



Bock Consulting

Job Analysis

Job Title	Plumbing Shop Crew Chief – Marine Maintenance	Worker	_____
DOT Number	862.381-030 and 862.131-018	Claim Number	_____
Employer	Port of Seattle	Employer Phone #	_____
Employer Contact	Jeff Gunn	Date of Analysis	6/21/11; 11/22/16

- Job of Injury
 Transferable Skills Job
 New Job
 40 Hours Per Week
 5 Days Per Week

Job Description, Essential Functions, Tasks and Skills:



The Port of Seattle is a municipal corporation created on September 5, 1911 by the voters of King County. The Port of Seattle is divided into operating divisions, plus other departments that support the divisions and the broad mission of the Port: 1) Aviation Division, 2) Maritime Division, and 3) Economic Development Division.

The Maritime Division owns and operates approximately 1,200 acres of moorage, cargo-related, and cruise ship facilities. The Maritime Division employs a maintenance staff, which is responsible for general facility upkeep, pier and moorage system repairs, and utility maintenance.

This job analysis is for an individual working as the Plumbing Shop Crew Chief for Marine Maintenance.

Essential Functions:

The Plumbing Shop Crew Chief is responsible for supervising and directing the daily work activities of the Plumbers that provide services to all of the various business groups within the Seaport and Real Estate Divisions. Plumbers complete a wide variety of plumbing-related tasks. It was estimated that 75%-80% of the work performed by the Plumbers can be classified as basic plumbing work, including unclogging toilets and pipes, repairing leaking fixtures and pipes, removing old fixtures and pipes, and installing new fixtures and pipes. In general, the Plumbers will be called for installation, maintenance or repair issues related to potable (drinkable) water, sewer, storm water, and air, and may be called for issues related to natural gas lines or heating





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systems (steam/boiler systems).¹ This work may be located below ground, above ground, or under docks.

Plumbers have a shop located at 25 S. Horton St. in Seattle. The Crew Chief primarily works from an office in the shop, but will visit project locations, which may be in buildings, yard areas, or under piers and docks.

The work performed by the Plumbing Shop Crew Chief can be categorized as follows:



Work Category	Estimated Time
Office/desk/administrative work (including meetings)	70-80%
Supervising work and personnel and providing assistance in and around shop	5-10%
Supervising work and personnel and providing assistance in the field	10-15%
Performing trade-specific work	0-10%
Total	100%

Tasks assigned to Plumbing Shop Crew Chief may include:

- Receive notifications of new work orders/requests (via telephone, email, or job tracking system). Develop plans for completing requested projects. Plan for material, equipment, PPE, and staffing needs.
- Order parts, supplies, and or materials needed for projects. Work with Purchasing to ensure correct products and items are ordered and available when needed. Periodically work with vendors related to parts, supplies, and or materials needed.
- Prepare and or review site specific safety plan for each project/work task. Prepare job plans and supporting documentation as needed.
- Prepare personnel schedules and assign work tasks.
- Coordinate scheduling with other trades to ensure materials, equipment, and workers from other trades are available as needed to complete assigned work orders/projects. Coordinate with outside vendors/contractors/entities. Coordinate scheduling with Port Facility Maintenance Managers and tenants.
- Enter time by work order on a daily basis into job tracking system (Maximo). Review daily time entered by crew and approve.

¹ Work related to water main and fire hydrant installations, or fire protection system maintenance is generally assigned to the Sprinkler Fitters group.



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- Ensure description of work completed is available and or correct in work log.
 - Send and respond to electronic mails.
 - Provide training to one or more crew members to cover duties of Crew Chief when Crew Chief is not working/available.
 - Visit project sites and oversee/inspect completed work. Ensure work is being performed in a safe manner.
 - Meet/connect with crew daily to manage workflow, address issues, and reassign personnel based on work demands.
 - Lead periodic meetings to provide training and discuss important safety issues.
 - Attend periodic meetings with supervisors and other entities.
 - Coordinate work priorities with supervisors.
 - Assist crew members with technical input, answer questions from crew, and provide troubleshooting advice as needed.
 - Respond to requests for bids. Review work scope, materials, equipment, and staffing needs, and prepare an estimate related to the requested work.
 - Ensure crew has current certifications and or training as required by policy, law, or ordinance.
 - Review drawings, plans, and schematics for potential projects.
 - Complete all required forms and documents.
 - Assist crew in choosing tools, equipment and materials.
 - Conduct inspections of Port properties to identify potential issues. Document issues and create work orders.
 - Gathering and addressing maintenance requests from Port tenants.
 - Request parts, supplies, and or materials needed for projects.
 - Prepare and or review job hazard analysis for each project. Review job plan. Ensure work is performed in a safe manner.
 - Responding to emergency requests for assistance and act as a coordinator for other trades that may be used in the response (i.e., a contractor digs up a pipe or a pipe bursts underground, Equipment Operators and Laborers may be used to reach the area in need of repair).
- NOTE: The Crew Chief generally works 40 hour work weeks, however it is possible to have to work overtime and/or be called in during the evening hours to address a critical situation.
- Repairing and/or obtaining and installing plumbing fixtures in buildings. The Plumbers will repair or replace fixtures depending on what is most cost effective on a long-term basis.
 - Replacing pumps in sewer lift stations when the installed pumps fail.





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- Testing backflow prevention assemblies as required by the City of Seattle. Backflow prevention devices are installed in water systems to prevent contaminants from reaching the potable/ drinkable water supply (the Plumbers must test approx. 385 assemblies). If the assembly being tested is found to be faulty, the Plumbers repair or replace the backflow prevention assembly.
- Some tasks and work may be performed while in a boat or standing on a work float.



Necessary skills and abilities may include:

- Identifying the best method to correctly complete an assigned task.
- Having the skills to complete the assigned task(s) in a timely and efficient manner.
- Work in a professional manner while in the field. Often the Plumbers are visible to Port tenants and the public, and the Plumbers need represent the Port well while working.
- Using hand and power tools to perform assigned tasks.
- Having the physical abilities to perform all of the tasks assigned to a Plumber.
- Having the ability to follow directions closely and to be detailed oriented while working.
- Being able to work independently without immediate direct supervision, but also within a team environment when necessary.
- Being able to work in any kind of weather, including working from a boat.
- Working knowledge of Windows-based computers and related accessories. Working knowledge of time tracking software, keyboarding and data input skills, and knowledge of electronic mail software.

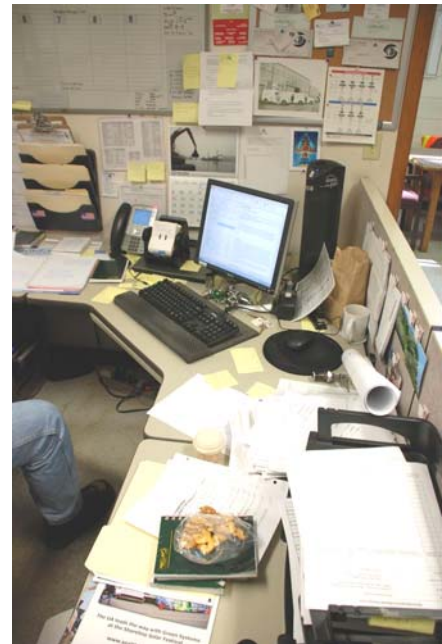




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Machinery, Tools, Equipment, Personal Protective Equipment:

- Computer, computer accessories, and project management software (Maximo).
- General office equipment, such as desk, chair, fax machine, telephones, and calculator.
- General office supplies, such as pens/pencils, notepads, binders, file folders, and copy paper.
- Hand tools and power tools, including pipe wrenches (generally made of aluminum to reduce weight), hammers, screwdrivers, pliers, mauls, drills, reciprocating saws, roto-hammers, shovels, and tape measures.
- Tool boxes or buckets.
- Concrete, steel, cast iron, copper, PVC/plastic pipe.
- Pipe fittings, threaded rod, and other hardware. Containers holding fittings.
- Soldering torches and related items (including gas canisters and solder). Pipe glue.
- Sewer machines/motorized snakes (50 lbs. to 100 lbs.)
- Chop saw (used for cutting sections of larger pipes – 40 lbs.). Chain saw.
- Pipe threaders. Pipe cutters.
- Nylon straps and ropes. Portable generators. Air compressors.
- Water/sewage pumps.
- Work trucks with storage boxes and hoists. Scissor lifts and boom lifts. Forklifts.
- Work skiffs/boats (14 and 16 foot boats) with outboard engines (larger boat has center console steering).
- 2-way radios. Traffic cones.
- Tide chart



Workers are required to wear a safety vest at all times. Eye and ear protection, respirators, and hard hats are required as necessary. Plumbers may also wear gloves, kneepads, approved safety boots, rain gear, and chainsaw chaps. Fall arrest harnesses are worn when working at heights, or may be worn when working over or near a sewer lift station.

When working on or within 6 feet of an edge of the water, Plumbers must wear personal floatation devices (“PFDs”).



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Education / Training:

The Plumbing Shop personnel, including the Crew Chief, are members of the United Association Plumbers and Pipefitters Local 32-Seattle.

The Plumbing Shop Crew Chief would be a Journeyman level Plumber with significant experience in the plumbing trade. Initial experience would generally be gained through an apprenticeship program, after which workers become Journeyman Plumbers.

Crew Chiefs must complete the Front Line Supervisor Training as a Port of Seattle Requirement. This training is offered once a year and must be completed during the first year as a Crew Chief.

A Boater's Education Card is required for all employees who perform work while in a boat or standing on a work float.

Training and or enough hands-on experience with computers to have a working knowledge of Windows-based computers and related accessories, time tracking software, keyboarding, data entry, electronic mail software.

Per the Dictionary of Occupational Titles (DOT):

862.381-030 Plumber, Maintenance Specific Vocational Preparation (SVP): 7 (From two to four years)

862.131-018 Plumber Supervisor, Maintenance SVP: 8 (From four to ten years)



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COGNITIVE AND BEHAVIORAL ELEMENTS/DEMANDS

Frequency Definitions:	
Continuously = Occurs 66-100% of the time.	Occasionally = Occurs 1-33% of the time
Frequently = Occurs 33-66% of the time.	Rarely = May occur less than 1% of the time.
Never = Does not ever occur.	
Comprehension	
Articulating and comprehending information in conversations.	Continuously
Reading, comprehending, and using written materials.	Occasionally
Understanding and solving problems involving math and using the results.	Frequently
Using technology/instruments/tools & information systems.	Continuously
Working with two and three dimensional formats.	Frequently
Remembering	
Remembering spoken instructions.	Continuously
Remembering written instructions.	Continuously
Remembering visual information.	Continuously
Recalling information incidental to task at hand.	Continuously
Memorizing facts or sequences.	Frequently
Remembering simple instructions.	Continuously
Remembering detailed instructions.	Continuously
Learning & Processing	
Effectively learning and mastering information from classroom training.	Occasionally
Effectively learning and mastering information from on-the-job training.	Continuously
Learning from past directions, observations, and/or mistakes.	Continuously
Using common sense in routine decision making.	Continuously
Recognizing and anticipating potential hazards and taking precautions.	Continuously
Thinking critically and making sound decisions.	Continuously
Integrating ideas and data for complex decisions.	Occasionally
Determining and following precise sequences.	Frequently
Coordinating and compiling data and information.	Occasionally
Analyzing, synthesizing data and information.	Frequently
Tasking and Planning	
Performing repetitive or short-cycle work.	Continuously
Working under specific instructions.	Continuously
Completing complex tasks.	Occasionally
Directing, controlling, or planning for others as necessary for basic tasks.	Occasionally
Directing, controlling, or planning for others as necessary for complex tasks.	Rarely
Multi-tasking.	Continuously
Planning, prioritizing, and structuring daily activities.	Continuously



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Use Appropriate Behavior for Professional Work Environment	
Receiving criticism and accepting limits appropriately.	Frequently
Maintaining emotional control and organization under increased stress.	Continuously
Maintaining socially appropriate affect, temperament, and behavior.	Continuously
Monitoring own quality of performance and altering behaviors to correct mistakes or improve outcome.	Continuously
Working independently and/or unsupervised.	Continuously
Adapting to frequent interruptions, changes in priorities, or changes in work location.	Occasionally
Responding effectively to emergency situations.	Occasionally

Frequency Designations: Required Beneficial Not Necessary	
Maintaining Attendance and An Assigned Work Schedule	
Maintaining predictable and reliable attendance each work shift.	Beneficial
Being punctual.	Beneficial
Taking rest periods at set times or only at times determined by breaks in job responsibilities.	Not Necessary
Adjusting to a flexible schedule of work days and or shifts.	Beneficial



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PHYSICAL DEMANDS

N/A: Not Applicable

S: Seldom (1-10% of the time)

O: Occasional (10-30% of the time)

STRENGTH: Sedentary Light

F: Frequent (30%-70% of the time)

C: Constant (Over 70% of the time)

WNL: Within Normal Limits (talking, hearing, etc.)

Medium Heavy Very Heavy

Frequency

Comments

Sitting	C	While performing support and administrative tasks. While driving to job sites, attending meetings, or for short periods of time while working in the field.
Standing	S	Interchange with walking. Frequency will depend on assigned tasks. May include standing in a boat while working.
Walking	O	Interchange with standing. Frequency will depend on assigned tasks. Walking may be over concrete, asphalt, grating, or tile, or over uneven (such as rip-rap (large rocks) or dirt) or slippery surfaces (including mud and wet wooden docks).
Lifting (up to 10 pounds)	F	While lifting phone, radio, paperwork, office supplies, reference books supply catalogs, tools, fittings, short lengths of pipe, and smaller valves.
Lifting (10 to 60 pounds)	S	Boxes of plumbing fittings (up to 20 lbs.); bucket containing selected tools; cast iron snap cutter (20 lbs.). Toolbox; toilets; new water heaters; larger pipe fittings (10" repair flange – 50 lbs.); chop saw (40 lbs.). Lengths of pipe, larger valves, portable compressors and generators. Note: Heavier items are lifted by two workers, and machinery/equipment is used as much as possible to lift heavier items.
Carrying (up to 10 pounds)	F	While carrying phone, radio, paperwork, office supplies, reference books supply catalogs, tools, fittings, short lengths of pipe, and smaller valves.
Carrying (10 to 25 pounds)	S	Boxes of plumbing fittings (up to 20 lbs.); bucket containing selected tools; cast iron snap cutter (20 lbs.). Lengths of pipe and larger valves. Note: Heavier items are carried by two workers, and machinery/equipment is used as much as possible to carry heavier items. Trucks are parked as close to a work site as possible, and wheeled carts are used to transport items.
Pushing/Pulling (Up to 25 pounds of force).	S	Opening drawers or cabinets. Opening doors on buildings and vehicles. Potentially while using wrenches to tighten or loosen bolts/nuts, using a hammer or maul, pulling wheeled carts holding tools, and removing an sliding hatch (if lifted would weigh approx. 80 lbs.) or manhole covers out of the way.
Climbing Stairs/Ladders	S	Worker may encounter stairs in the shop facilities or when working in the field. Plumbers climb ladders when necessary (ladders can range from stepstools to extension ladders).
Working at Heights/ Balancing	S	Frequency depends on assigned tasks. Plumbers climb ladders, and may work from a man lift or while walking on staging constructed under docks. Plumbers in Marine Maintenance are also required to work from boats when necessary, which can take a significant amount of balancing.
Bending at Waist	O	Performing assessments and inspections. Repairing and/or installing items at or below waist level. Any work performed in a trench. Gathering materials and supplies.



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Bending Neck	C	While performing administrative tasks. All of the assigned tasks involve neck movement: conducting inspections, performing repairs, placing new pipe, installing new fixtures, climbing ladders, placing supports, digging, and gathering pipe and fittings.
Twisting at Waist	S	While maneuvering/reaching into work areas, uninstalling fixtures or pipes, installing fixtures or pipes, opening flow control valves, shoveling, and gathering supplies materials.
Crouching/Kneeling	S	Working below waist level, which may include working on plumbing located within cabinets, or working below the Plumber's feet in a hole in the dirt or on a dock. NOTE: Workers may wear kneepads while working.
Crawling	S	Limited. NOTE: Workers may wear kneepads while working.
Stooping	S	While entering/exiting work truck cab and enclosure on back of truck, and maneuvering into and out of work areas, including chases/utility corridors.
Reaching	O	While seated at desk. While conducting inspections, disassembling/removing fixtures and pipes, placing and securing new fixtures and pipes, climbing ladders, and gathering supplies and materials from truck or supply area. Most often between the waist and shoulder.
Driving	S	Driving truck or other vehicle.
Foot Controls	S	Driving work truck, and using safety switches on man lifts.
Repetitive Motion	S	The variety of tasks assigned to the Plumbers and the different steps necessary to complete the tasks limits the amount of repetitive motion encountered by the Plumbers.
Handling/Grasping	O	60 % Pinch Grasp 40 % Whole Hand Grasp
Fine Finger Manipulation	O	Processing paper work and using resource and supply books. Keys to start truck and enter buildings. Operating two-way radio. Gathering and holding couplings/small plumbing parts. Using wrenches, screwdrivers, and pliers, triggers on power tools.
Keyboarding	F	While entering time and work performed on a daily basis, creating and responding to electronic mail. Placing orders for materials.
Talking	C	Communicating with supervisors and other co-workers.
Hearing	C	Communicating with supervisors and other co-workers. Listening for hazards and alarms.
Seeing	C	Visual abilities would be considered important in this position.
Writing	F	While documenting inspections, completing forms and reports, and marking measurements.
Normal Job Site Hazards	S	Raw sewage, working in trenches (collapse), carrying heavy objects, working at heights (ladders, man lifts, or roofs), falling objects, striking head on overhead objects, working near moving vehicles, slippery walking surfaces, sharp tools, fumes, dust, noise, odors, vibrations, and capsizing while working in a boat. Drain cleaner, solder/flux, pipe glue, and caulking.
Expected Environmental Conditions	C	Work primarily performed inside temperature-controlled shop office. Worker may be exposed to external weather conditions when visiting the field, and may be exposed to noisy environments, dust, and fumes.



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The above job analysis represents the requirements of a specific job based on personal observations, discussions with employer representatives, and/or workers. On occasion, practicality and feasibility prevent the direct observation and/or gathering of objective quantifiable data. For this reason, a "best estimate" may have been used when reporting physical demand frequencies.

Analysis was done on the job site? Yes No

Job Analysis Reviewed By: Tom Berg, Jeff Gunn

Completed by Vocational Provider Brice York, B.A., CDMS

Date November 22, 2016 Signature of Vocational Provider



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FOR PHYSICIAN'S/EVALUATOR'S USE ONLY

- The injured worker can perform the physical activities described in the job analysis and can return to work on _____
- The injured worker can perform the physical activities described in the job analysis on a part-time basis for _____ hours per day. The worker can be expected to progress to regular duties in _____ weeks/months.
- The injured worker can perform the described job, but only with the modifications/ restrictions in the attached report and/or listed below. These modifications/restrictions are (check one):
 - Temporary for _____ weeks _____ months
 - Permanent
- The injured worker cannot perform the physical activities described in the job analysis based on the physical limitations in the attached report and/or listed below. These limitations are (check one):
 - Temporary for _____ weeks _____ months
 - Permanent

COMMENTS:

Date _____ Physician's/Evaluator's Signature _____

Physician's/Evaluator's Name Printed _____

PLEASE RETURN COMPLETED FORM VIA FACSIMILE TO:

Port of Seattle Employee Health & Safety Department at (206) 787-3406