

DACUM Research Chart for Class A Water Operator

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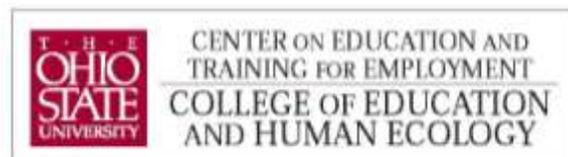
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DACUM Research Chart for Class A Water Operator

Duties		Tasks				
A	Manage Source Water	A-1 Identify source water area	A-2 Develop well head protection program	A-3 Implement well head protection program	A-4 Develop source water sampling program	A-5 Implement source water sampling program
	B	Manage Water Treatment Processes	B-1 Perform daily walk-through assessment	B-2 Monitor water usage	B-3 Maintain water pressure	B-4 Maintain chemical feed pumps (e.g., chlorine, potassium permanganate, phosphates)
C		Maintain Water Treatment Equipment	B-10 Install new equipment (e.g., chemical feed pumps, softeners, filters)		B-11 Oversee water system improvements (e.g., new lines, wells, valves)	B-12 Update plant flow diagram
	C-1 Maintain chemical feed pumps		C-2 Troubleshoot electrical problems	C-3 Replace electrical components (e.g., pressure switches, capacitors, relays)		C-4 Lubricate pumps/softener valves
	C-11 Replace pressure tanks		C-12 Perform filter inspections	C-13 Perform preventative maintenance	C-14 Maintain emergency equipment (e.g., generators, chemical feed pumps)	
D	Maintain Distribution System	D-1 Flush distribution system	D-2 Locate water lines (e.g., mains, service)	D-3 Record water meter readings	D-4 Exercise valves (e.g., main line, isolation)	D-5 Maintain hydrants
		D-12 Thaw frozen components (e.g., hydrants, lines, meters)		D-13 Maintain system maps		
E	Perform Water Sampling & Testing	E-1 Conduct chlorine residual testing (e.g., free, total)	E-2 Collect routine bacteria samples	E-3 Calibrate test kits (e.g., chlorine, hardness, iron)	E-4 Perform water hardness test	E-5 Perform iron test
		E-13 Collect nitrate/nitrite samples	E-14 Collect asbestos samples	E-15 Collect phosphate samples		
F	Maintain Environmental Compliance	F-1 Complete daily log	F-2 Prepare monthly operating report	F-3 Prepare quarterly reports	F-4 Submit regulatory reports (e.g., MOR, quarterly, lead & copper)	
		F-12 Implement sample siting plan	F-13 Develop emergency contingency plan	F-14 Implement emergency contingency plan	F-15 Prepare ODNR well withdrawal report	
G	Perform Administrative Tasks	G-1 Prepare operating budget	G-2 Develop standard operating procedures	G-3 Provide system security (e.g., lights, fences, locks)	G-4 Process payroll	G-5 Maintain parts inventory

A-6 Develop well maintenance program	A-7 Implement well maintenance program	A-8 Monitor well performance (e.g., draw down, static, yield)	A-9 Perform pump/flow test			
B-5 Maintain chemical tank levels (e.g., chlorine, salt, potassium permanganate)		B-6 Maintain iron filters	B-7 Maintain water softener operation	B-8 Monitor chemical inventory (e.g., salt, chlorine, potassium permanganate)		B-9 Maintain water treatment facility
C-5 Replace pumps	C-6 Repair pumps	C-7 Service air compressor	C-8 Replace water meters (e.g., master meter, operational control meter)	C-9 Repair water meters (e.g., master meter, operational control meter)		C-10 Maintain pressure tanks
C-15 Coordinate clear well cleaning						
D-6 Repair valves (e.g., main line, isolation)	D-7 Replace valves (e.g., main line, isolation)	D-8 Repair water line leaks	D-9 Perform connect/disconnect service	D-10 Maintain plumbing fixtures (e.g., faucets, vacuum breakers, water fountains)		D-11 Winterize distribution system
E-6 Collect manganese samples	E-7 Collect inorganic samples	E-8 Collect lead & copper samples	E-9 Collect synthetic organic chemical samples	E-10 Collect volatile organic chemical samples	E-11 Collect radiological samples	E-12 Collect disinfection by-products samples
F-5 Coordinate monitoring schedule	F-6 Prepare consumer confidence report	F-7 Distribute consumer confidence report	F-8 Maintain records (e.g., maintenance, testing, government)	F-9 Renew license to operate	F-10 Respond to EPA inspection surveys	F-11 Develop sample siting plan
G-6 Purchase supplies (e.g., chemicals, office, parts)	G-7 Process correspondence (e.g., email, mail, phone)	G-8 Obtain bids/quotes	G-9 Prepare customer billing	G-10 Pay bills	G-11 Coordinate backflow testing	G-12 Respond to customer needs/issues

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Duties		← Tasks				
G	Perform Administrative Tasks – cont.	G-13 Participate in meetings	G-14 Evaluate safety equipment (e.g., PPE, fire extinguishers, first aid kit)	G-15 Evaluate equipment specifications	G-16 Maintain MSDS	
		G-17 Maintain OSHA training records	G-18 Archive records (e.g., payroll, billing, Ohio EPA)	G-19 Review system improvement plans	G-20 Ensure Ohio EPA plan approval is obtained	
		G-21 Ensure local permits are obtained (e.g., plumbing, electrical)	G-22 Develop long range plans for system improvements/upgrades (e.g., capital improvements, regulatory mandates)			
H	Manage Staff	H-1 Complete employee hiring process (e.g., job description, interview, paperwork)		H-2 Develop employee training program	H-3 Implement employee training program	H-4 Schedule employees
		H-5 Approve employee time sheets	H-6 Evaluate employee performance			
I	Pursue Professional Development	I-1 Obtain Class A certification	I-2 Maintain water system operator certification (e.g., contact hours, renewal form)	I-3 Review rules & regulations (e.g., proposed, new, current)	I-4 Participate in Ohio EPA listserves	
		I-5 Network with peers	I-6 Participate in professional organizations (e.g., AWWA, ORWA, OMHA)		I-7 Participate in conferences, trade shows, seminars	I-8 Participate in vendor training
		I-9 Pursue higher education				

Acronyms

AWWA	American Water Works Association
EPA	Environmental Protection Agency
MOR	Monthly Operating Report
MSDS	Material Safety Data Sheets
ODNR	Ohio Department of Natural Resources
OMHA	Ohio Manufactured Home Association
ORWA	Ohio Rural Water Association
OSHA	Occupational Safety and Health Administration
PPE	Personal Protective Equipment

General Knowledge and Skills

Problem solving skills
Troubleshooting skills
Recordkeeping skills
Time management skills
Analytical skills
Multi-tasking skills
Chemistry knowledge
Budgeting knowledge
Electrical knowledge/skills
Plumbing knowledge/skills
Computer knowledge/skills
Reading skills
Math knowledge/skills
Communication skills (written, listening, oral)
Proper business conduct/ethics
Work safety practices/standards
Employment laws
Local/county rules & regulations
Leadership skills
State & federal EPA laws
OSHA regulations
Map/schematic reading skills

Tools, Equipment, Supplies and Materials

Curb wrench	Basic office equipment
Hydrant wrench	First aid kit
Valve wrench	Fire extinguisher
Basic hand tools	Chemical feed pumps
Portable power tools	Backflow preventer
Backhoe	Flow meters
Dump truck	Pressure gauges
Skid loader	Dolly
Water testing equipment	Self contained breathing apparatus
Chemical testing equipment	Tubing
Electrical testing equipment	Valves
Water treatment chemicals	Iron filters
Butane torch	Oil/grease/lubricants
pH meters	Ladders
Chlorine meters	Computer & Internet
Portable generator	AWWA standards
Flashlights/work lights	USA Bluebook
Winch	Ohio EPA Class A water system manual
PPE	Operations & maintenance manual
Air compressor	
Cell phone/radio	
Digital camera	

Worker Behaviors

Flexible
Self motivated
Self starter
Reliable
Dependable
Detail oriented
Versatile
Adaptable
Flexible
Observant
Resourceful
Safety conscious
Compliance oriented
Thrifty
Courteous
Trustworthy
Assertive
Inquisitive
Organized
Understanding
Knows limitations
Common sense

Future Trends and Concerns

Increased security concerns
Use of automation to reduce labor costs
Increased demand for Class A operators
Increasing operating costs
Increased educational requirements for operators
Concern for quality/quantity of water supplies
Increased monitoring requirements and limits
Movement to regionalized water suppliers
Increased competition for qualified personnel
Increasing paperwork and documentation requirements
Concern for water borne pathogens and carcinogens