SPECIFICATIONS FOR
CITRIC ACID

GENERAL REQUIREMENTS:

The material shall be commonly known as citric acid 50%.

The liquid shall be suitable for feeding by means of metering pumps or other metering devices constructed of corrosion resistant materials.

The material shall be certified as suitable for contact with or treatment of drinking water by an accredited certification organization in accordance to **ANSI / NSF Std. 60, Drinking Water Chemicals – Health Effects**.

The material shall comply with the requirements of the **Safe Drinking Water Act** and other Federal regulations for potable water, wastewater, or reclaimed water as applicable

IMPURITIES:

Citric acid shall contain no soluble material or organic substances in quantities capable of producing deleterious or injurious effects on the health of those consuming water that has been treated properly with the acid.

CERTIFICATIONS:

Copies of certified lab showing compliance with all listed specifications shall be provided with each order of product. Laboratory analysis shall show percent citric acid content, pH, specific gravity as well as the amount of trace impurities tested by the manufacturer.

A current copy of the ANSI / NSF Standard 60 certificate shall be included in the bid packet for the product described. Additionally, each bill of lading shall bear the NSF stamp.

SAMPLES:

A sample of the product shall be provided to SJRA staff prior to unloading the shipment upon request. Once verbal approval is obtained, the driver may unload the product.

QUANTITY:

Please refer to the quantity summary sheet included as part of the bid documents for estimated quantities.

The quantity specified is only an estimated amount. SJRA makes no guarantee that the entire amount will be purchased. No additional compensation will be made to the supplier for any estimated quantity that is not purchased under this contract.

TRAINING:

The vendor shall conduct training classes in the handling and safety of citric acid at the plant site, at the request of Facility Management. The training shall meet all of the requirements of the Hazard Communications Act.

DELIVERY:

Product deliveries shall occur between the hours of 8:00am and 5:00pm CST.

SJRA does not have an air compressor system to aid in unloading chemical tanker trucks. Suppliers will be required to bring their own as needed.

Product shall be unloaded using standard 2" quick connect fittings.

SJRA requires that shipments be accompanied by weight certificates from a certified weigher.

Packaging and shipping of citric acid shall be in accordance with current federal, state and local regulations.

Because the citric acid will be used in the treatment of drinking water, no contamination of the product by toxic substances must occur during shipping or storage and the supplier shall ensure that the transport container is suitably clean before loading.

Citric acid shall be shipped in bulk (truckload) quantities.

Any chemical spills not caused by SJRA will be properly and promptly cleaned and disposed of by the company representative delivering the product and shall be reported immediately to SJRA personnel. This includes chemical spills as well as vehicle fluids that may leak onto SJRA's property.

Prices for bulk material must be for deliveries FOB San Jacinto River Authority, Groundwater Reduction Plan (GRP)., 11998 Pine Valley Dr., Conroe, TX 77304.

SPECIFICATIONS FOR COPPER SULFATE

GENERAL REQUIREMENTS:

The material shall be commonly known as copper sulfate.

The liquid shall be suitable for feeding by means of metering pumps or other metering devices constructed of corrosion resistant materials.

The material shall be certified as suitable for contact with or treatment of drinking water by an accredited certification organization in accordance to **ANSI / NSF Std. 60, Drinking Water Chemicals – Health Effects**.

The material shall be in compliance with **AWWA Standard B602-17 (Copper sulfate)**.

The material shall comply with the requirements of the **Safe Drinking Water Act** and other Federal regulations for potable water, wastewater, or reclaimed water as applicable.

IMPURITIES:

Copper sulfate shall contain no soluble material or organic substances in quantities capable of producing deleterious or injurious effects on the health of those consuming water that has been properly treated with the chemical.

CERTIFICATIONS:

Copies of certified laboratory analysis shall be provided with each order. Laboratory analysis shall show percent soluble cupric ion, percent copper sulfate pentahydrate, pH, specific gravity as well as the amount of trace impurities tested by the manufacturer.

A current copy of the ANSI / NSF Standard 60 certificate shall be included in the bid packet for the product described. Additionally, each bill of lading shall bear the NSF stamp.

METHODS OF ANALYSIS:

The method of analysis shall be in accordance with AWWA Std. B602-17.

SAMPLES:

A sample of the product shall be provided to SJRA staff prior to unloading the shipment, upon request. Once verbal approval is obtained, the driver may unload the product.

CHEMICAL/PHYSICAL CHARACTERISTICS:

Copper sulfate shall exhibit the following properties:
Formula: Aqueous solution of copper (II) sulfate
C.A.S. 7758-98-7 (Copper sulfate)
pH (neat) 2.0-2.1
Specific Gravity @ 70°F (21°C) 1.17 - 1.19
Freezing Point (approx.) 29°F (-2C)
Density, lbs/gal., U.S. 9.76-9.93
Copper sulfate pentahydrate %, 24-26
Soluble cupric ion %, 6.1-6.6

QUANTITY:

Please refer to the quantity summary sheet included as part of the bid documents for estimated quantities.

The quantity specified is only an estimated amount. SJRA makes no guarantee that the entire amount will be purchased. No additional compensation will be made to the supplier for any estimated quantity that is not purchased under this contract.

TRAINING:

The vendor shall conduct training classes in the handling and safety of copper sulfate at the plant site, at the request of Facility Management. The training shall meet all of the requirements of the Hazard Communications Act.

DELIVERY:

Product deliveries shall occur between the hours of 8:00am and 5:00pm CST.

SJRA does not have an air compressor system to aid in unloading chemical tanker trucks. Suppliers will be required to bring their own as needed.

Product shall be unloaded using standard 2" quick connect fittings.

Copper sulfate shall be shipped in tank trucks. The tanks shall be made of suitable materials that will not be affected by the properties of the liquid. The trucks shall be in suitable condition for hauling copper sulfate and shall not contain any substances that might affect the use or usefulness of the copper sulfate in treating water.

SJRA requires that shipments be accompanied by weight certificates from a certified weigher.

Packaging and shipping of copper sulfate shall be in accordance with current federal, state and local regulations.

Because the copper sulfate will be used in the treatment of drinking water, no contamination of the product by toxic substances must occur during shipping or storage and the supplier shall ensure that the transport container is suitably clean before loading.

Any chemical spills not caused by SJRA will be properly and promptly cleaned and disposed of by the company representative delivering the product and shall be reported immediately to SJRA personnel. This includes chemical spills as well as vehicle fluids that may leak onto SJRA's property.

Prices for bulk material must be for deliveries FOB San Jacinto River Authority, Groundwater Reduction Plan (GRP)., 11998 Pine Valley Dr., Conroe, TX 77304.

SPECIFICATIONS FOR SODIUM BISULFITE

GENERAL REQUIREMENTS:

The material shall be commonly known as Sodium Bisulfite 38%.

The liquid shall be suitable for feeding by means of metering pumps or other metering devices constructed of corrosion resistant materials.

The material shall be certified as suitable for contact with or treatment of drinking water by an accredited certification organization in accordance to **ANSI / NSF Std. 60, Drinking Water Chemicals – Health Effects**.

The material shall comply with the requirements of the **Safe Drinking Water Act** and other Federal regulations for potable water, wastewater, or reclaimed water as applicable

IMPURITIES:

Sodium bisulfite shall contain no soluble material or organic substances in quantities capable of producing deleterious or injurious effects on the health of those consuming water that has been treated properly with the product.

CERTIFICATIONS:

Copies of certified laboratory analysis shall be provided with each order of sodium bisulfite. Laboratory analysis shall show percent sodium bisulfite content, pH, specific gravity as well as the amount of trace impurities tested by the manufacturer.

A current copy of the ANSI / NSF Standard 60 certificate shall be included in the bid packet for the product described. Additionally, each bill of lading shall bear the NSF stamp.

SAMPLES:

A sample of the product shall be provided to SJRA staff prior to unloading the shipment upon request. Once verbal approval is obtained, the driver may unload the product.

QUANTITY:

Please refer to the quantity summary sheet included as part of the bid documents for estimated quantities.

The quantity specified is only an estimated amount. SJRA makes no guarantee that the entire amount will be purchased. No additional compensation will be made to the supplier for any estimated quantity that is not purchased under this contract.

TRAINING:

The vendor shall conduct training classes in the handling and safety of sodium bisulfite at the plant site, at the request of Facility Management. The training shall meet all of the requirements of the Hazard Communications Act.

DELIVERY:

Product deliveries shall occur between the hours of 8:00am and 5:00pm CST.

SJRA does not have an air compressor system to aid in unloading chemical tanker trucks. Suppliers will be required to bring their own as needed.

Product shall be unloaded using standard 2" quick connect fittings.

Packaging and shipping of sodium bisulfite shall be in accordance with current federal, state and local regulations.

Because the sodium bisulfite will be used in the treatment of drinking water, no contamination of the product by toxic substances must occur during shipping or storage and the supplier shall ensure that the transport container is suitably clean before loading.

Sodium bisulfite shall be shipped in bulk (truckload) quantities.

Any chemical spills not caused by SJRA will be properly and promptly cleaned and disposed of by the company representative delivering the product and shall be reported immediately to SJRA personnel. This includes chemical spills as well as vehicle fluids that may leak onto SJRA's property.

Prices for bulk material must be for deliveries FOB San Jacinto River Authority, Groundwater Reduction Plan (GRP)., 11998 Pine Valley Dr., Conroe, TX 77304.

SPECIFICATIONS
LIQUID SODIUM HYDROXIDE

GENERAL REQUIREMENTS:

The material shall be commonly known as sodium hydroxide or caustic soda (NaOH) 25%.

The liquid shall be suitable for feeding by means of metering pumps or other metering devices constructed of corrosion resistant materials.

The material shall be certified as suitable for contact with or treatment of drinking water by an accredited certification organization in accordance to **ANSI / NSF Std. 60, Drinking Water Chemicals – Health Effects**.

The material shall be in compliance with **AWWA Standard B501-19 (Sodium Hydroxyde (Caustic Soda))**.

The material shall comply with the requirements of the **Safe Drinking Water Act** and other Federal regulations for potable water, wastewater, or reclaimed water as applicable.

IMPURITIES:

Sodium hydroxide shall contain no soluble material or organic substances in quantities capable of producing deleterious or injurious effects on the health of those consuming water that has been treated properly with the liquid sodium hydroxide.

CERTIFICATIONS:

Copies of certified lab showing compliance with all listed specifications shall be provided with each order of product. A current copy of the ANSI / NSF Standard 60 certificate shall be included in the bid packet for the product described. Additionally, each bill of lading shall bear the NSF stamp.

METHODS OF ANALYSIS:

The method of analysis shall be in accordance with AWWA Std. B501-19.

SAMPLES:

A sample of the product shall be provided to SJRA staff prior to unloading the shipment, upon request. Once verbal approval is obtained, the driver may unload the product.

CHEMICAL/PHYSICAL CHARACTERISTICS:

Sodium hydroxide shall be in liquid form and shall have a clear to slightly hazy appearance and free of visible foreign matter and sediment.

QUANTITY:

Please refer to the quantity summary sheet included as part of the bid documents for estimated quantities.

The quantity specified is only an estimated amount. SJRA makes no guarantee that the entire amount will be purchased. No additional compensation will be made to the supplier for any estimated quantity that is not purchased under this contract.

TRAINING:

The vendor shall conduct training classes in the handling and safety of sodium hydroxide at the plant site at the request of Facility Management. Training shall meet all of the requirements of the Hazard Communications Act.

DELIVERY:

Product deliveries shall occur between the hours of 8:00am and 5:00pm CST.

SJRA does not have an air compressor system to aid in unloading chemical tanker trucks. Suppliers will be required to bring their own as needed.

Product shall be unloaded using standard 2" quick connect fittings.

Liquid sodium hydroxide shall be shipped in tank trucks to the SJRA Facility. The tanks shall be made of suitable materials that will not be affected by the properties of the liquid. The trucks shall be in suitable condition for hauling liquid sodium hydroxide and shall not contain any substances that might affect the use or usefulness of the liquid sodium hydroxide in treating water for public consumption.

SJRA requires that a weight certificate from a certified weigher accompany all shipments.

Packaging and shipping of sodium hydroxide shall be in accordance with current federal, state and local regulations.

Because the sodium hydroxide will be used in the treatment of drinking water, no contamination of the product by toxic substances must occur during shipping or storage and the supplier shall ensure that the transport container is suitably clean before loading.

Any chemical spills not caused by SJRA will be properly and promptly cleaned and disposed of by the company representative delivering the product and reported to SJRA personnel immediately.

Prices for bulk material must be for deliveries FOB San Jacinto River Authority, Groundwater Reduction Plan (GRP)., 11998 Pine Valley Dr., Conroe, TX 77304.

SPECIFICATIONS FOR
LIQUID SODIUM HYPOCHLORITE

GENERAL REQUIREMENTS:

The material shall be commonly known as sodium hypochlorite (NaOCl) 12.5%.

The liquid shall be suitable for feeding by means of metering pumps or other metering devices constructed of corrosion resistant materials.

The material shall be certified as suitable for contact with or treatment of drinking water by an accredited certification organization in accordance to **ANSI / NSF Std. 60, Drinking Water Chemicals – Health Effects**.

The material shall be in compliance with **AWWA Standard B300-18 (Hypochlorites)**.

The material shall comply with the requirements of the **Safe Drinking Water Act** and other Federal regulations for potable water, wastewater, or reclaimed water as applicable.

IMPURITIES:

Liquid sodium hypochlorite shall contain no soluble material or organic substances in quantities capable of producing deleterious or injurious effects on the health of those consuming water that has been treated properly with the hypochlorite.

CERTIFICATIONS:

Copies of certified laboratory analysis shall be provided with each order Laboratory analysis shall show the percent available chlorine in the chemical.

A current copy of the ANSI / NSF Standard 60 certificate shall be included in the bid packet for the product described.

METHODS OF ANALYSIS:

The method of analysis shall be in accordance with AWWA Std. B300-18

SAMPLES:

Upon request, a sample of the product shall be provided to SJRA staff prior to unloading the shipment. Once verbal approval is obtained, the driver may unload the product.

CHEMICAL/PHYSICAL CHARACTERISTICS:

Liquid sodium hypochlorite shall be a clear, yellowish liquid containing less than 0.15 percent insoluble matter by weight.

The total free alkali (expressed as NaOH) in liquid sodium hypochlorite shall not exceed 1.5% by weight.

The solution shall contain at least 12.5% to 14% available chlorine by weight.

QUANTITY:

Please refer to the quantity summary sheet included as part of the bid documents for estimated quantities.

The quantity specified is only an estimated amount. SJRA makes no guarantee that the entire amount will be purchased. No additional compensation will be made to the supplier for any estimated quantity that is not purchased under this contract.

TRAINING:

The vendor shall conduct training classes in the handling and safety of sodium hypochlorite at the plant site, at the request of Facility Management. The training shall meet all of the requirements of the Hazard Communications Act.

DELIVERY:

Product deliveries shall occur between the hours of 8:00am and 5:00pm CST.

SJRA does not have an air compressor system to aid in unloading chemical tanker trucks. Suppliers will be required to bring their own as needed.

Product shall be unloaded using standard 2" quick connect fittings.

Sodium hypochlorite shall be shipped in tank trucks. The tanks shall be rubber-lined or made any other suitable material that will not be affected by the properties of the liquid. Tank trucks shall be in suitable condition for hauling sodium hypochlorite and shall not contain any substances that might affect the use of usefulness of the sodium hypochlorite in treating water.

SJRA requires that shipments be accompanied by weight certificates from a certified weigher.

Packaging and shipping of Sodium hypochlorite shall be in accordance with current federal, state and local regulations.

Because the sodium hypochlorite will be used in the treatment of drinking water, no contamination of the must occur during shipping or storage and the supplier shall ensure that the transport container is suitably clean before loading.

Any chemical spills not caused by SJRA will be properly and promptly cleaned and disposed of by the company representative delivering the product and shall be reported

immediately to SJRA personnel. This includes chemical spills as well as vehicle fluids that may leak onto SJRA's property.

Prices for bulk material must be for deliveries FOB San Jacinto River Authority, Groundwater Reduction Plan (GRP)., 11998 Pine Valley Dr., Conroe, TX 77304.

SPECIFICATIONS FOR
SODIUM PERMANGANATE

GENERAL REQUIREMENTS:

The material shall be commonly known as sodium permanganate 20%.

The liquid shall be suitable for feeding by means of metering pumps or other metering devices constructed of corrosion resistant materials.

The material shall be certified as suitable for contact with or treatment of drinking water by an accredited certification organization in accordance to **ANSI / NSF Std. 60, Drinking Water Chemicals – Health Effects**.

The material shall be in compliance with **AWWA Standard B603-16 (Permanganates)**.

The material shall comply with the requirements of the **Safe Drinking Water Act** and other Federal regulations for potable water, wastewater, or reclaimed water as applicable.

IMPURITIES:

Sodium permanganate shall contain no soluble material or organic substances in quantities capable of producing deleterious or injurious effects on the health of those consuming water that has been properly treated with the chemical.

CERTIFICATIONS:

Copies of certified laboratory analysis shall be provided with each order including the parameters tested for by the manufacturer.

A current copy of the ANSI / NSF Standard 60 certificate shall be included in the bid packet for the product described. Additionally, each bill of lading shall bear the NSF stamp.

METHODS OF ANALYSIS:

The method of analysis shall be in accordance with AWWA Std. B603-16.

SAMPLES:

A sample of the product shall be provided to SJRA staff prior to unloading the shipment, upon request. Once verbal approval is obtained, the driver may unload the product.

CHEMICAL/PHYSICAL CHARACTERISTICS:

Sodium permanganate shall be in liquid form.

The material shall exhibit the following properties:
Formula: $NaMnO_4$
pH (neat): 3.0 - 4.0
Specific Gravity @ 70°F (21°C): 1.159-1.169
Percent available permanganate: 20

QUANTITY:

Please refer to the quantity summary sheet included as part of the bid documents for estimated quantities.

The quantity specified is only an estimated amount. SJRA makes no guarantee that the entire amount will be purchased. No additional compensation will be made to the supplier for any estimated quantity that is not purchased under this contract.

TRAINING:

The vendor shall conduct training classes in the handling and safety of sodium permanganate at the plant site, at the request of Facility Management. The training shall meet all of the requirements of the Hazard Communications Act.

DELIVERY:

Product deliveries shall occur between the hours of 8:00am and 5:00pm CST.

SJRA does not have an air compressor system to aid in unloading chemical tanker trucks. Suppliers will be required to bring their own as needed.

Product shall be unloaded using standard 2" quick connect fittings.

Sodium permanganate shall be shipped in tank trucks. The tanks shall be rubber-lined, or made any other suitable material that will not be affected by the properties of the liquid. The trucks shall be in suitable condition for hauling sodium permanganate and shall not contain any substances that might affect the use or usefulness of the sodium permanganate in treating water.

SJRA requires that shipments be accompanied by weight certificates from a certified weigher.

Packaging and shipping of sodium permanganate shall be in accordance with current federal, state and local regulations.

Because the sodium permanganate will be used in the treatment of drinking water, no contamination of the product by toxic substances must occur during shipping or storage

and the supplier shall ensure that the transport container is suitably clean before loading.

Any chemical spills not caused by SJRA will be properly and promptly cleaned and disposed of by the company representative delivering the product and shall be reported immediately to SJRA personnel. This includes chemical spills as well as vehicle fluids that may leak onto SJRA's property.

Prices for bulk material must be for deliveries FOB San Jacinto River Authority, Groundwater Reduction Plan (GRP)., 11998 Pine Valley Dr., Conroe, TX 77304.