

Request for Proposal
for
Granular Activated Carbon (GAC)
and
Related Services
July, 2019

PROPOSALS DUE: August 21, 2019
2:00 PM Local Time

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The Town of Friday Harbor, Washington wishes to engage a qualified private firm to supply Granular Activated Carbon materials and regeneration services for the two Calgon Model 10 carbon adsorbtion filters at its Wold Road potable water treatment plant.

Proposals will be considered only from firms normally engaged in the original manufacture of and reprocessing, sale and distribution of Granular Activated Carbon. Proposers shall have adequate organization, facilities, equipment, and personnel to ensure prompt and efficient service to Town of Friday Harbor. The Town reserves the right before recommending any award to inspect the facilities and organization; or to take any other action necessary to determine that the proposer's ability to perform is satisfactory, and reserves the right to reject proposals where evidence submitted or investigation and evaluation indicates an inability of the proposer to perform.

The intent of the Town is to enter into a five (5) year agreement, which includes a one (1) year initial period with four (4) optional annual renewal periods thereafter with the selected firm.

Description of Scope of Purchase and Related Services

The Town is seeking proposals from qualified firms to replace the granular activated carbon (GAC) for two (2) Calgon Model 10 carbon adsorbtion filters at the Wold Road Water Treatment Facility and to regenerate the same GAC over a period of 5 years. During the first year the Contractor will replace the GAC in both filters with virgin material. Each year thereafter, for up to four (4) additional years, the Contractor will regenerate GAC from both filters and hold the material at standby pending a replacement requested by the Town water department.

The services include:

- Removal and disposal of approximately 40,000 pounds of spent GAC
- Transportation, delivery, and installation of sufficient virgin GAC to to recharge each of the two filters, or approximately 40,000 pounds of virgin GAC during the first year of the contract.
- Removal, transportation, regeneration, replenishment and re-installation of re-agglomerated GAC for at least 6 regeneration cycles in each filter over years 2 through 5 of the contract unless directed otherwise by the Town.

All costs of labor, materials, transportation, equipment, supplies and appurtenances required to complete the work shall be included in the bidders delivered cost per shipment.

Form of Contract – Subsequent to the bid opening the Town expects to enter into contract with the lowest responsive and responsible bidder. The low bidder's customary form of contract may or may not be deemed acceptable for the purpose. The Town will expect to negotiate terms that address its needs on such matters as inspection and sampling, payment terms, FOB point, insurance coverage, governing law and legal venue as well as establishing fair and equitable contract terms on such items as termination, liability and indemnification. If the Town finds it is unable to reach agreement on contract terms with the low bidder negotiations will be discontinued and the Town will move on to negotiate with the next low bidder. Please reference the Town's statement of position (attached) regarding the various issues.

Information for Bidders

1. General Information - The Public Works Department of the Town of Friday Harbor, will receive bid responses at its office located at 60 Second Street on _____, 2019 at 2 PM. Bids may be mailed to:

ATTN: GAC BID
Town of Friday Harbor
PO Box 219
Friday Harbor, WA 98250

Questions relating to specifications or technical questions must be submitted via email to wayneh@fridayharbor.org . Bidders are **NOT** to pursue Town staff by telephone or in person.

2. Form of Bid - The bid shall be made on the attached bidder's proposal form. If the form is deemed inadequate, additional information may be submitted with the proposal, via an attachment of catalogs, drawings, photographs, or a letter. Letters repeating prices and details from the Town's specifications must be omitted.

3. Interpretation of Bidding Documents - Should a bidder find discrepancies in, or omissions from the specifications, or should bidder be in doubt as to their true meaning, bidder shall submit a formal request to the Public Works Department for an interpretation thereof **prior** to the bid opening to the attention of Wayne Haefele at wayneh@fridayharbor.org The person submitting the request shall be responsible for its prompt delivery. Any interpretation of, or change in the proposed documents will be made only by an addendum published on the Town's website, and shall become part of any contract awarded. The Town will not be responsible for any other explanation or interpretations.

4. Terms and Conditions - The bidder shall not change the wording on the specifications or conditions stated herein. No words or comments shall be added to the general conditions or detailed specifications. Any explanation or alternative offered shall be set forth in a letter attached to the front cover of the specifications. Alternatives which do not substantially comply with the Town's specifications will not be considered. Conditional bids will not be accepted.

5.Warranty - Terms of any warranty offered by the bidder shall be included with the bid. Bidder warrants all work done and goods provided under this Agreement shall at the minimum: a) meet all conditions of the Agreement; b) shall be free from all defects in design, material and workmanship; and 3) shall be fit for the purposes intended. If any defects occur within said 12 months following acceptance, Contractor shall be solely responsible for the correction of those defects.

6.Timely Delivery – Bidder shall indicate maximum time for delivery as the number of calendar days following receipt of an order from the Town water department to receipt of the goods or services by the Town. Time of delivery may be a consideration in the award.

7. Addenda - Addenda, if any, issued by the Town during the time of bidding shall be covered in the bid and shall be made a part of the contract. It is the bidder responsibility to check the Town of Friday Harbor website, for any addenda that may have been issued prior to the bid/proposal due date.

Town URL = www.fridayharbor.org

8. Bid Opening - Bids shall be delivered to the Public Works Department of the Town of Friday Harbor located at 60 Second Street, Friday Harbor, WA 98250 on or before the day and hour set for the opening of bids. A bidder may withdraw his bid, either personally or by written request, at any time prior to the scheduled time for opening of bids.

9. Late Bids - Any bids received, whether in person or by mail, after the scheduled time of opening will be clocked in, but will not be opened or considered.

10. No Bid - If a bid is not made the Town invites the planholder to send us and email or letter explaining his/her reasons. We will take these reasons under consideration when we next solicit bids for this work.

11. Award or Rejection - The bid will be awarded to the lowest responsive and responsible bidder subject to successful contract discussions (see 4 above) and will be publicly announced by way of direct notification of potential suppliers and publishing to the Daily Journal of Commerce and the Town's website (www.fridayharbor.org/2193/Bids)

The Town's determination of responsibility will include its assessment of the contractor's ability to meet material specifications and to schedule and perform regeneration and deliveries satisfactorily in addition to the State's mandatory responsibility criteria. Before a Contract will be awarded for the goods and services described herein, the City may conduct an investigation as is necessary to determine the performance record and ability of the apparent successful Bidder to perform all requirements specified under this contract. Upon request, the Bidder will submit such additional information as deemed necessary by the City to evaluate the Bidder's qualifications.

The Town reserves the right to reject any or all bids or to waive any minor irregularities or informalities in the bid.

12. Appeals -- Any actual or prospective bidder, or contractor that has a grievance in connection with any Town solicitation or award of contract may protest in writing to the Town Administrator. Protestors are urged to seek resolution of their complaints initially with the using department.

Schedule of Events

The following is a tentative schedule that applies to this RFP, but may change in accordance with the organization's needs or unforeseen circumstances. Changes will be communicated by e-mail to all invited Proposers.

Issuance of RFP:	_____	July 19, 2019
Bid Opening:	_____	August 21, 2019
Complete Negotiation of Terms	_____	September 21, 2019
Proposed Final Award Notification	_____	September 6, 2019

**Town of Friday Harbor
BID PROPOSAL FORM**

BID DUE DATE: Wednesday, August 21, 2019

The Town of Friday Harbor invites sealed bids. **All bids shall be enclosed in an envelope clearly marked: “Granular Activated Carbon (GAC) and Related Services”**

1) Return original bid to:

**Attn: Amy Taylor
Town of Friday Harbor
60 Second Street/PO Box 384
Friday Harbor, WA 98250**

2) Price shall be F.O.B. Destination or for supplies rendered.

3) Bidder shall honor bid prices for sixty (60) days.

4) Bid must be on this bid form and signed by vendors authorized representative.

BIDDER TO READ

NO BID IS VALID UNLESS SIGNED BY THE PERSON MAKING THE BID AND ALL BLANKS ARE FILLED IN.

Company: _____

Address: _____

Telephone Number _____ **Fax Number** _____

E-Mail Address _____

Authorized Representative (print) _____

The undersigned, upon acceptance, agrees to furnish the following in accordance with terms and conditions per Town of Friday Harbor specifications for **Granular Activated Carbon (GAC) and Related Services** dated July, 2018, at the prices indicated herein.

Bid Sheet

Bid Item #	Quantity	Units	Description	Unit Price	Total Amount
1	2	Each	Remove and dispose of 20,000 lb spent carbon		
2	2	Each	Deliver and install 20,000 lb virgin carbon		
3	6	Each	Remove and haul 20,000 lb spent carbon to reactivation facility; reactivate, warehouse, deliver and install 20,000 lb reactivated carbon		
Total Bid Amount					

List any extra charges not described above:

The following is required information. Any omission may be cause for rejection of Bid.

Early Pay Discount

A _____% discount is offered for payment within _____ days.

(Note: Discount period must be fifteen days, or greater, to be considered.)

Order Contact

Provide the following information about the Town’s contact for service or order:

Name:

Phone Number: _____

Fax Number: _____

Cell Number: _____

Email Address: _____

Delivery (if applicable)

Method of Delivery: Common Carrier Private Company Carrier

(Please circle one choice or describe alternative method)

Compliance

Bidder, have you complied with the specifications, terms and conditions of this bid?

Yes ____ NO _____

A “NO” answer requires a detailed explanation giving reference to all deviations.

Addenda (if applicable):

Bidder acknowledges receipt of ADDENDUM NO. _____, _____, _____

Terms

- 1) Sales tax will be added at time of purchase.
- 2) Prices are F.O.B. Friday Harbor.
- 3) Bids shall be valid for sixty days following the bid opening.

Transportation of Hazardous Materials:

In order to comply with the appropriate federal and state requirements applicable to the transportation and dumping of hazardous waste materials/substances, the seller, or any commercial hauling/transporting firm through the subcontractor, which the seller may obtain such services, must be licensed and registered to provide such service. All dumping facilities shall be licensed and certified to accept material being dumped. Seller hereby warrants that it or its subcontractor has obtained all necessary state and federal licenses and registrations applicable to transporters and transportation of toxic and/or hazardous materials/substances. If required to do so by Town, seller or its subcontractor shall provide proof of said licenses and/or registrations. If required also, the Town may request proof of dumping from an approved dumping facility.

Drug Free Workplace

Bidder/Supplier certifies that he/she is in compliance with Section 8350 - 8355 of Chapter 5.5 of the Government Code, Drug Free Workplace Act. Every person or organization awarded a contract/purchase order or grant for the procurement of any property or service from any state agency (Town) shall certify to the contracting or granting agency that it will provide a drug free workplace.

Offer and Acceptance

Supplier represents his acceptance to provide products and/or services as follows: Town's offer to purchase products and/or services is expressly conditioned upon Seller's assent to the terms and conditions set forth in Town purchase order documents, specifications, supporting data, and these articles. Supplier agrees that Supplier's order Acknowledgment terms and conditions received prior to, during, or after order placement by Town's Purchasing Officer or his designated agent and issued to Supplier constitutes written notification to Supplier of Town's rejection of any and all of Supplier order Acknowledgments, counter offers and change to the Town's terms and conditions. (If applicable)

Supplier's License No. _____ Expiration Date: _____

Supplier certifies by signature below that the information furnished herein is true and accurate, that applicable certifications have been complied with, and that representations are made under penalty of perjury. Any bid submitted without the above information, or a bid containing information, which is subsequently proven false, shall be considered non-responsive and shall be rejected. The undersigned recognizes the right of the Town of Friday Harbor to reject any or all bids received and to waive any informality or minor defects in bids received.

Company Name

Signature of Authorized Representative

Federal Tax ID Number

****Failure to clearly mark the original and provide original signature and one copy may result in a proposal being found non-responsive and given no consideration.***

REFERENCES

Please provide three (3) current or former municipal drinking water client references.
The Town may contact some or all of the references provided in order to determine the client’s level of satisfaction with the bidder’s performance.

Agency Name	
Address	
City, State, Zip Code	
Contact Person	
Telephone No.	
Email Address	
Dates of Service	

Agency Name	
Address	
City, State, Zip Code	
Contact Person	
Telephone No.	
Email Address	
Dates of Service	

Agency Name	
Address	
City, State, Zip Code	
Contact Person	
Telephone No.	
Email Address	
Dates of Service	

QUESTIONNAIRE

1. How many years has your company been in the business of providing GAC installation and what geographical areas does your firm provide this service to.

2. Describe the type(s) of training your employees have had in the safe handling procedure of this

product requested under this Request for Bids.

3. What is the current number of employees working for your firm?

4. What has been the employee turnover rate for your firm in the past year?

5. Describe on a separate sheet of paper your firm's work plan for the Town's contract should you be the successful bidder.

6. Confirm that you have access to appropriate transport and pneumatic education equipment to unload/load carbon from/to Calgon Model 10 carbon adsorbtion units.

7. Indicate below the name of the person who will be responsible for administering the contract, if awarded. Also include the person's title, telephone number, address and internet e-mail address.

* Attach additional pages if needed.

Exhibit A - Contract Terms, Statement of Position

Payment Terms - The standard terms at the Town of Friday Harbor are Net 30 days.

FOB Point - It is understood that the bidder agrees to deliver FOB Destination, with no freight charges to the Town. All costs for packing, delivery, drayage, postage, freight, express, or for any other purpose are to be borne by the bidder.

Tax - No invoice shall include federal excise tax, inasmuch as the Town is exempt per published IRS regulations concerning state/local governments. The Town is obligated to pay applicable state sales or use taxes.

Samples – The Town shall be entitled to request and test samples as per Exhibit C – Technical Specification Part 1, line 27 and Part 3, line 133.

Inspection - All items furnished shall be subject to the inspection of the Town, and unsuitable material may be rejected. Defective items shall be made good by the vendor in a manner satisfactory to the Town.

Assignment - No assignment by the contractor of any contract to be entered into hereunder or of any part thereof.

Termination – Either party to this agreement may terminate this agreement upon 60 days written notice.

Business License – The Town of Friday Harbor requires that any contractor doing business within the Town limits must hold a valid Town of Friday Harbor Business License prior to merchandise delivery (by vendor) or services provided.

Governing Law - This contract shall be construed and interpreted according to the laws of the State of Washington with venue for any action under this Agreement in San Juan County, Washington.

Liability and Indemnification – Each party, to the extent of its negligence or willful misconduct will indemnify and save the other party harmless at all times against any liability on account of any and all claims, damages, law suits, litigation, expenses, counsel fees and compensation arising out of property damages or personal injuries or death arising out of its performance under this agreement. Each party to this contract shall reimburse the other for damages to equipment or goods caused by the negligence or willful misconduct of its employees, representatives or agents.

Insurance -- Contractor shall procure and maintain for the duration of the contract insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by the Contractor, his agents, representatives, employees, or subcontractors.

All certificates and endorsements must be emailed to amy@fridayharbor.org, with the name of the contract clearly identified on the certificates and endorsements AND annual renewals automatically be generated and emailed as instructed.

Minimum Scope of Insurance: Coverage shall be at least as broad as:

Commercial General Liability Insurance

Commercial General Liability insurance shall be written on coverage forms at least as broad as ISO occurrence form CG 00 01, including but not limited to liability arising from premises, operations, stop gap liability, independent contractors, products-completed operations, personal and advertising injury, and liability assumed under an insured contract. There shall be no exclusion for liability arising from explosion, collapse or underground property damage.

The Commercial General Liability insurance shall be endorsed to provide a per project general aggregate limit, using ISO form CG 25 03 05 09 or an equivalent endorsement. Contractor shall maintain Commercial General Liability Insurance arising out of the Contractor's completed operations for at least three years following Substantial Completion of the Work.

Such policy must provide the following minimum limits:

\$1,000,000 Each Occurrence

\$2,000,000 General Aggregate

\$2,000,000 Products & Completed Operations Aggregate

\$1,000,000 Personal & Advertising Injury, each offence

\$1,000,000 Stop Gap/Employers' Liability

Automobile Liability

Automobile Liability for owned, non-owned, hired, and leased vehicles, with an MCS 90 endorsement and a CA 9948 endorsement attached if "pollutants" are to be transported. Such policy(ies) must provide the following minimum limit: \$1,000,000 combined single limit each accident

Worker's Compensation

The Contractor shall comply with Workers' Compensation coverage as 32 required by the Industrial Insurance laws of the state of Washington.

CONTRACT SPECIFICATION FOR GRANULAR ACTIVATED CARBON SERVICES

3 PART 1 - GENERAL

6 This section specifies the requirements for materials, services and level of service deliverable under this contract.

SCOPE OF WORK

9 Furnish all labor, materials, equipment and incidentals required for fulfillment of the contract as specified herein.
12 Arrange for and schedule delivery of replacement material concurrent with removal of existing material as nearly as possible when and as requested by the Town considering the status of weather and tides.
15 Furnish virgin material meeting the requirements specified in Part 2 of this specification for the initial delivery for each of the two filters and at any time thereafter if and when specifically requested.
18 Furnish regenerated material meeting the requirements specified in Part 2 of this specification for all deliveries thereafter except when virgin material is requested by the Town.

DEFINITIONS

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Virgin Material – Freshly manufactured GAC being used for the first time.

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Regenerated Material – Previously used GAC which has been reprocessed to restore its adsorptive properties and to which virgin material has been added to make up for material lost during reprocessing yielding a material substantially in conformance with its original properties.

27 QUALITY ASSURANCE

30 At any time the Town may elect to request a pre-delivery sample of the material scheduled to be delivered and submit it a certified laboratory for testing to assure that the material being delivered meets the appropriate specification. Reference Part 3 – Execution below.

33 SUBMITTALS

36 Virgin Material – Prior to delivery of the first product and the beginning of the contract submit manufacturers product data sheet for the GAC to be delivered along with a certification that it meets the specifications for Virgin material stated below in Section 2.

39 DELIVERY

42 Materials delivered to the Town shall be transported in a vehicle specially designed for the purpose of delivering new GAC material and retrieving spent material in one trip. While in transit the materials shall be protected from contamination from any source. Material delivery and spent GAC removal shall be accomplished by hydraulic eduction directly into and out of the adsorbers. Town shall be responsible for water and air supply.

PART 2 - PRODUCTS

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All Material

51 The GAC supplied pursuant to this contract will be used as a filtration and adsorption media in the treatment of municipal water supplies and shall conform to the requirements of the most current edition of the American Water Works Association (AWWA) Standards B100, B604, and

54 B605. The GAC shall conform to food chemical codes when tested as outlined in the food chemical codex, Third Edition and shall conform to NSF / ANSI 61.

57 The GAC shall meet or exceed the specified standards and performance criteria regarding material specifications and physical properties. These performance criteria shall be evaluated based on testing of samples as described below. Failure of samples to meet the performance criteria shall result in rejection of the GAC and, in the case of job site samples, in the removal and replacement of any installed materials, at no cost to the Town.

60 Virgin GAC Material Specification

63 The Contractor shall supply a virgin GAC, which shall be used as 1) the original filter media, 2) make-up of losses of spent GAC via the reactivation process, or as an alternate supply to the custom regenerated GAC. The virgin GAC shall meet following specifications:

- 66 A. The carbon supplier shall be the manufacturer and in complete control over the manufacturing process.
- B. GAC shall be supplied directly by a single virgin carbon manufacturer. All virgin carbon supplied in each delivery shall be produced from a single manufacturing run.
- 69 C. The GAC shall be virgin, granular, and may be manufactured from coconut or coal so long as the product is approved for use with potable water and otherwise meets the physical and chemical properties stated herein. The material shall be visually free of clay, dirt, and deleterious material and shall be free of pathogenic contamination as measured by coliform tests of GAC filtrate.
- 72 D. The GAC shall be manufactured in the United States of America.
- 75 E. The GAC shall comply with AWWA B604, latest edition.
- F. The GAC shall comply with NSF / ANSI 61 Drinking Water System Components – Health Effects standard.
- 78 G. The GAC shall comply with the requirements for activated carbon as defined by the Food Chemical Codex (FCC), latest edition published by the U.S. Pharmacopeia.
- 81 H. The GAC shall be manufactured by a producer certified for ISO 9001:2000 quality standards and at the specific plant or site holding such certification. A copy of the valid certificate must be submitted with bid. It is understood that ANSI/NSF assures the GAC against toxicological hazards only. ISO 9001:2000 Certification assures the GAC of consistent conformance to stated product quality and standards listed in the specifications.
- 84 I. The Certificate of Analysis shall certify that the GAC sample shipped to the site is virgin carbon and in full compliance with the specifications stated herein. Failure to comply will be considered non-responsive and bid will be rejected.

Virgin GAC Properties

90 The virgin GAC to be furnished shall meet the following specifications and physical properties:

Property	Value	Test Method
Sieve size	12 x 40	
Maximum larger than No. 12 mesh (%)	5	AWWA B604
Maximum smaller than No.40 mesh (%)	4	AWWA B604
Effective size, (mm)	0.55 – .75	AWWA B604
Maximum uniformity coefficient	<1.9	AWWA B604
Minimum iodine number (mg/g)	1000	AWWA B604
Minimum abrasion number	75	AWWA B604
Maximum moisture weight (%)	2	AWWA B604

Maximum total ash (%)	10 ± 2	ASTM D2866
Maximum water soluble ash (%)	1.0	AWWA B604 / Food Chemicals Codex
Maximum water extractable phosphate, as P0	1.5% ± 0.5%	Water Extractables Test
Maximum apparent density (g/cc)	0.45 – 0.66	AWWA B604
Backwash expansion % @ 5 gpm/sq ft 55°F; % @ 10 gpm/sq ft 55°F	14% 40%	
Backwash expansion % @ 5 gpm/sq ft 35°F; % @ 7 gpm/sq ft 35°F	22%-36%	
Minimum Trace Capacity Number (mg/cc)	10	TM-79, TM-85 (converted to TCN)
Non-Wettable pH	<1%	AWWA B604
	Acid wash of GAC shall not be required to neutralize pH during initial backwashing to remove fine media particles.	

Regenerated GAC Product Specification

- 93 The Contractor shall custom regenerate the Town’s spent GAC. Custom regenerated GAC shall be supplied by the manufacturer of the virgin GAC. Custom regenerated GAC shall meet the following specifications:
- 96 A. Materials:
1. Materials shall comply with the requirements of the Safe Drinking Water Act, and other federal requirements.
 - 99 2. The spent GAC shall be regenerated in an NSF-certified reactivation facility, conforming to all requirements of AWWA Standard B605, latest edition, exclusively dedicated to the receiving and production of potable regenerated GAC.
 - 102 a. Custom segregated reactivation is defined as “a process that segregates a customer’s spent GAC such that it is stored and regenerated with no intermingling with GAC from another source. The Town shall receive back its original GAC in a regenerated condition, per AWWA Standard B605.
 - 105 b. The Contractor shall provide a segregated storage facility of Custom regenerated GAC until required by the Town.
 - 108 c. The Contractor shall provide a reactivation facility or system where all process equipment in contact with the Town’s spent GAC is used exclusively to handle carbons used to treat products designated for human consumption, and does not include pharmaceutical-related applications. If the facility is part of a larger GAC facility that handles non-potable/non-food-grade GAC, the potable/food-grade reactivation facility shall have separate entry and shall not allow transport between the potable/food grade facility and the non-potable/non-food-grade portion. Any GAC classified as hazardous under the Resource Conservation and Recovery Act (RCRA) or by other federal and state regulations is excluded from reactivation in a potable/food-grade reactivation facility.
 - 111
 - 114
 - 117
 3. The regenerated GAC shall comply with NSF / ANSI 61.
 4. The Contractor of regenerated GAC material to be supplied for this bid shall have three (3) years of history of supplying NSF-certified potable custom regenerated GAC
- 120

into municipal drinking water facilities in North America.

Regenerated GAC Properties

123 Reactivated GAC, including virgin make-up GAC blended as required, shall meet the following specifications:

Property	Value	Test Method
Sieve size	12 x 40	
Maximum larger than No. 8 mesh (%)	5	AWWA 604
Maximum smaller than No.30 mesh (%)	4	AWWA 604
Effective size, (mm)	0.55 – .75	AWWA 604
Maximum uniformity coefficient	<1.9	AWWA 604
Minimum iodine number (mg/g) If spent GAC iodine number is >550 If spent GAC iodine number is <550 Final blended iodine number must be >	800 +250 500	AWWA 605
Minimum abrasion number	75	AWWA 604
Maximum moisture weight (%)	2	AWWA 604
Maximum total ash (%)	10 ± 2	
Maximum water soluble ash (%)	1.0	AWWA B604 / Food Chemicals Codex
Maximum water extractable phosphate, as P0	1.5% ± 0.5%	ASTM D2866
Maximum apparent density (g/cc)	0.45 – 0.66	AWWA 604
Backwash expansion % @ 5 gpm/sq ft 55°F;	14% 40%	
% @ 10 gpm/sq ft 55°F		
Backwash expansion % @ 5 gpm/sq ft 35°F;	22%-36%	
% @ 7 gpm/sq ft 35°F		

126 Notes:

1. Iodine Number is based on the final blend of custom reactivated GAC and make-up virgin GAC.

129 PART 3 - EXECUTION

132 Pre-shipment samples

A. At the Town’s option, and prior to a GAC delivery to site, a pre-shipment sample of the actual lot to be supplied shall be submitted to the Town for evaluation and approval.

135 B. The Contractor shall submit a representative sample of the lot of virgin or reactivated GAC to be shipped to the Town for acceptance before it is shipped. This sample must be submitted in a clean vapor-proof container, plainly marked with the address of the Contractor and identified as to the lot number of the contents. A duplicate sample shall be tested by the Contractor. A certified test report, or a Certificate of Analysis, shall be submitted to the Town with the Town’s sample, showing compliance with the requirements of the purchase documents, along with a statement certifying that the material for shipment is equal in quality to the sample submitted.

141 C. The Town, at its cost, may independently test any or all submitted pre-shipment samples at a mutually agreed upon independent testing laboratory to confirm conformance with the specifications. These samples shall be in addition to the samples referenced in above and shall also be submitted in accordance with AWWA B604 and

- 147 B605, latest edition.
- D. Failure of the pre-shipment samples to meet specifications shall be cause for the Town to refuse shipment of the GAC.
- 150 E. Contractor (manufacturer) shall not be given approval to ship GAC until pre-shipment samples meet specification.

Carbon exchange procedures

- 153 A. Field Service personnel performing the GAC exchange must be directly employed by the manufacturer of the GAC:
 - 1. The GAC manufacturer’s supervisor must have a minimum of 5 years’ experience in performing carbon exchanges.
 - 156 2. Performance of the GAC exchange by a third party or sub-contractor shall not be allowed.
- 159 C. Contractor shall submit a detailed carbon exchange procedure.
- D. Material delivery and spent GAC removal shall be accomplished by hydraulic eduction directly into and out of the adsorbers. Town shall be responsible for water and air supply.
- 162 E. Virgin replacement GAC shall be transported, delivered and placed in a manner that excludes contamination by dust, dirt or deleterious materials and that prevents physical damage to the particles.
- 165 F. Spent GAC removed from filters shall be transported to a carbon reactivation facility for custom regeneration.

168 Filter Data

Filter Design	Calgon Carbon Adsorbtion System
	Model 10
Number of Filters	2
Number of Cells per Filter	1
Cell Dimension (Height xDiameter)	Approx. 216” H x 120”D
Filter to Waste (dia.)	8 inch
Total Existing GAC Volume (cu. Ft.)	1426 cu ft (2 filters)

171

END OF SPECIFICATION