



January 2021  
FLSA: NON-EXEMPT

## MAINTENANCE MECHANIC I/II

### DEFINITION

Under general supervision, to perform skilled work involved in the maintenance of water reclamation plant equipment; to inspect, identify, diagnose, replace and repair worn and malfunctioning equipment; and to perform related work as required.

Perform mechanical duties ranging in responsibility from preventative maintenance and repair activities on wastewater pumps and pumping facilities, troubleshoot equipment failures, and perform a variety of technical tasks relative to assigned area of responsibility. Participates in classroom, on-line and on-the-job training.

Perform work involving coordinating, field supervising, and providing technical knowledge to crews of maintenance workers, equipment operators, or service workers engaged in making complex electrical and mechanical repairs and installation of equipment in the municipal Water/Wastewater treatment plant, lift, pump and storm water stations.

### SUPERVISION RECEIVED

Receives direct or general supervision from the Maintenance Superintendent or other technical supervisor as designated.

### CLASS CHARACTERISTICS

Maintenance Mechanic I: This is the entry-level class in the Maintenance Mechanic series. Initially under close supervision, incumbents with basic mechanical experience learn District infrastructure, systems, operations, practices, and procedures. As experience is gained, assignments become more varied and are performed with greater independence. Assignments may vary with the skill and training of the incumbent. This class is flexibly staffed with Maintenance Worker II and incumbents may advance to the higher level after gaining the knowledge, skills, and experience, which meet the qualifications of the higher-level class and after demonstrating the ability to perform the work of the higher-level class.

Maintenance Mechanic II: This is the semi-skilled class in the Maintenance Mechanic series. This class is distinguished from the Maintenance Worker I by the assignment of the full range of duties. Employees at this level receive only occasional instruction or assistance as new or unusual situations arise. Positions may be filled by advancement from the Maintenance Worker I level, or by recruiting an outside candidate with substantial mechanical experience. Incumbents are expected to perform a wide variety of mechanical maintenance duties with only occasional instruction or assistance.

### **EXAMPLES OF ESSENTIAL FUNCTIONS (Illustrative only)**

*Management reserves the rights to add, modify, change, or rescind the work assignments of different positions and to make reasonable accommodations so that qualified employees can perform the essential functions of the job.*

- Troubleshoots and repairs a variety of water and wastewater treatment pumping, and regulating equipment including, electric motors, gas and/or diesel engines, electric powered pumps, hydraulic controls, air compressors, belt, chain, and conveyors, emergency systems, power generation systems, chillers and pressure and flow regulators.
- Inspects, maintains, repairs, overhauls, or replaces malfunctioning, damaged or worn parts, materials, and equipment.
- Locates and corrects electrical problems with pump control devices.
- Repairs, cleans and rebuilds pumps, replacing bearings, shafts, sleeves and seals.
- Using drawings, specifications, schematics, sketches, verbal and written instructions, performs complex mechanical maintenance, fabrication and rebuilding of shop, field, and plant equipment used in wastewater plants, pump stations and collection systems.
- Performs horizontal and vertical welding, fabricating, silver soldering, hard facing and brazing using acetylene, arc, mig and tig welder on most ferrous and nonferrous metals, makes specialized cuts and complex angles using a band saw; performs blacksmithing and parts fabrication.
- Maintains, installs, inspects and repairs piping systems of PVC, black or cast iron, stainless steel, and copper tubing; install, removes and repairs larger pipes and valves; draw minor designs, modify existing piping system and welded steel pipes, such as nozzles and saddles; taps, cuts and threads pipes.
- Overhauls, maintains, installs, inspects, adjusts and repairs a wide variety of pneumatic systems and compressors; repairs a variety of pumps, such as centrifugal, positive displacement, and screw; services, lubricates and adjusts chemical feed and processing equipment; determines excess wear and pump efficiencies.
- Performs routine mechanical maintenance activities on automotive vehicles; repairs internal combustion engines, adjusts valves and carburetors, repairs and maintains exhaust systems.
- Performs regularly scheduled maintenance, inspection, and repair tasks on comminuting and grinding devices; overhauls equipment, such as cutters, bearings, chains, mechanical seals, gear reducers.
- Maintains work areas in a clean and orderly condition, including securing equipment at the close of the workday.
- May assist other operations and mechanical maintenance crews in emergency or relief situations.

## **EXAMPLES OF ESSENTIAL FUNCTIONS (continued)**

- Follows proper safety practices, precautions and procedures, such as confined space entry, storing, handling, and transporting gases, using correct lockout and tag out procedures, using flash protection when welding, using safe rigging, welding practices, Personal Protective Equipment (PPE), and ARC Flash.
- Responds to emergency calls and repairs pumps and pump controls as required.
- Operates standard office equipment, including job-related computer hardware and software applications, facsimile equipment, and multi-line telephones; may operate other department-specific equipment.
- Builds and maintains positive working relationships with co-workers, other District employees, and the public.
- Uses CMMS (Computerized Maintenance Management Software).
- Performs other duties as assigned.

## **QUALIFICATIONS**

### **Knowledge of:**

- Standard methods, theory, practices, equipment, tools, and materials used in the maintenance, installation, and repair of equipment as found in wastewater treatment plant operations.
- Procedures, equipment, materials, and tools used in the operation, maintenance and repair of pneumatic systems, motors, engines, pumps, compressors, disinfection equipment, power generation systems, and other related equipment.
- Gas and diesel engine maintenance and repair.
- Hydraulics and control systems.
- Principles of operation of District treatment and collection systems.
- Safe work methods and safety practices pertaining to the work.
- Confined space entry procedures, related safety equipment and Personal Protective Equipment.
- Applicable Federal and State laws; District, Department, and Division regulations, codes, policies, and procedures.
- Record keeping principles and procedures.
- SCADA operating systems, CMMS (Computerized Maintenance Management Software) and other computer applications related to the work.
- Basic to complex shop math.

### **Ability to:**

- Perform a variety of skilled tasks in the maintenance, renovation, and repair of District equipment.
- Interpret mechanical drawings, plans and specifications.
- Learn to and inspect, operate, diagnose problems, and perform preventive maintenance and repair work on electric motors, gas, and diesel engines, pumps, compressors, and control equipment.
- Make repairs and perform routine preventive/predictive maintenance to the equipment used in the collection, transport, and treatment of wastewater.

- Operate heavy construction equipment.
- Read and interpret gauges and other recording devices and interpret the information as it relates to repair and maintenance activities.
- Safely and effectively use and operate hand tools, mechanical equipment, power tools, and equipment required for the work.
- Maintain manual and automated logs, records, reports, and charts.
- Follow department policies and procedures related to assigned duties.
- Understand and follow oral and written instructions.
- Make basic to complex arithmetic computations.
- Organize and prioritize a variety of projects and multiple tasks in an effective and timely manner.
- Maintain attention to detail and accuracy.
- Operate modern office equipment including computer equipment and specialized software applications programs.
- Identify and take appropriate action when operating problems occur.
- Effectively communicate in person, over the telephone, and in writing.
- Use tact, initiative, prudence, and independent judgment within general policy and legal guidelines.
- Establish and maintain effective working relationships with those contacted in the course of the work.
- Perform work in confined spaces, following required confined space entry procedures.

**EDUCATION AND EXPERIENCE:**

*Any combination of training and experience which would provide the required knowledge, skills, and abilities is qualifying. A typical way to obtain the required qualifications would be:*

Maintenance Mechanic I and II: Equivalent to the completion of High School Diploma or General Equivalency Diploma.

Maintenance Mechanic I: One (1) year of mechanical maintenance experience. Experience in wastewater treatment facilities is desired.

Maintenance Mechanic II: Three (3) years of mechanical maintenance experience. Experience in wastewater treatment facilities is desired.

**Required Qualifications:**

**Maintenance Mechanic I/II**

- Possession of a Class C driver's license required by the State of California, Department of Motor Vehicles, to perform the duties of the position. Continued maintenance of said driver's license in compliance with established District vehicle operation standards, and the ability to be insured for the operation of a vehicle/District vehicle in accordance with the terms and conditions of the District's insurance program are conditions of continuing employment. The California Sanitation Risk Management Authority (CSRMA) driving standards.
- 40-hour HAZWOPER certificate within one (1) year of employment.

### **Maintenance Mechanic I**

- Possession of, or ability to obtain within 18 months of date of hire, a California Water Environment Association (CWEA) – Mechanical Technologist Grade I certificate.

### **Maintenance Mechanic II**

- Possession of, or ability to obtain within 18 months of date of hire, a California Water Environment Association (CWEA) – Mechanical Technologist Grade II certificate.

### **Additional Requirements:**

**Ability to be on standby for after hour emergency call outs and acknowledge the notification within 15 minutes when on standby duty. If an emergency requires the employee to return to work, they must do so within 1 hour of responding to the notification.**

Employee must pass a respiratory fit test within 2 months of employment and adhere to District respiratory policy which specifies facial hair restrictions.

All Carmel Area Wastewater District employees are, by State and Federal law, **Disaster Service Workers**. The roles and responsibilities for Disaster Service Workers are authorized by the California Emergency Services Act and are defined in the California Labor Code. In the event of a declaration of emergency, any employee of the District may be assigned to perform activities which promote the protection of public health and safety or the preservation of lives and property. Such assignments may require service at locations, times, and under conditions that are significantly different than the normal work assignments and may continue into the recovery phase of the emergency.

If a "Local Emergency" is declared during the employee's shift, employees will be expected to remain at work to respond to the emergency needs of the community. If a "Local Emergency" is declared outside of the employee's shift, employees must make every effort to contact their direct supervisor or department head to obtain reporting instructions as Disaster Service Workers.

### **PHYSICAL DEMANDS**

*The physical demands and work environment described here are representative of those an employee encounters while performing the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions:*

#### **Standing:**

- Average Frequency: Greater than 9 times per day
- Average Duration: Short (Less than 1 hour)
- Maximum Frequency: Greater than 9 times per day
- Maximum Duration: Short (Less than 1 hour)
- Surfaces: Office – carpet, tile; field/plant – concrete, asphalt, dirt, gravel, mud, metal grating, grass, sloped and uneven terrain

- Description: Performs while utilizing a variety of basic hand or power tools, utilizing a shovel, pick or digging bar, sledgehammer, grinders, chop saw, presses, skill saw, operating a jackhammer, performing a variety of semi-skilled work including carpentry, electrical, plumbing, painting, landscaping, custodial, and heating.

### **Walking:**

- Average Frequency: Greater than 9 times per day
- Average Duration: Medium (1 to 2 hours)
- Maximum Frequency: Greater than 9 times per day
- Maximum Duration: Long (2 to 8 hours)
- Surfaces: Office – carpet, tile; field/plant – concrete, asphalt, dirt, gravel, mud, metal grating, grass, sloped and uneven terrain
- Description: Performs while relocating tools, equipment, parts, walking within the plant, to and from field sites, operating a jackhammer, shoveling, inspecting equipment, painting, vacuuming, sweeping, mopping, maintaining landscaping and during traffic safety setups.

### **Sitting:**

- Average Frequency: 4 to 8 times per day
- Average Duration: Short (Less than 1 hour)
- Maximum Frequency: Greater than 9 times per day
- Maximum Duration: Long (2 to 8 hours)
- Surfaces: Cushioned vehicle seat, office chair
- Description: Performs while working at a desk station, during trainings, operating equipment including a forklift, golf cart, tractor, backhoe, pickup truck.

### **Kneeling/Crouching/Squatting:**

- Average Frequency: 4 to 8 times per day
- Average Duration: Short (Less than 1 hour)
- Maximum Frequency: Greater than 9 times per day
- Maximum Duration: Short (Less than 1 hour)
- Surfaces: Office – carpet, tile; field/plant – concrete, asphalt, dirt, gravel, mud, metal grating, sloped and uneven terrain
- Description: Performs while repairing and servicing equipment, retrieving and setting items on and off lower shelves or the ground, retrieving trash, cleaning toilets, urinals, cleaning windows, polishing furniture, painting in conjunction with utilizing rollers or brushes, performing carpentry duties, electrical, plumbing, greasing or lubing equipment, remodeling and assembling cabinets, counters, drawers, sanding, texturing and repairing walls, repairing and installing building hardware including door handles, accessing pipes, fixtures, valves, clearing clogged plumbing fixtures.

### **Crawling:**

- Average Frequency: 1 to 3 times per month
- Average Duration: Short (Less than 1 hour)
- Maximum Frequency: 4 to 8 times per month
- Maximum Duration: Short (Less than 1 hour)
- Surfaces: Office – carpet, tile; field/plant – concrete, asphalt, dirt, gravel, mud, metal grating, sloped and uneven terrain
- Description: Performs while accessing restricted areas including plumbing/pipes, inspecting equipment, performing carpentry tasks, accessing mechanical equipment or during plumbing tasks.

### **Laying on Back/Stomach:**

- Average Frequency: 1 to 3 times per month
- Average Duration: Short (Less than 1 hour)
- Maximum Frequency: 4 to 8 times per month
- Maximum Duration: Short (Less than 1 hour)
- Surfaces: Office – carpet, tile; field/plant – concrete, asphalt, dirt, gravel, mud, metal grating, sloped and uneven terrain
- Description: Performs while inspecting and repairing equipment including plumbing and mechanical.

### **Climbing/Balancing:**

- Average Frequency: Greater than 9 times per day
- Average Duration: Short (Less than 1 hour)
- Maximum Frequency: Greater than 9 times per day
- Maximum Duration: Medium (1 to 2 hours)
- Surfaces: Ladder or stair steps, vehicle floorboards
- Description: Performs while ascending or descending extension ladders up to 40 feet, stepladders 10 to 12 feet, stair steps at plant sites, accessing vehicle cab 1 to 3 steps.

### **Reaching:**

#### *Above Shoulder Level:*

- Average Frequency: 4 to 8 times per day
- Average Duration: Short (Less than 1 hour)
- Maximum Frequency: Greater than 9 times per day
- Maximum Duration: Medium (1 to 2 hours)

- Description: Performs while repairing and servicing equipment including plumbing in conjunction with utilizing a variety of hand or power tools, replacing lamps or lights, retrieving equipment over railing, painting in conjunction with utilizing rollers or brushes, polishing, carpentry work including assembling cabinets, counters, sanding, texturing or repairing walls. Unilateral or bilateral upper extremities from a less than full-to-full extensions at each occurrence.

*Between Waist and Shoulder Level:*

- Average Frequency: Greater than 9 times per day
- Average Duration: Medium (1 to 2 hours)
- Maximum Frequency: Greater than 9 times per day
- Maximum Duration: Medium (1 to 2 hours)
- Description: Performs while operating a variety of equipment including forklift, truck, golf cart, tractor, backhoe, man lift in conjunction with maneuvering levers and a steering wheel, retrieving and relocating tools, supplies, equipment, inspecting, troubleshooting and repairing equipment, utilizing a variety of basic or power tools including a shovel, pick, digging bar, sledgehammer, grinders, chop saw, presses, skill saw, operating a jackhammer, maintaining plumbing, painting in conjunction with utilizing brushes or rollers, performing custodial tasks including sweeping, vacuuming, utilizing a squeegee, shampooer, extractor to clean floors, performing a variety of carpentry work including remodeling and assembling of cabinets, counters, drawers, renovating, relocating, altering workstations, sanding, texturing and repairing walls, repairing and installing building hardware including door handles, repairing plumbing systems, during traffic setup. Unilateral or bilateral upper extremities from a less than full-to-full extensions on each occurrence.

*Below Waist Level:*

- Average Frequency: 4 to 8 times per day
- Average Duration: Short (Less than 1 hour)
- Maximum Frequency: Greater than 9 times per day
- Maximum Duration: Medium (1 to 2 hours)
- Description: Performs while repairing and servicing equipment, retrieving or setting items on and off lower shelves or the ground, painting in conjunction with utilizing rollers or brushes, landscaping including utilizing basic hand tools to repair irrigation systems, custodial tasks including polishing furniture, utilizing a squeegee to clean windows, cleaning toilets, urinals, wiping walls, retrieving trash or debris, lubricating equipment, installing water meters, performing a variety of carpentry work including remodeling and assembling cabinets, counters, drawers, sanding, texturing and repairing walls, installing building hardware, marking utilities. Unilateral or bilateral upper extremities from a less than full-to-full extensions on each occurrence.

**Pushing/Pulling:**

- Average Frequency: 1 to 3 times per day
- Average Duration: Short (Less than 1 hour)
- Maximum Frequency: Greater than 9 times per day

- Maximum Duration: Medium (1 to 2 hours)
- Description: Performs while utilizing a shovel, digging bar or pick while digging, operating a jackhammer a combination of pushing, pulling, partial lifting and guiding, utilizing wrenches to remove and secure bolts, pry bar to secure equipment, dollies or carts to relocate supplies, pallet jacks, relocating hoses, utilizing grinders, electric skill saws, chop saws, a press, drills, chain saw, utilizing a metal hook to remove or replace a manhole lid, mopping, sweeping, vacuuming, utilizing a squeegee to clean windows or mirrors, utilizing rollers or brushes to paint, utilizing saws, installing cabinetry. Unilateral or bilateral arm use.

### **Twisting/Rotating:**

#### *Waist:*

- Average Frequency: 4 to 8 times per day
- Average Duration: Short (Less than 1 hour)
- Maximum Frequency: Greater than 9 times per day
- Maximum Duration: Medium (1 to 2 hours)
- Description: Performs while accessing restricted areas, equipment, inspecting equipment, shoveling, repairing, servicing, and maintaining equipment in conjunction with utilizing a variety of tools, driving. The motion is from center to right back to center or center to left back to center up to 20-degrees.

#### *Neck:*

- Average Frequency: Greater than 9 times per day
- Average Duration: Short (Less than 1 hour)
- Maximum Frequency: Greater than 9 times per day
- Maximum Duration: Short (Less than 1 hour)
- Description: Performs while aiding visually, operating equipment including a forklift, truck, golf cart, tractors, backhoes, man lifts, servicing and repairing and maintaining a variety of equipment including plumbing, electrical, while painting, heating and ventilation, custodial tasks, performing carpentry duties, during normal body mechanics. The motion is from center to right back to center or center to left back to center up to 45-degrees.

#### *Wrists:*

- Average Frequency: Greater than 9 times per day
- Average Duration: Short (Less than 1 hour)
- Maximum Frequency: Greater than 9 times per day
- Maximum Duration: Short (Less than 1 hour)
- Description: Performs while utilizing a variety of tools including drills, pliers, ratchets, screwdrivers, saws, digging tools, Allen wrenches, manipulating nuts, bolts, screws, small parts, shoveling, utilizing rollers or brushes while painting, utilizing a vacuum, sweeping, mopping, utilizing a metal hook to remove or replace a manhole lid. Unilateral or bilateral hand use.

**Bending:***Waist:*

- Average Frequency: 4 to 8 times per day
- Average Duration: Short (Less than 1 hour)
- Maximum Frequency: Greater than 9 times per day
- Maximum Duration: Short (Less than 1 hour)
- Description: Performs while repairing and servicing equipment, retrieving and setting items on and off lower shelves or the ground, painting in conjunction with utilizing rollers or brushes, landscaping including utilizing basic hand tools to repair irrigation systems, custodial tasks including polishing furniture, utilizing a squeegee to clean windows, cleaning toilets, urinals, wiping walls, retrieving trash or debris, lubricating equipment, performing a variety of carpentry work including remodeling and assembling cabinets, counters, drawers, sanding, texturing and repairing walls, installing building hardware, marking utilities. The motion is in a forward direction up to 5 to 65-degrees.

*Head/Neck:*

- Average Frequency: Greater than 9 times per day
- Average Duration: Short (Less than 1 hour)
- Maximum Frequency: Greater than 9 times per day
- Maximum Duration: Short (Less than 1 hour)
- Description: Performs while utilizing a variety of basic hand or power tools, utilizing a shovel, pick or digging bar, sledgehammer, grinders, chop saw, presses, skill saw, operating a jackhammer, performing a variety of semi-skilled work including carpentry, electrical, plumbing, painting, landscaping, custodial, and heating and ventilation tasks, installing water meters, cleaning floors, restrooms, toilets, windows, general office space areas, meeting rooms, performing a variety of carpentry work including remodeling and assembling cabinets, counters, drawers, renovates, relocates and alters employee workstations while sanding, during traffic setup, during normal body mechanics.

*Wrists:*

- Average Frequency: Greater than 9 times per day
- Average Duration: Short (Less than 1 hour)
- Maximum Frequency: Greater than 9 times per day
- Maximum Duration: Short (Less than 1 hour)
- Description: Performs while utilizing a variety of tools including drills, wire cutters, wire strippers, tape measures, sockets, socket adapters, ratchets, tape measures, wrenches, screwdrivers, hammers, Allen wrenches, shovel, pick, digging bar, manipulating bolts, nuts, small parts, screws, operating a jackhammer, operating equipment including maneuvering a steering wheel and levers, sweeping, mopping, vacuuming, utilizing rollers or brushes while painting, utilizing carpentry tools, utilizing a metal hook to remove or replace a manhole lid, during normal body mechanics. Unilateral or bilateral hand use.

## **Lifting/Carrying:**

### *0 to 10 lbs.:*

- Objects: Smaller power tools (drills, grinders, air tools, grease gun, skill saw, etc.); hand tools (wrenches, screwdrivers, pliers, hammers, ratchets, strippers/cutters, etc.); small tool bag, socket set, fasteners; couplings, short sections of metal/pipe or wood; miscellaneous parts, wiring, levels, tape measures, small fire extinguisher, electrical cords, diagnostic equipment, aerosol cans, rollers, brushes, one-gallon containers, two safety cones, step-stool/ladder, broom, squeegee/mop, shovel, binders, manuals, writing utensils, telephone handset, chair
- Average Frequency: Ongoing - tasks performed throughout shift
- Average Duration: Seconds to less than 15 minutes at a time
- Maximum Frequency: Ongoing - tasks performed throughout shift
- Maximum Duration: Seconds to less than 15 minutes at a time
- Height: Ground to shoulder or above

### *0 to 10 lbs.:*

- Distance: Average - less than 100 feet including ascending/descending stairs. Maximum - 1,000 feet
- Description: Using hand or power tools as needed, performs a variety of lifts and carries to complete the following: carpentry, electrical, plumbing, painting, landscaping, cleaning, assembling/disassembling, diagnosing, repairing, bolting, screwing, cleaning, sweeping, stocking, storing, office duties, paperwork/manuals, writing.

### *11 to 25 lbs.:*

- Objects: Larger hand tools (large sledgehammer, large wrenches), medium power tools (pneumatic nail gun, reciprocating saws, hammer-drill, core drill), medium tool bag, bucket of tools, 3-gallon containers, up to five safety cones, medium fire extinguisher, 6' ladder, pneumatic pipe plug, shovel with dirt, picking/digging tools, sections of metal/pipe or wood, boxes of tools/parts; valves, 100' of  $\frac{3}{4}$ " hose, 20' of 2" suction hose, 13-gallon trash can, partial box of paper/files
- Average Frequency: Routine- 1 per hour
- Average Duration: Seconds to less than 15 minutes at a time
- Maximum Frequency: 8 times per hour
- Maximum Duration: Seconds to less than 15 minutes at a time
- Distance: Less than 100 feet, including ascending/descending stairs
- Height: Ground to shoulder or above
- Description: Using hand or power tools as needed, performs a variety of moderate duty lifts/carries to complete the following: carpentry, electrical, plumbing, painting, landscaping, assembling/disassembling, diagnosing/repairing, bolting, screwing, cleaning, stocking, storing, valve removal/replacement, battery removal/replacement; small grate and lid removal/replacement; digging and filling. Retrieval, set-up, breakdown and replacement of equipment for projects.

*26 to 50 lbs.:*

- Objects: Large tool bag/kit, metal chain, small electric motors, 12' ladder, 20' extension ladder, jack hammer, concrete and metal debris, flanges, couplers, sections of metal/pipe or plastic/wood, smaller valves, small impellers, band saw, flange, pipe vice, oil bucket, blower, shaft, threader, traffic signage, wheelbarrow, 5-gallon container/bucket, empty pallet, case of paper or full box of files, 30-gallon garbage can, 50' of 1" hose, 10' of 6" suction hose, valve box lid, car battery
- Average Frequency: 4 times per day
- Average Duration: Seconds to less than 10 minutes at a time
- Maximum Frequency: 4 times per hour
- Maximum Duration: Up to 15 minutes at a time
- Distance: Less than 50 feet, including ascending/descending stairs
- Height: Ground to shoulder
- Description: Using hand or power tools as needed, performs a variety of medium duty lifts/carries to complete the following: carpentry, electrical, plumbing, painting, landscaping, assembling/disassembling, bolting, stocking, storing, valve removal/replacement, battery removal/replacement; grate and lid removal/replacement; digging and filling. Retrieval, set-up, breakdown and replacement of equipment for projects. **Confined space winch.** Jackhammer use includes pushing, pulling, partial lifting, lifting, and guiding.

*51 to 60 lbs.:*

- Objects: 28' extension ladder, 10' step ladder, confined space winch, wheelbarrow, medium electric motor, medium VFD unit, steel flanges, steel elbows/necks/spools, couplers, longer sections of metal/pipe or wood, 100' of 1" hose, truck battery, 30' of 2" hose, 15' of 6" hose, 4' x 4' aluminum vault lid, sandbag, small steel stormwater grating
- Average Frequency: 4 times per month
- Average Duration: Seconds at a time
- Maximum Frequency: 4 times per day
- Maximum Duration: Less than 1 minute at a time
- Height: Ground to waist
- Description: As needed for activities including repair and construction projects; retrieval, set-up, breakdown and replacement of project equipment; confined space entry set-up/breakdown including davit arm, accessing vaults, collections infrastructure repair, flood preparations.

*61 to 120 lbs. (two-person lifts):*

- Objects: 32' extension ladder, AA frame ladder, forklift propane cylinder [63 pounds shoulder height], 2' submersible pump, portable railing anchor plate, trash pumps, vault lid, electric motors, VFDs, confined space base tripod, bollards, jumping jack, steel manhole covers, steel piping, 15' or more of large suction hose, generator, 8" x 20' suction pipe, large steel stormwater grating, various steel valves, flanges, elbows up to 150 lbs.
- Average Frequency: As assigned - 1 to 4 times per month
- Average Duration: Seconds at a time
- Maximum Frequency: As assigned - 4 times per day
- Maximum Duration: Less than a minute at a time
- Distance: Less than 25 feet

- Height: Ground to waist
- Description: As needed for non-routine projects and activities including: repair, replacement or construction projects; confined space entry set-up/breakdown, accessing vaults, collections infrastructure repair. Lifting straps are to be used if safety will be increased.

*120+ lbs. Not a job requirement, any lifts above this threshold will be accomplished via lifting equipment.*

### **Dragging/Pulling:**

*76 to 100 lbs. (single-person pulls):*

- Objects: Floor jack, manhole covers, 100' of charged 1" water line, charged suction lines, metal grating, aluminum pipe, heavy duty electrical wire, long sections of plastic or wood, collections equipment jetting lines, collections camera tether/cable
- Average Frequency: 4 times per month
- Average Duration: Seconds to less than 5 minutes at a time
- Maximum Frequency: Four times per day
- Maximum Duration: Seconds to less than 10 minutes at a time
- Distance: Less than 5 feet to 100' feet for collections lines
- Height: Ground level or partial lift of one end from ground
- Description: A combination of pulling and/or partial lifting as needed to move heavy objects including: using a floor jack, removing and replacing a manhole lid with a metal hook, dragging hose, dragging lengths of pipe, wood or metal, dragging metal grating. Lifting straps are to be used if safety will be increased.

### **Grasping:**

*Simple:*

- Average Frequency: Ongoing - tasks performed throughout shift
- Average Duration: Seconds to less than 15 minutes at a time
- Maximum Frequency: Ongoing - tasks performed throughout shift
- Maximum Duration: Seconds to less than 15 minutes at a time
- Description: Performs while operating a variety of equipment (forklifts, truck, golf cart, tractor, backhoe, etc.); operating small power tools; using small hand tools; retrieving and relocating miscellaneous tools, parts; utilizing a telephone handset, handling paperwork; utilizing calking and grease guns; spraying aerosol cans; painting with rollers or brushes, mopping, sweeping, vacuuming, landscaping; scraping, utilizing a squeegee; any grasping necessary to complete required lifts/carries below 25 lbs. Unilateral and bilateral hand use.

*Power:*

- Average Frequency: Routine- 1 per hour
- Average Duration: Seconds to less than 15 minutes at a time
- Maximum Frequency: 8 times per hour
- Maximum Duration: Seconds to less than 15 minutes at a time

- Description: Performs while utilizing a shovel, digging bar or pick while digging; operating a jackhammer in conjunction with pushing, pulling, partial lifting and guiding; utilizing wrenches to remove or secure and torque bolts; using pry bars, wrenches, levers; tie down and securing equipment; utilizing wide variety of power tools grinders, electric chop saw, presses, drills, chainsaw, installing cabinetry including repairing walls. Any grasping necessary to complete required lifts/carries and pulls above 25 lbs. Unilateral and bilateral hand use.

**Fine Manipulation:**

- Average Frequency: 4 times per day
- Average Duration: Seconds to less than 5 minutes at a time
- Maximum Frequency: 2 to 3 hours
- Maximum Duration: Seconds to less than 10 minutes at a time
- Description: Performs while using of small hand tools (screwdrivers, small sockets, Allen wrenches, etc.), placing bolts, nuts, screws, nails, small parts; joining small components; using electrical testing equipment; making equipment adjustments, using machine-user interfaces, utilizing a writing utensil, using computer keyboards/tablets and mouse, touchpad or touch screens; using telephone. Unilateral or bilateral hand use.

**Machine/Tools:**

*The machines and tools listed here are representative of those an employee encounters while performing the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions:*

- Drills
- Pneumatic nail gun
- Pliers
- Tape measures
- Sockets
- Socket adapters
- Ratchets
- Wrenches
- Screwdrivers
- Reciprocating saws
- Hammers
- Diagnostic tools
- Allen wrenches
- Digging bar
- Pick
- Writing utensil
- Telephone handset
- Sledgehammer
- Grinders
- Air tools
- Grease gun
- Skill saw
- Levels
- Square
- Wire strippers
- Spray can
- Roto hammer
- Jackhammer
- Pipe wrenches
- Presses
- Chop saw
- Computer keyboard, mouse, monitor
- Band saw
- Cut off saw
- Forklift
- 28-ton truck
- Golf cart
- Tractor
- Backhoe
- Aerial lift
- Dollies
- 4-wheeled cart
- Wrenches
- Motors
- Ladders
- Valves
- Generators
- Electric snakes
- Rollers
- Blowers
- Vacuum
- Broom
- Mop
- Squeegee
- Paint brushes

## Weights and Measures:

*The items listed here to be weighed or measured are representative of those an employee encounters while performing the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions:*

### Items Weighed:

- 4" C-900 pipe fitting – 6 lbs.
- 6" C-900 pipe fitting – 12 lbs.
- Gas Can (2 gallon) – 13 lbs.
- Suction hose (2" x 20' Green PVC) – 16 lbs.
- 6" x 4" I-beam – 20 lbs.
- Flow thru plug 6-8" – 20 lbs.
- 8" C-900 – 23 lbs.
- Pneumatic plug 10-18" – 25 lbs.
- Pipe (4" x 20' SDR 35) – 27 lbs.
- 3/8" chain – 28 lbs.
- Valve box lid (B12) – 28 lbs.
- Shoring (2' x 24-36" cylinder) – 30 lbs.
- Discharge hose (2" x 50' blue PVC) – 30 lbs.
- Cut off saw (hot saw) – 32 lbs.
- Jack hammer (30 pound) – 33 lbs.
- Gas can (5 gallon) – 33 lbs.
- Firehose (2.5" x 50') – 34 lbs.
- Confined space blower – 35 lbs.
- Electric motor (1 HP) – 35 lbs.
- Ventilation Blower (12V) – 36 lbs.
- Confined space winch – 41 lbs.
- Storm drain inlet (2x2) – 42 lbs.
- 20' extension ladder – 42 lbs.
- Concrete/Asphalt debris – 50 lbs.
- 6' plug hand crank – 50 lbs.
- Standard wheelbarrow (full) – 50 lbs.
- Metering vault lid (open) – 52 lbs.
- 28' extension ladder – 57 lbs.
- Traffic valve box (G5) – 58 lbs.
- Sandbags – 60 lbs.
- Pipe (4"x6' mission clay) – 60 lbs.
- Perma-Patch sack (60 pound) – 60 lbs.
- Concrete sack (60 pound) – 60 lbs.
- 2" Submersible sump pump – 60 lbs.
- Pipe (6"x20' SDR 35) – 61 lbs.
- Bumper crane assembly – 62 lbs.
- Lumber boards (2"x12"x16') – 64 lbs.
- Jack Hammer (60 pound) – 65 lbs.
- 2x4 grate – 71 lbs.
- Jet hose (pulling) – 71 lbs.
- Bollards (remove and replace) – 72 lbs.
- 32' extension ladder – 72 lbs.
- 4" plug valve – 75 lbs.
- 24" Manhole lid (open/lift) – 75 lbs.
- Concrete Sack (90 pound) – 90 lbs.
- Plywood (4'x8'x 1 1/8") – 94 lbs.
- Confined space base (tripod) – 95 lbs.
- Valve box (B12) – 96 lbs.
- Jack hammer (90 pound) – 97 lbs.
- Move furniture – 100 lbs.
- 2" Trash Pump (187 GPM) – 104 lbs.
- Pipe (8"x20' SDR 35) – 110 lbs.
- 4" gate valve – 114 lbs.
- 6" gate valve – 194 lbs.
- Manhole lid (36" diameter) – 229 lbs.

### **PERSONAL PROTECTIVE EQUIPMENT**

Depending on the hazard, the employee is required to wear head, hearing, eye, foot, face, respiratory, body harness, and/or hand protection.

### **ENVIRONMENTAL ELEMENTS**

- Employee is frequently exposed to outside weather conditions.
- Employee is occasionally exposed to high, precarious places.
- Employee is exposed to confined spaces; fumes or airborne particles; toxic or caustic chemicals.
- Employee is exposed to unpleasant smells and odors.
- Employee is exposed to moderate cold, moderate heat.
- Employee is exposed to risk of electrical shock or mechanical hazards.
- Employees in this classification may perform duties that involve a potential risk of exposure to blood-borne pathogens.
- The noise level in the work environment is usually loud.
- Employee, as needed, works indoors, office setting, climate controlled.

**NOTICE:** The examples of functions, responsibilities, work environment, physical demands etc. listed in this Job Analysis are representative only, and not exhaustive of the tasks that an employee may be required to perform.