

Example of PWS Sodium Hypochlorite Purchase Specifications

Chemical Purchase Specifications for Sodium Hypochlorite at the		Water Treatment Plant
Revision number:	Revision Date:	Pages:

- OBJECTIVE:** These purchase specifications are intended to promote the safe handling and delivery of bulk water treatment chemicals.
- RESPONSIBILITIES:** The PWS project manager shall update this purchase specification as needed; review the bid package submittal prior to award; and act as a contact with the PWS purchasing department.

3. SPECIFICATION PROVISIONS:

- A. Location:** Sodium hypochlorite shall be delivered via tank truck to the Water Treatment Plant.

Facility	Yearly Estimate	Typical Order Quantity

- B. Start Date:** Estimated contract start date shall be determined by the procurement department. Date will be on or about .

- C. Quantity:** The PWS anticipates using the annual quantities referenced above. This estimate is given for informational purposes only and shall not be deemed to either guarantee a minimum amount or restrict the maximum amount to be delivered.

D. Bid Package Requirements:

- Vendors shall submit the following prior to contract award. The prospective vendor has seven business days from PWS notification to provide any missing items.

Table 1: Required Submittals	
1	The Bulk Chemical Pre-Qualification Questionnaire
2	Chemical Transportation Plan
3	Emergency phone contact list for each company involved with generation, supply, and transportation of chemical to the facility
4	Supply Plan
5	Samples of each piece of delivery documentation
6	A list of driver names
7	A list of tank truck numbers
8	A technical specification sheet
9	The most recent scale weight station calibration report
10	Local or state Bureau of Weights and Measures certification
11	Material Safety Data Sheet
12	An independent analysis for impurities
13	A certification letter(s) stating that the chemical meets the AWWA standard and ANSI/NSF Standard 60

E. Vendor Selection:

1. Following the bid close, an interim period will be established where the PWS will evaluate the bids to determine the lowest, most responsible, and responsive bidder. Site visits to the vendor's local manufacturing, distribution, or storage locations may be required. Site visits will be scheduled in advance with the vendor.
2. New vendors are required to conduct an initial site visit prior to commencement of the contract. The PWS staff will review contract requirements and policies for offloading chemical. The vendor shall conduct a site survey to ensure that the delivery area and storage location are suitable for offloading. The cost for this site survey shall be included in the vendor's bid price.
3. The PWS determination of the lowest, most responsible and responsive bidder shall consist of an evaluation of the bid price, all required submittals, supply capabilities, references, product quality, and certifications.

F. Quality:

1. The sodium hypochlorite shall be clear to pale yellow in color with no visual evidence of particulates in the product.
2. The delivery time of the shipment shall not exceed 72 hours from the time of manufacture. The term manufacture does not include shipping hypochlorite that is manufactured outside of the 72 hour window nor does it include diluting higher strength sodium hypochlorite that is manufactured outside of the 72 hour window. The manufacture date must be listed on the Certificate of Analysis.
3. Upon observation of particulates in the product or material accumulation in the storage tanks or associated process piping, the vendor shall, at a cost to the vendor, clean the affected equipment and dispose of the material in accordance with applicable state and federal regulations. The cleaning of affected equipment shall be coordinated with the PWS management.
4. Upon contract award the vendor may inspect a storage tank to see the cleanliness of the tank. The PWS may only be able to allow an inspection one tank at a time.
5. The vendor shall perform a suspended solids test on sodium hypochlorite sample prior to shipment. The test shall have the same test methods as the "Suspended Solids Quality Test for Bleach using Vacuum Filtration", developed by Dr. Bernard Bubnis of NovaChem. See http://powellfab.com/technical_information/files/3370.pdf . Product not within the specifications may be grounds for rejecting the delivery or generations of a letter of nonconformance.

6. The suspended solids in the sodium hypochlorite shall have a filtration time of less than 3 minutes for 1000 milliliters when applying the test method referenced above.
7. Sodium hypochlorite shall conform to the specifications listed in Table 2 and the maximum concentrations listed in Table 3. The Independent Analysis for Impurities shall disclose the results of these parameters.

Table 2	
Note: The decision of solution strength is a local decision based on storage volume, pricing, etc.	
Characteristic	Requirement
Solution strength*	14.5-16.5% trade
Excess sodium hydroxide	0.1-0.5% wt.
pH	11-13

Table 3			
Note: The decision on appropriate levels of these contaminants is a local decision based on local source water characteristics.			
Contaminant	Concentration (mg/l)	Contaminant	Concentration (mg/l)
Arsenic	1.50	Lead	2.00
Barium	2.00	Mercury	0.02
Cadmium	2.00	Nickel	0.10
Chromium (total)	2.00	Selenium	2.00
Cobalt	0.50	Silver	2.00
Copper	0.20	Chlorate	1500
Iron	1.00	Bromate	70
Perchlorate	85		

G. Certifications:

1. Sodium hypochlorite shall conform to the latest ANSI/AWWA B300 Standard for Hypochlorites.
2. Sodium hypochlorite shall be ANSI/NSF Standard 60 certified for drinking water chemicals. The chemical shall have been tested and certified by a product certification organization accredited for this purpose by the American National Standards Institute (ANSI).
3. Failure to comply with these requirements at manufacturing or transload facilities (if applicable) or the loss of ANSI/NSF 60 certification shall be considered grounds for non-issuance of contract or cancellation of this contract.
4. If ANSI/NSF Standard 60 certification is lost, the vendor shall notify the PWS project manager immediately.

H. Delivery Documentation:

1. At a minimum, the following are required with every delivery to the PWS: Bill of Lading, Certificate of Analysis, and a machine generated weight slip. The cost for these documents shall be included in the vendor's bid price.
2. The vendor shall sample and test the chemical that is representative of the lot being delivered. The vendor shall highlight on the Certificate of Analysis whether or not the tests are performed on a bulk storage tank or directly from the loaded tank truck.
3. The following results shall be disclosed on each Certificate of Analysis.

Table 4	
Available chlorine (trade percent)	Chemical name
Date of manufacture	Appearance
Specific gravity	Suspended solids test filtration time
Temperature	Signature of chemist or lab technician
Test date	

4. The Certificate of Analysis shall list the test methods or analyzers used for each of these tests.
5. The Certificate of Analysis shall be signed and dated as proof of testing.
6. The following shall be disclosed on delivery documentation.
 - a. Chemical name and grade
 - b. Location from where sample was taken for the test (trailer, storage tank)
 - c. The DOT UN number
 - d. Tank truck number
 - e. The initials and/or signatures of the driver and/or transloader.
 - f. Ship to facility name and address
 - g. Company name(s)
 - h. Batch or lot number
7. When the product is transloaded from a railcar to a tank truck the driver and/or transload facility employee must perform a visual sample inspection of both the railcar and tank truck and record their findings on a Transload Inspection Form.
8. Delivery documentation should clearly show product transfers that occur after manufacturing up to and including transfer into the vehicle that arrives at the PWS facility.

I. Purity Testing & Independent Analysis for Impurities:

1. The PWS will conduct strength and purity testing of the product throughout the contract period. If test results are unsatisfactory, a letter of nonconformance

will be sent to the vendor at which time the vendor will be required to institute corrective actions. Continued non-compliance (more than four times per year) can result in vendor contract dismissal.

2. Prior to contract start the vendor shall submit an Independent Analysis for Impurities. Multi-year contracts require an annual submission as well. The cost shall be included in the vendor's bid price.
3. The Independent Analysis shall disclose results of the parameters listed in Table 2 and 3.

J. Chemical Transportation Plan:

1. The Transportation Plan shall include a detailed explanation of all companies affiliated with supplying the chemical to the PWS facility. This includes chemical manufacturer(s), distributor(s), repackager(s), and transporter(s). Explain how the chemical is manufactured, packaged, and what quality control and quality assurance measures are instituted to maintain product integrity. Discuss security measures at pertinent storage, manufacturing, railcar terminals, or repackaging locations.
2. For each manufacturer, distributor, and transporter provide a detailed list of chemicals that are also manufactured, repackaged, transported by each of the companies.
3. The vendor shall discuss whether product of differing strengths will be stored or transloaded at the local terminal. If so, the vendor shall disclose how they will segregate the products.
4. Any changes to the listed manufacturer(s), distributor(s), or transporter(s), require immediate notification to the PWS.

K. Supply Plan:

1. The vendor shall submit a supply plan that highlights utilization of additional resources in the event of a planned or unplanned manufacturing plant shutdown, labor issues, weather emergency, or transportation issue (rail and/or tank truck). List alternate production locations and include a discussion of agreements with additional haulers and railcar storage terminals. Include a list of contact persons and emergency telephone numbers.

L. Containers & Appurtenances:

1. All containers and appurtenances shall be labeled for sodium hypochlorite.

M. Ordering:

1. Deliveries must be scheduled in advance. At the Disinfection Facility acceptable delivery times are during the hours of a.m. and p.m., Monday through Friday. At the Water Treatment Plant acceptable

delivery times are during daylight hours, seven days per week. Time or day exceptions can be made with the PWS approval.

2. The vendor will be expected to deliver product no later than 72 hours from the time a request has been made.
3. Tank truck deliveries may be ordered as partial loads. Deliveries may also allow for splitting a larger load between two or more PWS facilities. Orders cannot be combined in the same trailer compartment with other PWS facilities. If a compartment trailer is used the driver must provide a separate scale weight ticket for that compartment.
4. In the event that the vendor cannot or does not supply the product as requested the PWS reserves the right to purchase equivalent product at market prices for immediate delivery. The vendor may be required to pay the cost difference.
5. When a date or dates are set for delivery of product, it shall be delivered on the scheduled date.
6. The vendor shall provide a twenty-four hour notice to PWS if the scheduled date cannot be met. Unanticipated problems that may cause delays require notification to the PWS within two hours. Numerous delays may be grounds for cancellation of contract.
7. The vendor may need to supply the chemical on an emergency basis and it is expected that the vendor is available to deliver chemical for emergencies 24 hours per day/7 days per week. Emergencies are considered a request for chemical with less than a twenty-four hour notice. The PWS will pay a flat fee for this service at a rate established on the Bid Proposal Form.
8. A request for an emergency delivery will be made by management to the vendor's emergency contact phone number. The PWS requests made to answering services or voice mails require a vendor call-back within one half-hour.
9. Vendors shall provide a list of holidays or other days in which deliveries normally cannot be sent to the PWS. This list shall be provided on the Pre-Qualification Questionnaire.
10. In the event of an emergency, the PWS reserves the right to ask the vendor to reroute a sodium hypochlorite delivery to another PWS facility.

N. Delivery:

1. Upon delivery arrival, an assigned PWS employee will review vehicle DOT placards and delivery documentation.

2. Tank trucks shall be equipped with a hatch or other suitable means of drawing samples for testing.
3. The driver shall provide a chemical sample from the tank truck. The PWS will provide sample bottles and will test the sample prior to offloading. No extra charges shall be assessed for sampling and testing.
4. The driver shall place chock blocks behind the wheels during offloading operations.
5. Each delivery must be accepted by the PWS personnel prior to offloading.
6. The driver shall carry the necessary quick connects and hosing to connect to the PWS fill connection. Connection size will be relayed to dispatch upon contract award. Vendors are responsible for adaptors, if necessary.
7. All drivers must place spill buckets underneath each hose connection. For added protection, they must also place cam straps around the cam locks. The driver is responsible for cleaning residual chemical that may leak out of a hose or be present in a hookup spill tray. The driver must have adequate spill absorbent material along with him or her in order to perform this task.
8. The driver must stay with the truck during offload operations.
9. Hoses shall be clean and free of residue from previous deliveries. They must also be free of cracks, tears, or wear that could result in a chemical spill. Hoses, couplings or adaptors found unclean shall be cleaned at the vendor's expense before unloading or the delivery may be rejected. The driver is responsible for bringing with him/her enough hose length in order to make all connections.
10. The transfer of chemicals from the tank truck shall be considered the responsibility of the vendor's or vendor's subcontractor tank truck driver.
11. The truck tank pressure shall be regulated by the driver while unloading and shall not exceed the tank truck manufacturer's specifications.
12. Any equipment found to be leaking chemicals shall be considered an emergency situation requiring immediate attention and response by the vendor or subcontractors. In such cases, the vendor must secure the services of an emergency response and cleanup contractor, working under the direction of a Licensed Site Professional, if required per 310 CMR 40.0000. The vendor must also notify state, local, and federal authorities in the appropriate time frames specified in 310 CMR 40.0000.
13. The PWS reserves the right to reject any delivery that does not conform to the specifications or which has been contaminated. In such circumstance, the vendor shall bear the expense for removal and cleaning of PWS equipment.

14. Prior to departure, the driver shall notify the Control Room or designated PWS employee. He/she must make sure that all of the cargo has been unloaded and that all previously open vehicle outlets and valves are closed.
15. The vendor shall allow two hours offloading time without demurrage.

O. Safety and Personal Protective Equipment Requirements:

1. The vendor is responsible for providing company-required Personal Protective Equipment (PPE).

P. Training and Technical Services:

2. The PWS reserves the right to ask for a one-half day on-site classroom training to its employees. The training shall be delivered at no additional cost to the PWS.
3. The training session shall include but not limited to a discussion of the chemical characteristics, safe operation and maintenance chemical handling practices, personal protective equipment, and emergency response procedures.
3. The instructor shall have sufficient experience and qualifications that will enable him/her to present a training session that is meaningful and complete.

Q. Security:

1. Prior to the start of the contract, the PWS shall be provided with a list of driver names and trailer numbers. This list will be referenced by the PWS contracted security staff at facility entrance gates.
2. Updates to the driver name and trailer list shall be provided by fax to the manager in charge of the Quality Assurance or by mail and shall be on company letterhead.
3. All drivers may be required to present their Commercial Driver License (CDL). The PWS reserves the right to request copies of Commercial Driver's Licenses.
4. Security seals or locks shall be placed on the tank truck and railcars while in transport and at storage yards. The driver shall cut the tank truck seals in the presence of a PWS employee. If numbered seals are utilized, the seal numbers shall be referenced on the delivery documentation. The PWS employee will reference the paperwork to ensure the seal numbers match.
5. The vendor shall notify the PWS immediately in the event of broken seals or locks, and open or damaged dome covers on tank trucks or railcars.
6. Instances where the CDL is expired or questionable, or the driver name is not on the list will result in Supervisor notifications and possible delivery rejection.

R. Scale Weight Certificates & Certification:

1. Scale weight certificates, issued by a certified weigher, shall accompany all deliveries. The cost for this shall be included in the vendor's bid price.
2. Submit copies of the scale weight certification, issued by the local or state Bureau of Weights & Measures, to the Project Manager annually following contract award.
3. Scale weight tickets must show the date, time, and trailer number in addition to the gross and tare weight.
4. All weights listed on the scale weight ticket shall be machine generated. Hand-written weights will not be accepted.
5. The PWS reserves the right to require the hauler, at any time during the contract period, to weigh its load at an independent weigh station. The independent weigh station will be within the local area of the PWS delivery drop-off. The vendor shall assume that this may be requested no more than once per year. In the event the weight is questioned the PWS reserves to the right to ask for one additional weigh during the contract period. The PWS will pay for the weigh fee but will not pay for any lost-time fees associated with this request.
6. In instances where the PWS does not receive the entire load, the vendor shall provide the PWS with a second scale weight ticket (upon return to the vendor's facility). Therefore, the driver will have to re-weigh in order to get an accurate assessment of what was delivered to the PWS. This second scale weight ticket shall be faxed to the PWS on the same day as the delivery.

S. Fuel/Energy:

1. This contract is not subject to fuel or energy charges.

T. Payment:

1. Each invoice shall be submitted by the vendor using the following equation.

Step 1:	$\frac{\text{Net weight in pounds (from machine generated weight slip)}}{(8.34 * \text{Vendor's measured specific gravity})}$ <p style="text-align: center;">= Gallons of product delivered</p>
Step 2:	$\text{Take answer from Step 1} * \text{Contract price per gallon} = \text{Invoice amount}$

2. Invoices can be sent to PWS address

U. Drills:

1. The PWS reserves the right to exercise an annual unannounced drill whereby the PWS calls the vendor's emergency contact number(s) and initiates an emergency chemical delivery to the PWS. This request can be made during working or non-working hours.

2. A request for an emergency delivery will be made by PWS management to the vendor's emergency contact phone number. PWS requests made to answering services or voice mails require a vendor call-back within one half-hour.
3. The PWS will pay a flat fee for this service at a rate established on the PWS Proposal Form. Emergency deliveries shall be delivered within four hours from PWS notification.
4. If the vendor does not arrive in the four hour time period (includes time for filling tank truck and travel), the PWS reserves the right to ask for another drill during the calendar year. If the vendor fails again to arrive in the four hour time period, the PWS reserves the right to cancel any portion of or the entire contract.