZUS-8132-4	WASD1	WORTHING		EA			YES	NO	NO	NO	NO
5310050034309	NUT, IMPELLER, FOR STA. 1073, MODEL 150 10X10X21 LC-N5W	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
5310050036006	NUT, IMPELLER	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
5310050041191	NUT, IMPELLER, OR BOLT, PUMP S/N K3W1070757-0, STA. 595	WASD1	FAIRBANK		EA			YES	NO	NO	NO	NO
5310050041192	WASHER, IMPELLER, PUMP S/N K3W1070757-0, STA. 595	WASD1	FAIRBANK		EA			YES	NO	NO	NO	NO
5315050012317	KEY, IMPELLER	WASD1	MARLOW P		EA			YES	NO	NO	NO	NO
5315050013677	KEY, IMPELLER, FOR PUMP TYPE ETA 80-250,S/N 112933-491 HEAT EXCHANGER PUMP HOT,	WASD1	CARVER P		EA			YES	NO	NO	NO	NO
5315050014249	KEY, IMPELLER, #676, FOR B.J. EFF. PUMP 806E1073	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
5315050014345	KEY, IMPELLER, #676, 3/8 SQ X 4 1/8 LG, SIZE 28KXL, F/WELL17-18-19-20	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
5315050014352	KEY, IMPELLER, 1/2 SQ X 5 1/2 LG STL #676	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
5315050028768	KEY, IMPELLER, 3/4 SQ X 4 1/2 LG, 416 SS, MODEL32-RXL,S/N 771-E	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
5315050030044	KEY, IMPELLER, 5/8 SQ X 4 3/8 LG, FOR PUMP MODEL 32RXL1, S/N 816-E-1103, WELLS	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
5315050033025	KEY, IMPELLER SHAFT, FOR PUMP MODEL T8A3-B, T10A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
5315050033353	KEY, IMPELLER, CHLORINE BOOSTER PUMP SPLIT CASE 8000 SERIES 6X4X12L	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
5315050035781	KEY, IMPELLER, DRW# 5235902, 3/4 SQ. X 4 3/4 LG.,316SS	WASD1	BYRON JA		EA			YES	NO	NO	NO	NO
5315050041193	KEY, IMPELLER, PUMP S/N K3W1070757-0, STA. 595	WASD1	FAIRBANK		EA			YES	NO	NO	NO	NO
5330050013501	O-RING, IMPELLER, PUMP S/N 791-31932-4-1, 791-31932-5-1, SIZE 4 X 4 X 14, MODEL	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
5330050018440	O-RING, IMPELLER, PUMP S/N 801-35149-1-1, & 1-2, & 1-3, SIZE 12 X 10 X 21 LC, M	WASD1	ALLIS-CH		EA			YES	NO	NO	NO	NO
5330050029275	SEAL, MECHANICAL, PUMP SERIES F, TYPE 1250A, STYLE M, IMPELLER # 2685593	WASD1	PEERLESS		EA			YES	NO	NO	NO	NO
5330050033532	GASKET, IMPELLER, PUMP S/N 349588, SIZE 10X8X17	WASD1	DURCO		EA			YES	NO	NO	NO	NO
5330050033544	GASKET, IMPELLER, PUMP S/N 348966, SIZE 2K 6X4-13A-11050	WASD1	DURCO		EA			YES	NO	NO	NO	NO
5330050035646	GASKET, IMPELLER, CHEMICAL RECIRCULATION PUMP	WASD1	DURCO		EA			YES	NO	NO	NO	NO
5330050035661	GASKET, IMPELLER, CHEMICAL RECIRCULATION PUMP	WASD1	DURCO		EA			YES	NO	NO	NO	NO
5365050017940	SHIM, IMPELLER, FOR PUMP MODELS T3A3-B, T4A3-B, T6A3-B, T8A3-B, 14A2-B,14A11-B	WASD1	GORMAN-R		ST			YES	NO	NO	NO	NO
5365050032857	SHIM, SET, IMPELLER, FOR PUMP MODEL T10A3-B, 16C20-B	WASD1	GORMAN-R		ST			YES	NO	NO	NO	NO
5365050033612	SHIM, SET, IMPELLER, PUMP MODEL 12C4B, S/N 721104	WASD1	GORMAN-R		ST			YES	NO	NO	NO	NO
4310050037656	COMPRESSOR, AIR, LEVEL CONTROLLER	WASD1	DIGITAL		EA			YES	NO	NO	NO	NO
4610050032511	PROBE, LEVEL, (C) EVAPORATOR SERIES 50-200, DRWG U27885	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
5930050032592	SWITCH, LEVEL, LS-1800 BRASS (NO SUBSTITUTIONS)	WASD1	GEMS		EA			YES	NO	NO	NO	NO
6625050041158	METER, HYDRORANGER ULTRASONIC LEVEL	WASD1	SIEMENS		EA			YES	NO	NO	NO	NO
6680050017949	GAUGE, OIL LEVEL, FOR PUMP MODELS T3A3-B, T4A3-B,T6A3-B, T8A3-B, 14A2-B, T10A3-B	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
6680050029235	INDICATOR, BIN LEVEL, MODEL SG-6, 115V, PULSE SWITCH 12 WATT MOTOR AT 230 V	WASD1	FULLER		EA			YES	NO	NO	NO	NO
6680050035099	GAUGE, OIL LEVEL SIGHT	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
6680050042004	TRANSDUCER, SUBMERSIBLE LEVEL, 4-20MA, 10 PSI RANGE, MODEL SLX130	WASD1	CONTEGRA		EA			YES	NO	NO	NO	NO
6680050042005	TRANSDUCER, SUBMERSIBLE LEVEL, 4-20MA, 15 PSI RANGE, MODEL SLX130	WASD1	CONTEGRA		EA			YES	NO	NO	NO	NO
3110001079955	BEARING, WIDE INNER RING, 1-1/2 SHAFT DIAMETER, FOR STRAIGHT SHAFT MOUNTING	WASD1	MORSE-SE		EA			YES	NO	NO	NO	NO
3110002770824	BEARING, WIDE INNER RING, 3/4 SHAFT DIAMETER, FOR STRAIGHT SHAFT MOUNTING	WASD1	MORSE-SE		EA			YES	NO	NO	NO	NO
3130001080580	BEARING, FLANGE BLOCK UNIT, FOUR BOLT HOUSING, 1-1/2 SHAFT DIAMETER	WASD1	MORSE-SE		EA			YES	NO	NO	NO	NO
3130050032133	BEARING, PILLOW BLOCK, STANDARD DUTY, 1 1/2 SHAFT DIAMETER	WASD1	SKF		EA			YES	NO	NO	NO	NO
4320050035013	PUMP, DIAPHRAGM METERING	WASD1	LIQUID M		EA			YES	NO	NO	NO	NO
4610050024831	BAG, FILTER, 8 FT LONG, 5 DIAMETER, ARAMID, CONVEYOR (NO SUBSTITUTIONS)	WASD1	FULLER		EA			YES	NO	NO	NO	NO
4610050032598	BLOCK, LOWER ROTAMETER, FOR CHLORINATOR MODEL V2100, S/N AR-37300	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
4610050033397	STOP, ROTAMETER FLOAT, FOR V-2000 CHLORINATOR	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
4610050033398	STOP, ROTAMETER FLOAT, FOR V-2000 CHLORINATOR	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
4610050033399	BLOCK, ROTAMETER, FOR V-2000 CHLORINATOR	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
4610050035620	BLOCK, ROTAMETER	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
5330003535163	SEAL, MECHANICAL, 0.625 SHAFT DIAMETER (GORMAN-RUPP GS-625)	WASD1	U.S. SEA		EA			YES	NO	NO	NO	NO
5330004927552	GASKET, LEAD, FOR ROTAMETER V-50, SERIES YY30235	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO

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5330004963652	SEAL, MECHANICAL, (GORMAN-RUPP GS-1250) 0.875 SHAFT DIAMETER	WASD1	GORMAN-R		EA			YES	NO	NO	NO	NO
5330005053665	O-RING, FOR ROTAMETER V-50, SERIES YY30235	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
5330050017694	SEAL, MECHANICAL, 0.590 SHAFT DIAMETER (AURORA 7120703755) (U.S. SEAL PS-129)	WASD1	PAC-SEAL		EA			YES	NO	NO	NO	NO
5330050019022	O-RING, FOR ROTAMETER V-50, SERIES YY30235	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
5330050019126	GASKET, LEAD, FOR ROTAMETER V-50, SERIES YY30235	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
5330050019148	GASKET, FOR ROTAMETER V-50, SERIES YY30235	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
5330050019157	O-RING, (C) ROTAMETER V-50, SERIES YY30235	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
5330050019172	GASKET, FOR ROTAMETER V-50, SERIES YY30235	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
5330050019199	GASKET, FOR ROTAMETER V-50, SERIES YY30235	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
5330050019240	O-RING, FOR ROTAMETER V-50, SERIES YY30235	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
5330050019242	O-RING, FOR ROTAMETER V 50, SERIES YY30235	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
5330050024144	SEAL, MECHANICAL, 2.750 SHAFT DIAMETER	WASD1	U.S. SEA		EA			YES	NO	NO	NO	NO
5805050006521	ARM, FOR METEMETER MODEL OC534M-14, TYPE C, SER #626207, SCALE 5312(NO SUBSTITUT	WASD1	BRISTOL		EA			YES	NO	NO	NO	NO
5905050004806	POTENTIOMETER, FOR CHLORINATION SYSTEM	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
5905050015040	POTENTIOMETER, 10K OHM, W/ VERNIER (NO SUBSTITUTIONS)	WASD1	FISCHER		EA			YES	NO	NO	NO	NO
5910050038368	TACHOMETER, 60 VOLT, 1000 RPM	WASD1	INELTECH		EA			YES	NO	NO	NO	NO
5930050035993	SWITCH, ROTARY LIMIT WITH POTENTIOMETER CONTROL BOX (NO SUBSTITUTIONS)	WASD1	PATRIOT		EA			YES	NO	NO	NO	NO
5945050009780	RELAY, METER, RPM INDICATOR SET POINT UNIT TYPE 196,SCALE 0-2000 RPM (NO SUBSTIT	WASD1	GE		EA			YES	NO	NO	NO	NO
5945050026654	RELAY, CONSTANT DIFFERENTIAL W/PIPE ROTAMETER, RATE 0.9 TO 2.1, SCALE RANGE 0.25	WASD1	MOORE PR		EA			YES	NO	NO	NO	NO
5945050035687	RELAY, METER, 0-150 VDC, MOVEMENT WITH DOUBLE SETPOINTS, FACE 4 1/4 X 4 1/2	WASD1	GE		EA			YES	NO	NO	NO	NO
5975000858551	CABLE TIE, 1/16 - 1 3/4 DIAMETER RANGE, PK=100	WASD1	T AND B		PK			YES	NO	NO	NO	NO
5975011255251	CABLE TIE, 3.6", 1/16 - 5/8 DIAMETER RANGE, UV RATED,BLACK, PK/100	WASD1	T AND B		PK			YES	NO	NO	NO	NO
5999050037792	SENSOR, CARTRIDGE, MODEL 99, 02 TRAIN D.O. METERS	WASD1	ROYCE IN		EA			YES	NO	NO	NO	NO
6625050015453	METER, PROBE, CONDUCTIVITY (NO SUBSTITUTIONS)	WASD1	UNION CA		EA			YES	NO	NO	NO	NO
6625050032972	CAN, METER,TYPE HQ-7U,W/COVER FOR OVERHEAD & UNDERGROUND SERVICES(NO SUBSTITUTIO	WASD1	LANDIS A		EA			YES	NO	NO	NO	NO
6625050040773	MEMBRANE KIT, 1.25 MIL, FOR CALIBRATION OF D.O. METERS	WASD1	YSI		KT			YES	NO	NO	NO	NO
6645000925099	METER, HOUR, 120 VAC, 99999.9 HOURS,NON-RESET, TERMINAL BLOCK, DUST COVER	WASD1	REDDINGT		EA			YES	NO	NO	NO	NO
6665050040853	KIT, WALL MOUNT WITH 5 METER, CHLORINE DETECTION IN PLANTS	WASD1	DRAGER		KT			YES	NO	NO	NO	NO
6680050001186	BALL, FLOAT, .250 DIAMETER, PVC	WASD1	FISCHER		EA			YES	NO	NO	NO	NO
6680050019162	FLOAT, ROTAMETER, 1 11/16 DIAM., FOR CHLORINATION SYSTEM	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
6680050019311	ROTAMETER, INLET UNIT, FOR 500 LB. SERIES V-800 CHLORINATOR	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
6680050019321	ROTAMETER, FOR CHLORINATOR SERIES V-75, S/N RR24776	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
6680050022867	ROTAMETER, 1000 LB., FOR 2000 LB. SERIES V-800 CHLORINATOR, MODEL V-8020	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
6680050022928	MASTER CONTROL, UNIT, V100A CHLORINATOR, ROTAMETER A805542	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
6680050032507	METER, PURGE, (C) EVAPORATOR SERIES 50-200, DRWG U27885	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
6680050032997	TEMPMETER, FOR EVAPORATOR SERIES #50-200	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
6680050033036	FLOAT, ROTAMETER, FOR V-2100 CHLORINATOR, S/N AR-37300	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
6680050033393	INLET, ROTAMETER, FOR V-2000 CHLORINATOR	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
6680050033404	TUBE, ROTAMETER, FOR V-2000 CHLORINATOR	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
6680050033614	FLOWMETER, VISI-FLOAT, FOR PLANT S/W SYSTEMS	WASD1	DWYER		EA			YES	NO	NO	NO	NO
6680050036390	TURBIDIMETER, LOW RANGE PROCESS, MODEL 1720C, 973FILTER REUSE SYSTEM TO FIU	WASD1	HACH		EA			YES	NO	NO	NO	NO
6680050037734	TACHOMETER, PANEL	WASD1	SHIMPO		EA			YES	NO	NO	NO	NO
6680050041368	PROBE, 1 METER, 10 SENSORS, 4" BETWEEN SENSORS, W/60 FT CABLE, PS CONTROL PANELS	WASD1	MULTITRO		EA			YES	NO	NO	NO	NO
6685050015114	THERMOMETER, FOR AC MOTOR	WASD1	WEKSLER		EA			YES	NO	NO	NO	NO
6685050024544	THERMOMETER, STAINLESS STEM 30-240 RANGE (NO SUBSTITUTIONS)	WASD1	SYBRON/T		EA			YES	NO	NO	NO	NO
6685050029086	THERMOMETER, BI-THERM DIAL, 30-240 DEGREE F, 18 STEM, 9 IND. GLASS, W/FITTING	WASD1	SYBRON/T		EA			YES	NO	NO	NO	NO
6685050036127	TRANSMITTER, POTENTIOMETER, 4-20 MA, 24V DC (NO SUBSTITUTIONS)	WASD1	M-SYSTEM		EA			YES	NO	NO	NO	NO
7530050029572	CHART, RANGE 0-45, 7 DAY, FOR FLOWMETER M27, BOX OF 100 (NO SUBSTITUTIONS)	WASD1	BADGER M		BX			YES	NO	NO	NO	NO
7530050029573	CHART, RANGE 0-65, 7 DAY, FOR FLOWMETER M6, BOX OF 100 (NO SUBSTITUTIONS)	WASD1	BADGER M		BX			YES	NO	NO	NO	NO
7530050029574	CHART, RANGE 0-25, 7 DAY, FOR FLOWMETER M42, BOX OF 100 (NO SUBSTITUTIONS)	WASD1	BADGER M		BX			YES	NO	NO	NO	NO
7530050036327	CHART, 0-10, 24 HOUR, HKTW01005016, FLOWMETER (NOSUBSTITUTIONS)	WASD1	FISCHER		BX			YES	NO	NO	NO	NO
7530050036502	CHART, 0-100, FOR INJECTION WELL PUMP STATION METER (NO SUBSTITUTIONS)	WASD1	CHESSELL		BX			YES	NO	NO	NO	NO
7530050036504	CHART, STRIP, FOR INJECTION WELL PUMP STATION METER (NO SUBSTITUTIONS)	WASD1	FISCHER		BX			YES	NO	NO	NO	NO
4730050004793	PLUG, FOR CL2 ALARM & POSITIONER, FOR CHLORINATION SYSTEM	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO
5360050025395	SPRING, DISC,#511, F/CLARIFIER DRIVE ASSY MECHANICAL OVERLOAD ALARM#DWG04D13885	WASD1	DORR-OLI		EA			YES	NO	NO	NO	NO
5365050025396	SPACER, #510, ON CLARIFIER DRIVE ASSY MECHANICAL OVERLOAD ALARM #DWG04D13885	WASD1	DORR-OLI		EA			YES	NO	NO	NO	NO
5365050025397	SPACER, #510, ON CLARIFIER DRIVE ASSY,MECHANICAL OVERLOAD ALARM # DWG04D13885	WASD1	DORR-OLI		EA			YES	NO	NO	NO	NO
5930050035300	SWITCH, ALARM, LOW TEMPERATURE	WASD1	WALLACE-		EA			YES	NO	NO	NO	NO

Part	Description	Organization	Preferred Manufacturer	Category	OUM	Buyer	Preferred Supplier	Insurance Item	Repairable Spare	Calibration Standard	Prevene Reorders	Track by Asset
5935050040795	CONTROL, AND ALARM, FLOODFREE, ELECTRONIC SUMP PUMP	WASD1	MIC		EA			YES	NO	NO	NO	NO
5963050040810	BOARD, ALARM, O2 PLANT #3 PANALARM SYSTEM	WASD1	PANALARM		EA			YES	NO	NO	NO	NO
6625050034914	PROBE, MOTION FAILURE ALARM, MFA - 4P, XPP-4, 5' OF CABLE (NO SUBSTITUTIONS)	WASD1	MILLTRON		EA			YES	NO	NO	NO	NO

APPENDIX H

Pump Station Division Job List

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PSD Jobs List												
Occupation Code	Occupation Title	Minimum Salary	Maximum Salary	Average Salary	Filled Positions	Vacant Positions	Budgeted Positions	Budget per Average Salary	Requested Positions	Requested Budget per Average Salary	Requested Vehicles	Requested Computers
13	CLERK 4	$ 33,619.04	$ 54,476.50	$ 44,047.77	1	0	1	$ 44,047.77	0	$ -	0	0
22	OFFICE SUPPORT SPECIALIST 3	$ 28,621.58	$ 44,653.96	$ 36,637.77	1	0	1	$ 36,637.77	0	$ -	0	0
94	ADMIN SECRETARY	$ 31,218.20	$ 55,159.00	$ 43,188.60	1	0	1	$ 43,188.60	0	$ -	0	0
315	ACCOUNTANT 1	$ 39,014.30	$ 65,535.34	$ 52,274.82	1	0	1	$ 52,274.82	0	$ -	0	0
810	ADMIN OFFICER 1	$ 33,891.00	$ 56,813.90	$ 45,352.45	1	0	1	$ 45,352.45	0	$ -	0	0
812	ADMIN OFFICER 3	$ 51,778.48	$ 87,108.58	$ 69,443.53	0	1	1	$ 69,443.53	0	$ -	0	0
1021	ENGINEER 2	$ 56,813.90	$ 95,377.62	$ 76,095.76	-	-	0	$ -	2	$ 152,191.52	1	2
1843	SYSTEMS ANALYST/PROG 1	$ 53,444.56	$ 87,786.66	$ 70,615.61	-	-	0	$ -	1	$ 70,615.61	0	1
5526	W&S STRUCTURAL MAINT SUPV	$ 51,059.06	$ 74,611.68	$ 62,835.37	5	0	5	$ 314,176.85	0	$ -	0	0
5546	WS INSTRUMENT TECH SUPV	$ 61,667.32	$ 89,712.74	$ 75,690.03	-	-	0	$ -	1	$ 75,690.03	0	0
5589	SCADA OPERATIONS SPECIALIST	$ 56,813.90	$ 95,377.62	$ 76,095.76	-	-	0	$ -	6	$ 456,574.56	0	6
5605	ASST W&S SUPT	$ 66,222.52	$ 108,532.84	$ 87,377.68	4	0	4	$ 349,510.72	1	$ 87,377.68	1	1
5608	CHIEF W&S DIVISION	$ 87,265.88	$ 137,195.76	$ 112,230.82	1	0	1	$ 112,230.82	0	$ -	0	0
5712	W&S OFFICE SUPP SPEC 2	$ 25,976.60	$ 39,518.96	$ 32,747.78	4	0	4	$ 130,991.12	0	$ -	0	0
5719	W&S SECRETARY	$ 30,109.56	$ 46,555.08	$ 38,332.32	2	0	2	$ 76,664.64	2	$ 76,664.64	0	0
5728	W & S ACCOUNT CLERK	$ 28,083.90	$ 43,029.74	$ 35,556.82	2	0	2	$ 71,113.64	0	$ -	0	0
5784	W&S INFORMATION TECH SPEC	$ 49,365.42	$ 70,921.76	$ 60,143.59	1	0	1	$ 60,143.59	0	$ -	0	0
5802	W&S SEMI-SKILLED LABORER	$ 25,162.28	$ 33,768.28	$ 29,465.28	3	0	3	$ 88,395.84	0	$ -	0	0
5803	W&S MAINT REPAIRER	$ 28,257.84	$ 39,073.06	$ 33,665.45	15	1	16	$ 538,647.20	49	$ 1,649,607.05	22	0
5804	W&S MAINTENANCE MECHANIC	$ 32,655.48	$ 46,819.24	$ 39,737.36	15	2	17	$ 675,535.12	14	$ 556,323.04	7	10
5840	W&S PLANT ELECTRICIAN	$ 51,691.12	$ 75,534.42	$ 63,612.77	46	1	47	$ 2,989,800.19	33	$ 2,099,221.41	16	21
5844	PLANT DIESEL MECHANIC	$ 46,959.12	$ 68,618.16	$ 57,788.64	-	-	0	$ -	8	$ 462,309.12	4	4
5846	W&S PLANT MECHANIC	$ 46,959.12	$ 68,618.16	$ 57,788.64	33	1	34	$ 1,964,813.76	30	$ 1,733,659.20	15	4
5850	W&S INSTRUMENT TECHNICIAN	$ 51,691.12	$ 75,534.42	$ 63,612.77	-	-	0	$ -	8	$ 508,902.16	4	4
5872	W&S STRUCTURAL MAINT WORKER	$ 38,985.44	$ 56,510.48	$ 47,747.96	34	2	36	$ 1,718,926.56	2	$ 95,495.92	0	0
5965	W&S MAINT PLANNER/SCHEDULER	$ 47,723.26	$ 80,691.78	$ 64,207.52	2	0	2	$ 128,415.04	2	$ 128,415.04	0	2
5966	W&S PLANT ELECTRICAL SUPV	$ 61,667.32	$ 89,712.74	$ 75,690.03	5	0	5	$ 378,450.15	0	$ -	0	0
5969	W&S OPERATIONS & MAINT SUPV	$ 56,093.18	$ 81,983.83	$ 69,038.51	-	-	0	$ -	11	$ 759,423.56	11	12
5970	W&S PLANT DIESEL MAINT SUPV	$ 56,093.18	$ 81,983.98	$ 69,038.58	1	0	1	$ 69,038.58	0	$ -	0	0
5972	W&S PLANT MAINTENANCE SUPV	$ 56,093.18	$ 81,983.98	$ 69,038.58	8	0	8	$ 552,308.64	0	$ -	0	0
				Totals:	**186**	**8**	**194**	**$ 10,510,107.00**	**170**	**$ 8,912,471.00**	**81**	**67**

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APPENDIX I

ANTICIPATED FUNDING NEEDS

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ANTICIPATED FUNDING NEEDS

SALARY:		
Requested Employee (170):	$	9,000,000.00
34% Overhead (fringe rate):	$	3,060,000.00
Total Loaded Salary:	**$**	**12,060,000.00**

TRAINING:		
Current Employees:	$	485,000.00
Avg. Training Cost:	$	2,500.00
# Employees:		194
Requested Employees:	$	425,000.00
Avg. Training Cost:	$	2,500.00
# Employees:		170
Total Requested Training:	**$**	**910,000.00**

EQUIPMENT:		
Operations and Maintenance Equipment:		
Requested Vehicles:	$	4,050,000.00
Avg. Cost:	$	50,000.00
Quantity:		81
Requested Computers:	$	134,000.00
Avg. Cost:	$	2,000.00
Quantity:		67
Predictive Maintenance Equipment:		
Thermal Imaging:	$	30,000.00
Unit Cost:	$	2,500.00
Quantity:		12
Oil Analysis:	$	18,000.00
Unit Cost:	$	1,500.00
Quantity:		12
Vibration Analysis:	$	24,000.00
Unit Cost:	$	2,000.00
Quantity:		12
Megger Test:	$	42,000.00
Unit Cost:	$	3,500.00
Quantity:		12
Total Requested Equipment:	**$**	**4,298,000.00**

VENDOR CONSULTANT:		
Pump Station Technical Specifications (Data Collection):	$	2,180,000.00
Pump Station Technical Specifications and Data Attribution (EAMS):	$	850,000.00
Critical Spare Parts (EAMS):	$	260,000.00
Maintenance Scheduling (EAMS):	$	2,110,000.00
Analyze Communications:	$	250,000.00
Project Management:	$	847,500.00
Total Vendor Consultant:	**$**	**6,497,500.00**

TOTAL ESTIMATED BUDGET INCREASE:		
Total:	**$**	**23,765,500.00**

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