

RESOLUTION 24-162

**A RESOLUTION TO APPROVE THE PURCHASE OF CARBON FROM CITCO
WATER**

WHEREAS, the City of Spring Hill's Water Treatment Plant utilizes carbon for the purpose of pretreatment of water for human consumption; and

WHEREAS, currently the Water Plant is utilizing Jacobi Aquasorb CB-1 Carbon for the removal of a variety of aqueous pollutants including organic matter and taste and odor compounds; and

WHEREAS, the City of Spring Hill released an invitation to bid for the purchase of activated carbon needed; and

WHEREAS, CITCO water was the lowest bidder meeting the minimum qualifications.

NOW, THEREFORE BE IT RESOLVED, that the City of Spring Hill Board of Mayor and Alderman approve the purchase of carbon from CITCO Water at an estimated annual cost of \$120,000.00.

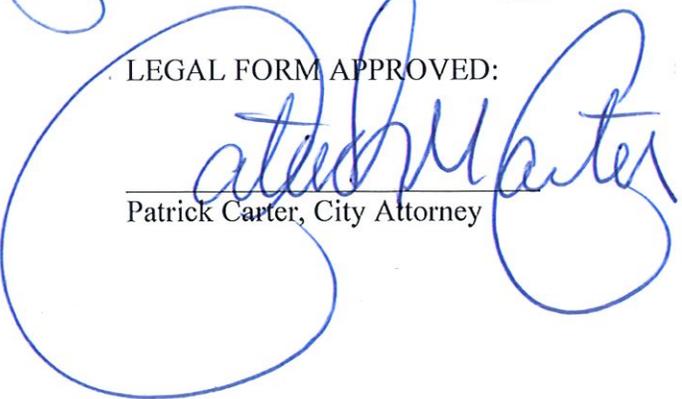
Passed and Adopted by the Board of Mayor and Aldermen of the City of Spring Hill, Tennessee on the 15th day of July, 2024.


Jim Hagaman, Mayor

ATTEST:


April Goad, City Recorder

LEGAL FORM APPROVED:


Patrick Carter, City Attorney



REQUEST: *Approval of Resolution 24-162*
SUBMITTED BY: Jessica Weaver, Utility Director
DATE: July 15, 2024
RE: To approve the purchase of carbon from CITCO Water.
ATTACHMENTS: Resolution 24-XXX, Contract

PURPOSE:

The purpose of this resolution is to approve the purchase of carbon from CITCO Water.

BACKGROUND:

The City of Spring Hill Water Treatment Plant utilizes carbon for the treatment of water for human consumption. This grade of activated carbon provides a high removal efficiency of a variety of aqueous pollutants, especially organic matter and taste and odor compounds. The material is NSF approved and compliant with international standards for activated carbon products.

The City of Spring Hill released an invitation to bid for the purchase of activated carbon. Bids were returned on July 3rd, 2024, with five responses. Three were determined not to meet the minimum criteria. The winning bidder being CITCO water.

FINANCIAL IMPACT:

Estimated fiscal year cost not to exceed \$120,000.00

STAFF RECOMMENDATION:

Staff recommends approval of Resolution 24-XX to approve the purchase of carbon from CITCO Water.

SAFETY DATA SHEET

(REACH regulation (EC) n° 1907/2006 - n° 453/2010)

SECTION 1 : IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product Identifier

Product name : AquaSorb CB Series
Product code : Activated Carbon.

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use as an adsorbent in industrial, professional and consumer setting.

Use descriptor system (REACH) :

SU3 : PROC 1, 2, 3, 4, 5, 8a, 8b, 9, 14, 15, 22

SU22 : PROC 1, 2, 3, 4, 5, 8a, 8b, 9, 15

SU21 : PC 2, 3, 29, 35, 37, 39

The annexed exposure scenarios provide a complete listing per sector.

1.3. Details of the supplier of the safety data sheet

Registered company name : Jacobi Carbons, Inc..
Address : 432 McCormick Boulevard.OH 43213.Columbus.United States.
Telephone : +1 215 546 3900. Fax : +1 215 546 9921.
msds@jacobi.net
www.jacobi.net

1.4. Emergency telephone number : +1 215 546 3900.

Association/Organisation : Jacobi Carbons, Inc..

SECTION 2 : HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

In compliance with EC regulation No. 1272/2008 and its amendments.

In use may form flammable/explosive vapour-air mixture (EUH018).

This substance does not present a health hazard with the exception of possible occupational exposure thresholds (see paragraphs 3 and 8).

This substance does not present an environmental hazard. No known or foreseeable environmental damage under standard conditions of use.

In compliance with directives 67/548/EEC, 1999/45/EC and their amendments.

This substance does not present a physical hazard. Refer to the recommendations regarding the other products present on the site.

This substance does not present a health hazard with the exception of possible occupational exposure thresholds (see paragraphs 3 and 8).

This substance does not present an environmental hazard. No known or foreseeable environmental damage under standard conditions of use.

2.2. Label elements

In compliance with EC regulation No. 1272/2008 and its amendments.

Hazard statements :

EUH018

In use may form flammable/explosive vapour-air mixture.

EUH044

Risk of explosion if heated under confinement.

AquaSorb CB Series - Activated Carbon

2.3. Other hazards

In the event of dust formed by mechanical action (sanding, sawing, etc..), this dust may cause irritation by inhalation and contact with eyes.

In use, may form flammable/explosive dust-air mixture.

The substance does not satisfy the PBT or vPvP criteria in accordance with annexe XIII of the REACH regulations EC 1907/2006.

May cause CO and CO2 emanations in the event of a fire.

According to the ECHA Guidance on chemical safety assessment, Chapter R11, section R11.1.2.1: "The PBT and vPvB criteria of Annex XIII to the Regulation do not apply to inorganic substances". As Activated Carbon - HDS type is to be considered as an inorganic substance, the PBT assessment is not applicable.

Wet Activated Carbon depletes oxygen from air and, therefore, dangerously low levels of oxygen may be encountered. Whenever workers enter a vessel containing activated carbon, the oxygen content should be determined and work procedures for potentially low oxygen areas should be followed.

SECTION 3 : COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

Composition :

Identification	(EC) 1272/2008	67/548/EEC	Note	%
CAS: 7440-44-0 EC: 931-328-0 REACH: 01-2119488894-16-0013 ACTIVATED CARBON - HIGH DENSITY SKELETON (AC-HDS)			[1]	100%

Information on ingredients :

A porous, amorphous, high surface area adsorbent material composed largely of elemental carbon.

[1] Substance for which maximum workplace exposure limits are available.

SECTION 4 : FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.

NEVER induce swallowing by an unconscious person.

4.1. Description of first aid measures

In the event of exposure by inhalation :

If breathing is irregular or has stopped, effect mouth-to-mouth resuscitation and call a doctor.

Fresh air, rest.

Obtain medical attention if cough or respiratory symptoms develop.

In the event of splashes or contact with eyes :

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open.

If there is any redness, pain or visual impairment, consult an ophthalmologist.

In the event of splashes or contact with skin :

Watch out for any remaining product between skin and clothing, watches, shoes, etc.

Rinse with water and soap.

Remove contaminated clothes.

Obtain medical attention if irritation becomes apparent.

In the event of swallowing :

Do not give the patient anything orally.

In the event of swallowing, if the quantity is small (no more than one mouthful), rinse the mouth with water and consult a doctor.

Seek medical attention immediately, showing the label.

Give at least 1/2 L of water to drink.

Obtain medical attention if gastrointestinal symptoms develop.



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Do not induce vomiting.

4.2. Most important symptoms and effects, both acute and delayed

When large amounts are ingested orally, congestion may occur.

4.3. Indication of any immediate medical attention and special treatment needed

Specific and immediate treatment :

N/A

Information for the doctor :

Medications efficiency can be reduced by the adsorbing power of the activated carbon.

SECTION 5 : FIREFIGHTING MEASURES

Flammable.

5.1. Extinguishing media

Keep packages cool when in the vicinity of flames.

Suitable methods of extinction

In the event of a fire, use :

- sprayed water or water mist
- carbon dioxide (CO₂)
- foam

Prevent the effluent of fire-fighting measures from entering drains or waterways.

Unsuitable methods of extinction

In the event of a fire, do not use :

- water jet

in the closed areas, in order to avoid the water contamination.

5.2. Special hazards arising from the substance or mixture

A fire will often produce a thick black smoke. Exposure to decomposition products may be hazardous to health.

Do not breathe in smoke.

In the event of a fire, the following may be formed :

- carbon monoxide (CO)
- carbon dioxide (CO₂)
- other decomposition products for the saturated activated carbon.

After a fire, smoldering hotspots within the activated carbon may be present for a long time.

Activated Carbon which has been allowed to smolder for a long time in a confined space may accumulate carbon monoxide above its lower explosion limit.

5.3. Advice for firefighters

Due to the toxicity of the gas emitted on thermal decomposition of the products, fire-fighting personnel are to be equipped with autonomous insulating breathing apparatus.

SECTION 6 : ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

For first aid worker

First aid workers will be equipped with suitable personal protective equipment (See section 8).

6.2. Environmental precautions

Prevent any material from entering drains or waterways.

6.3. Methods and material for containment and cleaning up

Retrieve the product by mechanical means (sweeping/vacuuming) : do not generate dust.

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6.4. Reference to other sections

See also sections 2 & 8

SECTION 7 : HANDLING AND STORAGE

Requirements relating to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

Always wash hands after handling.

Prevent dust generation. Apply good working practices and engineering procedures during discharge.

See the exposure controls and personal protection measures in the section 8.

Fire prevention :

Prevent access by unauthorised personnel.

Recommended equipment and procedures :

For personal protection, see section 8.

Observe precautions stated on label and also industrial safety regulations.

Ensure containment and adequate ventilation.

Whenever workers enter a vessel containing activated carbon, the oxygen content should be determined and work procedures for potentially low oxygen areas should be followed.

Prohibited equipment and procedures :

No smoking, eating or drinking in areas where the substance is used.

7.2. Conditions for safe storage, including any incompatibilities

Keep away from any chemical (solvents and strong oxidisers).

Keep away from heat sources.

Store in a well-ventilated area.

Storage

Keep away from heat and in a cool place.

Store and keep away from any chemical (solvents and strong oxidisers).

Storage of wet activated carbon in a closed area can deplete oxygen from air.

Packaging

Always keep in packaging made of an identical material to the original.

Store in the closed, original packaging.

7.3. Specific end use(s)

No data available.

SECTION 8 : EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Occupational exposure limits :

Non otherwise classified dusts : 10 mg/m³

- UK / WEL (Workplace exposure limits, EH40/2005, 2007) :

CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :
7440-44-0	4 mg/m ³	-	-	-	R

Biological limits :

/

Derived no effect level (DNEL) or derived minimum effect level (DMEL):

- Made under license of Carbons Label Systems ACCES Software from INCDyne - <http://www.incdyne.com>



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Final use:

Exposure method:
Potential health effects:
DNEL :

Exposure method:
Potential health effects:
DNEL :

Final use:

Exposure method:
Potential health effects:
DNEL :

Exposure method:
Potential health effects:
DNEL :

Workers.

Inhalation.
Short term local effects.
3 mg of substance/m³

Inhalation.
Long term systemic effects.
3 mg of substance/m³

Consumers.

Inhalation.
Short term local effects.
0.5 mg of substance/m³

Inhalation.
Long term systemic effects.
0.5 mg of substance/m³

8.2. Exposure controls

Suitable technical inspections

A local exhaust ventilation is required (minimum efficiency 90%).

Personal protection measures, such as personal protective equipment

Use personal protective equipment that is clean and has been properly maintained.

Store personal protective equipment in a clean place, away from the work area.

Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

- Eye / face protection

Avoid contact with eyes.

Before handling powders or dust emission, wear mask goggles in accordance with standard EN166.

- Hand protection

Wear suitable protective gloves in the event of prolonged or repeated skin contact.

Type of gloves recommended :

- Natural latex

- Body protection

Work clothing worn by personnel shall be laundered regularly.

After contact with the product, all parts of the body that have been soiled must be washed.

- Respiratory protection

Avoid breathing dust.

Type of FFP mask :

Wear a disposable half-mask dust filter in accordance with standard EN149.

Category :

- FFP2

Particle filter according to standard EN143 :

- P2 (White)

Exposure controls linked to environmental protection

Local exhaust ventilation to remove material at source.

Contained storage.

Regulated waste disposal.

AquaSorb CB Series - Activated Carbon

SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

General information :

Physical state :	Powder or dust.
Apparent bulk density (Packed) :	300-700 kg/m ³
Odour:	None
Color:	Black

Important health, safety and environmental information

pH :	Not stated. Slightly basic.
Boiling point/boiling range :	Not specified.
Flash point interval :	Not relevant.
Explosive properties, lower explosivity limit (%) :	60 g/m ³
Vapour pressure (50°C) :	Not relevant.
Density :	< 1 Method for determining the density :
ASTM D2854	
Water solubility :	Insoluble. Method for determining the water solubility : OCDE Guideline 105 (Water solubility).
Melting point/melting range :	Not specified.
Self-ignition temperature :	Not specified.
Decomposition point/decomposition range :	Not specified.
Information related to ignition / explosivity	
Minimum ignition temperature of a dust cloud:	550°C Method: EN50281/VDI2263 - dust cloud in contact with a hot surface (Godbert-Greenwald)
Inflammation of a trail:	BZ 3
..	VDI 2263/1 - Combustion factor
Minimum ignition energy of a dust cloud:	>1000 mJ
Smolder temperature	280°C
..	Method: EN50281/VDI2263 - Ignition temperature in layer
Auto-ignition temperature	160°C
..	Method: EN 15188/VDI2263 - hot storage 400cc
Explosivity:	Explosible
Maximum explosion pressure (Pmax):	8 bar
Maximum rate of explosion pressure rise (dp/dt max):	315 bar/s
Kmax / Kst:	88 bar.m.s ⁻¹
Dust explosion class:	St 1

9.2. Other information

Physical and chemical properties of the saturated activated carbon may be different from the virgin material.

SECTION 10 : STABILITY AND REACTIVITY

10.1. Reactivity

This product shows no reactivity under the specified conditions of storage, shipment and use.



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10.2. Chemical stability

This substance is stable under the recommended handling and storage conditions in section 7.

This substance is not classified as an explosive but can nevertheless in practice present explosive properties when heated in a sufficiently confined atmosphere.

10.3. Possibility of hazardous reactions

In contact with solvents and strong oxidisers.

10.4. Conditions to avoid

Avoid :

- heating
- heat
- formation of dusts

May decompose under the effect of heat.

Dusts can form an explosive mixture with air.

10.5. Incompatible materials

Keep away from :

- strong oxidising agents
- strong acids
- flammable material
- solvents

10.6. Hazardous decomposition products

The thermal decomposition may release/form :

- carbon monoxide (CO)
- carbon dioxide (CO₂)

SECTION 11 : TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

In the event of dust formed by mechanical action (sanding, sawing, etc.), this dust may cause irritation by inhalation and contact with eyes.

11.1.1. Substances

Based on the physical and chemical properties of activated carbons, the absence of effects on toxicological studies and the therapeutic use of activated carbons as adsorbing agents for the treatment of acute poisoning and acute diarrhoea, it can be expected that Activated Carbon is not absorbed via the oral, dermal and inhalation routes.

Acute toxicity :

ACTIVATED CARBON - HIGH DENSITY SKELETON (AC-HDS) (CAS: 7440-44-0)

Oral route :

LD50 > 2000 mg/kg

Species : Rat

OECD Guideline 423 (Acute Oral toxicity Acute Toxic Class Method)

Inhalation route :

LC50 > 64.4 mg/l

Species : Rat

OECD Guideline 403 (Acute Inhalation Toxicity)

Skin corrosion/skin irritation :

ACTIVATED CARBON - HIGH DENSITY SKELETON (AC-HDS) (CAS: 7440-44-0)

Corrosivity :

No observed effect.

Species : Rabbit

OECD Guideline 404 (Acute Dermal Irritation / Corrosion)



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Serious damage to eyes/eye irritation :

ACTIVATED CARBON - HIGH DENSITY SKELETON (AC-HDS) (CAS: 7440-44-0)	
Corneal haze :	Average score = 0.00 Species : Rabbit Duration of exposure : 72 h OECD Guideline 405 (Acute Eye Irritation / Corrosion)
Iritis :	Average score = 0.00 Species : Rabbit Duration of exposure : 72 h OECD Guideline 405 (Acute Eye Irritation / Corrosion)
Conjunctival redness :	Average score = 0.67 Species : Rabbit Duration of exposure : 72 h OECD Guideline 405 (Acute Eye Irritation / Corrosion)
Conjunctival oedema :	Average score = 0.33 Species : Rabbit Duration of exposure : 72 h OECD Guideline 405 (Acute Eye Irritation / Corrosion)

Respiratory or skin sensitisation :

- Inhalation	No information available
- Skin	Not sensitising.
ACTIVATED CARBON - HIGH DENSITY SKELETON (AC-HDS) (CAS: 7440-44-0)	
Local lymph node stimulation test :	Non-Sensitiser. Species : Mouse OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)

Germ cell mutagenicity :

All the key studies indicate that the substance does not show any genotoxic potential. Therefore, it can be concluded that the substance is not mutagenic and does not need to be classified for mutagenicity according to the criteria outlined in Annex I of 1272/2008/EC (CLP / EU GHS) and Annex VI of 67/548/EEC (DSD/DPD).

ACTIVATED CARBON - HIGH DENSITY SKELETON (AC-HDS) (CAS: 7440-44-0)	
Mutagenesis (in vitro) :	Negative. Species : Bacteria OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Ames test (in vitro) :	Negative. With or without metabolic activation. Species : S. typhimurium TA1535

Carcinogenicity :

No data available

Reproductive toxicant :

No data available

Specific target organ systemic toxicity - single exposure :

ACTIVATED CARBON - HIGH DENSITY SKELETON (AC-HDS) (CAS: 7440-44-0)	
Oral route :	C > 2000 mg/kg bodyweight Species : Rat



SECTION 12 : ECOLOGICAL INFORMATION

12.1. Toxicity

12.1.1. Substances

As Activated Carbon is insoluble in water, no toxicity is expected.

12.2. Persistence and degradability

Activated Carbon - HDS type is a refractory material and not amenable to break down by any natural chemical or enzymatic processes.

AC - HDS cannot be rendered into a soluble form capable of being absorbed.

Therefore it cannot find its way to any cell site where it could be conceivably be biodegraded.

12.3. Bioaccumulative potential

The substance has a very low potential to bioaccumulate in aquatic species (e.g. fish), i.e. a BCF < 10.

The substance has no log Kow, the substance size will impede passing membranes (particles with size > 0.5µm) and is not soluble in water. The bioaccumulation study is thus infeasible.

12.4. Mobility in soil

No data available, as the substance is insoluble.

12.5. Results of PBT and vPvB assessment

According to the ECHA Guidance on chemical safety assessment, Chapter R11, section R11.1.2.1: "The PBT and vPvB criteria of Annex XIII to the Regulation do not apply to inorganic substances". As Activated Carbon - HDS type is to be considered as an inorganic substance, the PBT assessment is not applicable.

12.6. Other adverse effects

Large quantities of Activated Carbon of HDS type in water may cause a pH increase.

SECTION 13 : DISPOSAL CONSIDERATIONS

Proper waste management of the substance and/or its container must be determined in accordance with Directive 2008/98/EC.

13.1. Waste treatment methods

Do not pour into drains or waterways.

Waste :

Waste management is carried out without endangering human health, without harming the environment and, in particular without risk to water, air, soil, plants or animals.

Recycle or dispose of waste in compliance with current legislation, preferably via a certified collector or company.

Do not contaminate the ground or water with waste, do not dispose of waste into the environment.

Soiled packaging :

Empty container completely. Keep label(s) on container.

Give to a certified disposal contractor.

Codes of wastes (Decision 2001/573/EC, Directive 2006/12/EEC, Directive 94/31/EEC on hazardous waste) :

- Exhausted Activated Carbon from Water Treatment: 19 09 04

- Exhausted Activated Carbon from flue gas treatment : 19 01 10*

- Exhausted Activated Carbon from Mineral Chemistry wastes : 06 07 02* - AC used for the chlorine production / 06 13 02* - saturated AC (except section 06 07 02*).

- Other applications: see the regulations of wastes nomenclatures.

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SECTION 14 : TRANSPORT INFORMATION

Transport product in compliance with provisions of the ADR for road, RID for rail, IMDG for sea and ICAO/IATA for air transport (ADR 2013 - IMDG 2012 - ICAO/IATA 2014).

14.1. UN number

1362

14.2. UN proper shipping name

UN1362=CARBON, ACTIVATED

14.3. Transport hazard class(es)

- Classification :

4.2

- Exemption

ADR/RID: special provision 646

IMDG: special provision 925

IATA: special provision A3

Steam activated carbon

Does not meet the defined criteria, after having been submitted to the 4.2 test (UN Manual of Tests and Criteria (§ 33.3.1.3.3))

14.4. Packing group

III

14.5. Environmental hazards

-

14.6. Special precautions for user

ADR/RID	Class	Code	Pack gr.	Label	Ident.	LQ	Provis.	EQ	Cat.	Tunnel
	4.2	S2	III	4.2	40	0	646	E1	4	E
IMDG	Class	2°Label	Pack gr.	LQ	EMS	Provis.	EQ			
	4.2	-	III	0	F-A,S-J	223 925	E1			
IATA	Class	2°Label	Pack gr.	Passager	Passager	Cargo	Cargo	note	EQ	
	4.2	-	III	472	0.5 kg	472	0.5 kg	A3	E1	
	4.2	-	III	Forbidden	Forbidden	-	-	A3	E1	

For limited quantities, see part 2.7 of the OACI/IATA and chapter 3.4 of the ADR and IMDG.

For excepted quantities, see part 2.6 of the OACI/IATA and chapter 3.5 of the ADR and IMDG.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

No data available.

SECTION 15 : REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

- Classification and labelling information included in section 2:

The following regulations have been used:

- Directive 67/548/EEC and its adaptations

- Directive 1999/45/EC and its adaptations

- EU Regulation No. 1272/2008 amended by EU Regulation No. 487/2013.

- EU Regulation No. 1272/2008 amended by EU Regulation No. 758/2013.

- EU Regulation No. 1272/2008 amended by EU Regulation No. 944/2013.

- EU Regulation No. 1272/2008 amended by EU Regulation No. 605/2014.

- Container information:

No data available.

- Particular provisions :

No data available.

AquaSorb CB Series - Activated Carbon

- Standardised American system for the identification of hazards presented by the product in view of emergency procedures (NFPA 704) :

NFPA 704, Labelling: Health=0 Inflammability=3 Instability/Reactivity=4 Specific Risk=none



15.2. Chemical safety assessment

A chemical safety assessment according to the rules stipulated in REACH directive has been performed. The appendices provide an overview of the risk management measures as based on this assessment.

SECTION 16 : OTHER INFORMATION

Since the user's working conditions are not known by us, the information supplied on this safety data sheet is based on our current level of knowledge and on national and community regulations.

It is at all times the responsibility of the user to take all necessary measures to comply with legal requirements and local regulations.

The information in this safety data sheet must be regarded as a description of the safety requirements relating to the substance and not as a guarantee of the properties thereof.

In compliance with directives 67/548/EEC, 1999/45/EC and their amendments.

Safety phrase :

S 22

Do not breathe dust.

Abbreviations :

DNEL : Derived No-Effect Level

ADR : European agreement concerning the international carriage of dangerous goods by Road.

IMDG : International Maritime Dangerous Goods.

IATA : International Air Transport Association.

ICAO : International Civil Aviation Organisation

RID : Regulations concerning the International carriage of Dangerous goods by rail.

WGK : Wassergefährdungsklasse (Water Hazard Class).



TECHNICAL DATASHEET

AquaSorb® CB1-MW

Activated carbon for potable and industrial water treatment

AquaSorb® CB1-MW is a very high activity powdered activated carbon, specifically manufactured for the treatment of water for human consumption, in both municipal and industrial applications. This grade of activated carbon provides a high removal efficiency against a variety of aqueous pollutants, especially organic matter and taste and odour compounds. AquaSorb® CB1-MW is available in a closely controlled particle size distribution to suit all downstream separation techniques. The material is compliant with international standards for activated carbon products used in this application.



SPECIFICATION*

Iodine adsorption	min. 950 mg/g
Total ash content	max. 15 %
Moisture content	max. 5 %
Apparent density, tapped	0.2 - 0.75g/cc
Water solubles	max. 3 %

TYPICAL PROPERTIES*

Surface area (BET N ₂)	1000 m ² /g
Tannin value	250 mg/l

* SPECIFICATIONS AND TYPICAL PROPERTIES ARE PRODUCED USING JACOBI CARBONS "TEST" METHODS. THEY ARE LISTED FOR INFORMATIONAL PURPOSES ONLY AND NOT TO BE USED AS PURCHASE SPECIFICATIONS. SALES SPECIFICATIONS CAN BE OBTAINED FROM YOUR JACOBI CARBONS TECHNICAL SALES REPRESENTATIVE AND SHOULD BE REVIEWED BEFORE PLACING AN ORDER.

Features and Benefits

- Rapid adsorption kinetics
- Very high activity adsorbent
- Mesoporous product
- Excellent taste and odour removal
- High organic matter adsorption
- Carefully controlled particle size
- Compliant with AWWA B600 standard

Available Particle Sizes

- | | |
|-------------|------|
| • <100 mesh | >99% |
| • <200 mesh | >95% |
| • <325 mesh | >90% |

Standards and Certifications

- AWWA B600
- ANSI/NSF61
- Halal certified production
- Kosher certified production
- ISO 9000:2008
- ISO 14001:2004

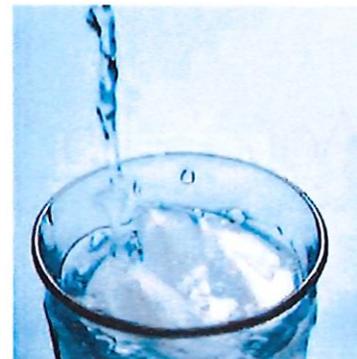
Standard Packaging

- 15 kg sack (33 lb)
- 300 kg bulk bag (660 lb)
- Bulk tanker
- Other packing considered on request



Polypropylene liner-free FIBCs (super sacks), two bags per pallet

Visit: www.jacobi.net



TASTE AND ODOUR REMOVAL

Methyl-Iso Borneol

Influent concentration	127ng/l
AquaSorb CB1-MW at 10mg/l dose	Effluent concentration 67ng/l
	Removal efficiency 47%
AquaSorb CB1-MW at 40mg/l dose	Effluent concentration 21ng/l
	Removal efficiency 83%

Geosmin

Influent concentration	187ng/l
AquaSorb CB1-MW at 10mg/l dose	Effluent concentration 70ng/l
	Removal efficiency 62%
AquaSorb CB1-MW at 40mg/l dose	Effluent concentration 7ng/l
	Removal efficiency 96%

DATA BASED ON UNPUBLISHED TESTING BY AQUARIAN WATER QUALITY CENTRE. TESTS WERE CONDUCTED AS A TREATMENT STUDY AT 10 AND 40 MG/L DOSE. 2 LITRE SAMPLES OF SKIMMED MILK WATER CONTAINING 100000 "TASTE" COLONY UNITS OF METHYLISSOBORNEOL AND GEOSMIN. CONTACT WAS ESTABLISHED BY SIFTING FOR 20 MINUTES AT 100 RPM WITH A FLAT BLADE PAPER STRIP. TREATED WATER WAS FURTHER TREATED FOR 20 MINUTES AT 100 RPM WITH PAPER STRIP AND ANALYSED FOR MIB AND GEOSMIN ACCORDING TO THE POINT-TO-POINT CONTROL.

BURNING AND EXPLOSION CHARACTERISTICS

Auto-ignition temperature	400cm ³	160 °C
	6400cm ³	150 °C
	12800cm ³	130 °C
Smolder temperature	No smoldering up to 400 °C	
Dust explosion class	St1 (weak explosion potential)	
Combustion factor	BZ3: no spread of fire	
Minimum ignition energy	> 1100mJ	
Minimum ignition temperature	> 400 °C	
Lower explosion limit	250g/m ³	
Electrical resistivity	0.05 x 10 ⁴ Ω/cm	
Explosion severity (20l sphere)	P max.	8 bar
	MRE (ΔP)	33 bar/s
	Kmax or Kst	88 bar/m/s

DATA PROVIDED IS INDICATIVE ONLY AND BASED ON THE ANALYSIS OF MATERIAL UNDER SPECIFIC CONDITIONS. THESE MAY NOT BE REPRESENTATIVE OF THE WHOLE CIRCUMSTANCES DURING THE FRIEDING AND USE OF THIS ACTIVATED CARBON GRADE.

PRODUCTION CAPABILITY

Jacobi Carbons operates multiple facilities for the manufacture of activated carbons. These production plants are strategically located close to market and raw material sources. With an annual output in excess of 70 000 metric tonnes, Jacobi Carbons is able to supply product to all locations around the globe. All production units are certified according to internationally recognised standards (ISO9000 & ISO14001). Quality control is consistent throughout the group of companies and goods are always shipped in compliance with customer specifications.

CARBON APPLICATION KNOWLEDGE

The supply of activated carbon products is supported by an industry-leading technical support service. Our in-house expertise extends over many years of practical experience in the design and utilisation of activated carbon in a variety of applications. Jacobi Carbons can assist in the design, specification and method of use of our products to achieve the optimum treatment outcome required. Our laboratory facilities support our product portfolio with a extensive library of technical data.



For more information or to contact Jacobi visit: www.jacobi.net

NOTICE

THIS DOCUMENT IS THE PROPERTY OF JACOBI CARBONS. IT IS LOANED TO YOU BY JACOBI CARBONS AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF JACOBI CARBONS.

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 info@jacobi.net | www.jacobi.net





TASTE AND ODOUR REMOVAL

Methyl-Iso Bornol			
Influent concentration		127ng/l	
AquaSorb CBI-MW at 10mg/l dose	Effluent concentration	67ng/l	
	Removal efficiency	47%	
AquaSorb CBI-MW at 40mg/l dose	Effluent concentration	21ng/l	
	Removal efficiency	83%	
Geosmin			
Influent concentration		187ng/l	
AquaSorb CBI-MW at 10mg/l dose	Effluent concentration	70ng/l	
	Removal efficiency	62%	
AquaSorb CBI-MW at 40mg/l dose	Effluent concentration	7ng/l	
	Removal efficiency	96%	

DATA BASED ON INDEPENDENT TESTING BY AUSTRALIAN WATER QUALITY CENTRE WITH EACH WATER DOSED AS A PRE-SETTLED SURRY AT 10 AND 40 MG/L INTO 2 litre volumes of STABILISED TAP WATER CONTAINING KNOWN TARGET CONCENTRATIONS OF METHYL-ISOBORNOL (MIB) AND GEOSMIN. CONTACT WAS MAINTAINED BY MIXING FOR 20 MINUTES AT 100RPM WITH A FLAT BLADE PADDLE STIRrer. TREATED WATER WAS FURTHER FILTRATED THROUGH 125MM GORE SIZE PAPER FILTERS AND ANALYSED FOR MIB AND GEOSMIN AGAINST THE POSITIVE STRIKED CONTROL.

BURNING AND EXPLOSION CHARACTERISTICS

Auto-ignition temperature	400cm ³	160 °C
	6400cm ³	150 °C
	12800cm ³	130 °C
Smolder temperature	No smoldering up to 400 °C	
Dust explosion class	St1 (weak explosion potential)	
Combustion factor	BZ3: no spread of fire	
Minimum ignition energy	> 1100mJ	
Minimum ignition temperature	> 400 C	
Lower explosion limit	250g/m ³	
Electrical resistivity	0.05 x 10 ⁴ Ω/cm	
Explosion severity (20l sphere)	P max.	8 bar
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TECHNICAL DATASHEET

AquaSorb® CB1-MW

Activated carbon for potable and industrial water treatment

AquaSorb® CB1-MW is a very high activity powdered activated carbon, specifically manufactured for the treatment of water for human consumption, in both municipal and industrial applications. This grade of activated carbon provides a high removal efficiency against a variety of aqueous pollutants, especially organic matter and taste and odour compounds. AquaSorb® CB1-MW is available in a closely controlled particle size distribution to suit all downstream separation techniques. The material is compliant with international standards for activated carbon products used in this application.



SPECIFICATION*

Iodine adsorption	min. 950 mg/g
Total ash content	max. 15 %
Moisture content	max. 5 %
Apparent density, tapped	0.2 - 0.75g/cc
Water solubles	max. 3 %

TYPICAL PROPERTIES*

Surface area (BET N ₂)	1000 m ² /g
Tannin value	250 mg/l

* SPECIFICATIONS AND TYPICAL PROPERTIES ARE PRODUCED USING JACOBI CARBONS' TEST METHODS. THEY ARE LISTED FOR INFORMATIONAL PURPOSES ONLY AND NOT TO BE USED AS PURCHASE SPECIFICATIONS. SALES SPECIFICATIONS CAN BE OBTAINED FROM YOUR JACOBI CARBONS TECHNICAL SALES REPRESENTATIVE AND SHOULD BE REVIEWED BEFORE PLACING AN ORDER.

Features and Benefits

- Rapid adsorption kinetics
- Very high activity adsorbent
- Mesoporous product
- Excellent taste and odour removal
- High organic matter adsorption
- Carefully controlled particle size
- Compliant with AWWA B600 standard

Available Particle Sizes

- | | |
|-------------|------|
| • <100 mesh | >99% |
| • <200 mesh | >95% |
| • <325 mesh | >90% |

Standards and Certifications

- AWWA B600
- ANSI/NSF61
- Halal certified production
- Kosher certified production
- ISO 9000:2008
- ISO 14001:2004

Standard Packaging

- 15 kg sack (33 lb)
- 300 kg bulk bag (660 lb)
- Bulk tanker
- Other packing considered on request



Polypropylene liner-free FIBCs (super sacks), two bags per pallet

Visit: www.jacobi.net



AULICK

February 8, 2024

Going forward, as CITCO Water and Aulick Chemical Solutions, Inc. partner to expand chemical solutions, this and all municipal chemical bids will be from the combined entities.

For more than nine decades CITCO Water has been serving the water and wastewater industries with the goal of offering customers everything needed to "take water from the source, deliver it to the consumer, and return it back to the source again." CITCO Water sums up this mission in four simple words: "Solutions driven. Commitment given."

CITCO Water is proud to announce the addition of Aulick Chemical Solutions, Inc. to the CITCO Water family, forming the most robust Chemical Solutions offering in our region with an impressive team of experts, complete range of innovative products, and knowledgeable sales team to help you with all your chemical needs.

Founded in 1931 in Huntington, WV by Charles Irving Thornburg, CITCO has been family-operated ever since Web Morrison purchased the company in 1958. The organization has since grown to employ over 140 people across West Virginia, Kentucky, Tennessee, Pennsylvania, South Carolina, and Virginia. Today, CITCO Water offers six sub-brands to provide customers with comprehensive waterworks solutions including chemical, smart meter, integrated tech, hardware, inventory, and repair.

The combination of CITCO Water and Aulick Chemical Solutions means the formation of what is certainly *the* most robust chemical solutions company serving the water and wastewater industries in our region.

Thank you for the opportunity and we look forward to working together!

Alex Meadows

Alex Meadows
Chief Revenue Officer



CITY OF SPRING HILL, TENNESSEE

UTILITY DEPARTMENT

INVITATION TO BID,

SPECIFICATIONS AND CONTRACT DOCUMENTS

FOR PURCHASE OF ACTIVATED CARBON

2024-52100-01

Bid packets are available at: www.springhilltn.org. The City of Spring Hill will advertise this bid until 2:00 P.M. on Wednesday, July 3rd, 2024. Completed, sealed bid packets may be dropped off at Spring Hill City Hall, 199 Town Center Parkway, Spring Hill, TN or mailed to the City of Spring Hill, PO Box 789, Spring Hill, Tennessee, 37174. Attention: April Goad, City Recorder and marked "Bid for WATER PLANT ACTIVATED CARBON"

The City reserves the right to reject any or all Proposals regarding the services, to waive irregularities and/or Informalities in any Proposal, and to make an award in any manner, consistent with law, deemed in the best interest of the City.

INVITATION TO BID – ACTIVATED CARBON

The City of Spring Hill Water Treatment Plant will be accepting sealed bids for activated carbon. Bidders shall submit sealed quotations no later than 2:00 p.m. (CST), Tuesday, July 3, 2024, at which time bids will be opened and read aloud. Bidding documents may be obtained at Spring Hill City Hall during regular business hours or www.springhilltn.org.

Bids should be mailed, or hand delivered to:

April Goad, City Recorder
City of Spring Hill
Label Envelope/Package: Invitation to Bid
WATER PLANT ACTIVATED CARBON
199 Town Center Parkway (for hand-delivery or courier services)
P.O. Box 789 (for regular mailing services)
Spring Hill, TN 37174

PROJECTED TIMELINE:

Invitation To Bid Release	June 13, 2024
Addendum release date (if applicable)	June 26, 2024
Bids Due	July 3, 2024, at 2:00 p.m. CST
Selection of Recommended Vendor	July 8, 2024
BOMA Meeting	July 15, 2024

SCOPE:

The Water Treatment Plant of the City of Spring Hill is seeking sealed bids to establish a contract for the purchase of activated carbon. This product will be used in the treatment process of drinking water and must be certified to meet the NSF/ANSI 60 Standards and any other required drinking water standard at the time of bid. Annual usage is estimated to be 53,000 pounds, though the City does not guarantee the annual quantity to be purchased.

GENERAL CONDITIONS:

- 1) **Acceptance of Bids:** The City of Spring Hill reserves the right to reject any and all bids, to waive any informal technicalities or defects, the scope and nature of which it shall be sole judge, in any bid, insofar as such technicality or defects do not legally, materially or substantially change such bid.

The City shall have ninety (90) days from bid opening date in which to accept bid.

- 2) **Error in Bid:** In case of an error in the extension prices in the bid, the unit price governs. No bid shall be altered, amended or withdrawn, unless the acceptance date has expired, after the opening date of bids. Negligence on the part of the bidder in preparing the bid confers no right for withdrawal of the bid after it has been opened.

- 3) **Discount Period:** Time in connection with any discount offered will be computed from the date of delivery, or the date correct invoices are received, whichever is later. Discounts other than "Time Discounts" shall be shown on the face of the proposal sheet under "Terms".
- 4) **Sample of Materials:** Samples of items, when requested, must be furnished free of expense to the City, at the time bids are opened or later, if such are called for after the bids are opened. If such samples are not destroyed in the process of sampling, they will be returned at the bidder's expense.
- 5) **Signatures on Bids:** Each bid must contain the full name and business address of the bidder. Any person signing a proposal sheet for himself or as agent, employee or officer of another must show his title and, if requested by the City, shall furnish proof of his authority to make such proposal.
- 6) **Alternate Bids:** Alternate bids will be considered providing such items that appear on such bids meet specifications. Where equivalent items are bid upon, said City reserves the sole right in determining whether they meet specifications.
- 7) **Bid Sheets:** Bidders shall use the bid sheets furnished by the City. Failure to submit this sheet as required shall render the proposal invalid. Bid sheets must contain prices on per unit and aggregate basis and the total amount of the bid must be stated on the bid sheet.
- 8) **Federal or State Sales, Excise or Use Tax:** Every bid shall separately state and set forth, therein the amount of any and all Federal and State sales, excise or use taxes included in the bid prices. If any such taxes are included in the prices bid, the City reserves the right in making the award to deduct any amount of such taxes thereof.
- 9) **Delivery:** The number of calendar days in which delivery will be made after contract is executed and purchase order placed shall be stated in the bid. When the bidder states no time delivery, it is understood and agreed that delivery is to be made within fifteen (15) days after receipt of order, unless otherwise stated in the specifications.
- 10) **Compliance:** Contractor shall abide by all federal, state and local laws and statutes and obtain all permits required in number fifteen (15) of these conditions.
- 11) **Specifications:** It is understood that reference to attached specifications shall be sufficient to make the terms of such specifications binding on the contractor. In some instances, the name of the manufacturer, a special brand, or make of an item is used in describing the item or items desired; but this does not restrict the bidder to that manufacturer or specific article, this means being used simply to indicate the character or quality of the article or service desired; but the articles on which the proposal is submitted must be equal to that specified, and a statement to that effect shall be made a part of the proposal. Where conflict occurs between the requirement or the General Conditions and the specifications, the requirements of the specifications will govern.
- 12) **Inspection:** Final inspection and acceptance or rejection will be made at the time of delivery, but all products and workmanship shall be subject to inspection and test at all times and places. The right is reserved to reject articles that contain defective material and workmanship. Rejected materials shall be removed by and at the expense of the

contractor promptly after notification of rejection. The City shall not be obligated to pay the full price for any items that do not meet specifications; however, payment may be made at a proper reduction in price.

- 13) **Bid Opening:** Bids may be mailed or delivered to April Goad, City Recorder of the City of Spring Hill, Tennessee. All bids will be opened and publicly read at a time specified on the Bid Sheet. Bids received after the specified time for opening, as shown on the invitation to bid, will not be accepted.
- 14) **Cancellation:** The City reserves the right to cancel an accepted bid or contract in whole or in part due to nonperformance or defective products.
- 15) **Permit Requirements:** Successful bidder will be responsible for securing any necessary permits for complying with all required inspections whether local state or federal.
- 16) **Multi-Year Contracts:** The City reserves the right to enter into a multi-year contract with the awarded vendor not to exceed an aggregate period of three years. The City further has the right to terminate any multi-year contract due to non-appropriation of funds.
- 17) **Financial Statements:** Financial statements will be submitted upon request.
- 18) **Term of Payment:** Payment will be made in full after the satisfactory receipt of goods, materials, supplies, and equipment. Executed contracts must specifically state if there is any partial payment or other deviation from this method of payment.
- 19) **Title VI Policy-** The City of Spring Hill will not discriminate in the purchase of all goods and services on the basis of race, color, religion, sex, national origin, age, disability or any other lawfully protected classification. Verbal quotations or quotations received after the closing date will not be accepted. The City of Spring Hill reserves the right to reject any and all bids, to waive technicalities or informalities and to accept any bid deemed in the best interest of the City of Spring Hill
- 20) **COMPLIANCE WITH PUBLIC CHAPTER 775 – TCA, TITLE 12, CHAPTER 4, PART 1:** In accordance with Tennessee Code Annotated, Title 12, Chapter 4, Part 1, the selected Consultant cannot be currently engaged in, and will not for the duration of the contract, engage in a boycott of Israel.
- 21) **Tennessee Public Records Act-** Any and all documents submitted to the City of Spring Hill that are associated with this contract are subject to the Tennessee Public Records Act. Access to the record is governed by the Tennessee Public Records Act and the policies of the City of Spring Hill and the Office of Open Records Counsel.
- 22) **Complaints – Vendors**

Vendors shall have the right to present a complaint, dispute or grievance concerning unfair treatment, contracts, deliveries, payments, restrictions, and other incidents. The following steps are intended to provide uniform procedures for a vendor to express a problem and

obtain remedy.

Step One - Vendor must file a grievance with the City Recorder of the City of Spring Hill no later than seven (7) calendar days after the occurrence of the dispute or incident. The complaint must be in writing and include all supporting data and desired solution or remedy. The Finance Director will review the complaint with the user department and provide a written reply within forty-five (45) days to the vendor.

Step Two - If the vendor is not satisfied with the Finance Director's response, the vendor may appeal in writing to the City Administrator, who shall with the advice of the Finance Director and/or City Attorney, make a written determination to all parties involved. The City Administrator's decision shall be final.

SPECIAL CONDITIONS

- 1) Safety Data Sheets must be supplied with the initial shipment.
- 2) For product substitutions, the vendor must agree to furnish representative samples for testing. If full scale testing of any product appears desirable, the vendor and the City may negotiate a contract for a 30-day trial.
- 3) Consideration of alternative products will be optional on the part of the City and in no way obligates the City to consider, test, or accept any product.
- 4) Vendor shall provide reasonable technical assistance in the event of a product problem.
- 5) Bid prices shall be FOB Spring Hill Water Treatment Facility and shall be quoted on a per pound basis.

INSURANCE

The awarded vendor, if requested by the City, shall purchase and maintain in force, at his own expense, such insurance as will protect him and the City from claims which may arise out of or result from the vendor's execution of the work, whether such execution be by himself, his employees, agents, subcontractors, or by anyone for whose acts any of them may be liable. The insurance coverage shall be such as to fully protect the Owner, the City and the general public from any and all claims for injury and damage resulting by any actions on the part of the contractor or his forces as enumerated above. The awarded vendor, if requested by the City, shall furnish a copy of an original Certificate of Insurance, naming City of Spring Hill, TN as an additional insured. Should any of the policies be cancelled before the expiration date, the issuing company will mail 30 days written notice to the certificate holder. The vendor shall furnish insurance in satisfactory limits, and on forms and of companies that are acceptable to the City of Spring Hill, TN and shall require and show evidence of insurance coverage on behalf of any subcontractors (if applicable), before entering into any agreement to sublet any part of the work to be done under any bid award.

The following insurance requirements are the minimum that will be acceptable:

1. Workmen's Compensation Insurance - State statutory limits
2. Commercial General Liability - Including products and completed operations coverage and contractual liability on the amount of \$1,000,000 CSL (combined single limit).
3. Commercial Automobile Liability including owned, non-owned and hired car in the amount of \$500,000 CSL.

SPECIFICATIONS AND REQUIREMENTS

Acceptable products which have performed successfully in the past:
 Activated Carbon – Jacobi AquaSorb CBI-MW

Products or brands will be considered and will require product testing by the Water Treatment Facility in order to determine if the product can deliver equivalent performance with the same quantity used. Failure to meet the performance testing will disqualify the product from consideration.

Purity shall meet or exceed these specifications listed.

Chemical & Physical Requirements	
Product	Jacobi AquaSorb CBI-MW Carbon
Type	ANSI/ NSF61 approved
Iodine Adsorption	Min. 950 mg/g
Total Ash content	Max 15%
Moisture Content	Max 5%
Apparent Density, tapped	0.2-0.75g/cc
Water solubles	Max 3%
Surface Area	1000m ² /g
Tanin value	250 mg/l
LABELING	
Each Container shall be clearly labeled in accordance with EPA, OSHA, and DOT Regulations	
PACKAGING	
Container Size	Supersacks
Supersack Dimensions	Outlet must have a minimum length of 25 inches with the tie 12 inches from base of bag and 19 inch outlet diameter
Container Deposit	City will not be responsible for container Deposits
DELIVERY	
Deliveries shall be made in a safe and reasonable manner such that DOT, OSHA and other regulatory codes are not violated. Delivery will be made to the Raw Water Intake at 2061 Carpenter Bridge Road, Columbia TN 38401. No Semi Trucks allowed. All deliveries will be in compliance with the City of Spring Hill Policy.	
PRODUCT FAILURE	
In the event that any product fails to meet specifications, the vendor shall, at no expense to the City, remove the unused portion of the product and refund the purchase price of such unused portion to the City	
Containers dropped during delivery, and/or leaking, corroded, damaged, or suspect containers shall be deemed unacceptable and considered as product failure.	
PRICING	
Bids shall be quoted as price per pound delivered to the City of Spring Hill Water Treatment Plant Raw Water Intake.	
Bids shall be fixed for a period of 12 months from the date of the bid opening. Price adjustments will be considered thereafter.	

INVOICING

The vendor shall invoice the City of Spring Hill, TN Water Treatment Plant. All invoices shall identify date of delivery, product delivered, unit quantity delivered, price per unit, and total per product delivered and finally total invoice price. Materials shall be delivered prepaid and invoices shall include all freight charges.

PAYMENT

Payment will be made by the Finance Department upon the following conditions:

1. Delivery and acceptance of products ordered.
2. Receipt of properly completed invoice by the Water Superintendent.
3. Acceptance of the product and terms and conditions of the invoice as evidenced by the signature of the Water Superintendent on the invoice
4. Within 30 days provided all other conditions of payment have been satisfied.

AWARD

While pricing will be one of the determining factors in the award, it is equally important that:

1. The product offered complies with specifications
2. The product performs the intended function without any damage to or degrading of the plant operations.
3. The amount of product required to achieve the desired results will also factor into the final award decision.
4. Any bid award shall be for a period of one year with the City retaining the option to renew for two additional one-year periods.
5. Bids shall be fixed for the initial award period.
6. Price adjustments for any subsequent renewal period will be considered provided the adjustment is based upon a price increase from the manufacturer and not an increase in profit margins.
7. The vendor shall notify the Water Superintendent and Finance Director for the City of Spring Hill 90 days in advance of any intended price increase.

The awarded vendor will be required to execute a requirements agreement which shall incorporate the terms and conditions of this Invitation to Bid and the vendor's response.

**RESPONSE TO INVITATION TO BID
CITY OF SPRING HILL- ACTIVATED
CARBON**

Manufacturer of ACTIVATED CARBON:

Jacobi

Brand:

Jacobi CB1

Fixed price per pound for 12-month period from date of award \$ 1.733/lb

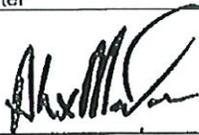
Are you willing to consider an extension of the award beyond an initial 12-month period? Yes No

Are the terms and conditions for extending an award attached? No

Have you attached the product specifications?

In compliance with this Invitation for Bid for activated carbon and subject to all conditions thereof, the undersigned offers and agrees to furnish any or all items and/or services upon which prices are quoted, at the price quoted as specified above. My signature certifies that the accompanying bid is not the result of or affected by, any act of collusion with another person or company engaged in the same line of business or commerce, or any act of fraud punishable under the Laws of the State of Tennessee or the United States. Furthermore, I understand that fraudulent and collusive bidding is a crime and can result in fines, prison sentences, and civil damage awards. I hereby certify that I am authorized to sign this bid for the bidder.

Company Name: CITCO Water

Signature of Vendor:  _____

Name (type/print): Alex Meadows

Title: Chief Revenue Officer

Date: 7/1/2024

IRAN DIVESTMENT ACT

A person engages in investment activities in Iran if:

(1) The person provides goods or services of twenty million dollars (\$20,000,000) or more in the energy sector of Iran, including a person that provides oil or liquefied natural gas tankers, or products used to construct or maintain pipelines used to transport oil or liquefied natural gas, for the energy sector of Iran; or

(2) The person is a financial institution that extends twenty million dollars (\$20,000,000) or more in credit to another person, for forty-five (45) days or more, if that person will use the credit to provide goods or services in the energy sector in Iran and is identified on a list created pursuant to § 12-12-106, as a person engaging in investment activities in Iran as described in this section.

By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization under penalty of perjury, that to the best of its knowledge and belief that each bidder is not on the list created pursuant to Tennessee Code Annotated § 12-12-106."

Vendor Name: CITCO Water

Vendor Signature:



Date: 7/1/2024