Item #1

ANIONIC FLOCCULANT SPECIFICATIONS

Anionic flocculant shall be priced per pound, delivered in bulk (≈2,500 gallons per delivery), or IBC (totes – six per order), f.o.b. to the Fargo Water Treatment Plant, 435 14th Avenue South, Fargo, North Dakota, 58103.

The Fargo Water Treatment Plant owns a 2,500 gallon tank for bulk storage.

To be eligible to bid, product will have to be proven through plant trials. The bid will be awarded based on price and evaluation of data obtained from plant trials. $/pound (bid price) X pounds of polymer per dry ton of sludge (actual plant data) = $/dry ton of sludge

The following performance values will be used along with bid price to determine the bid winner:

Nalco CS71325	2.66
Hawkins AH9937	2.24
Fremont F8250	2.55
SNF Polydyne A-210 P	2.57
Aqua Pure AF 3340	2.57

Consider the following five-year historical usage summary. Usage in 2017 is anticipated to be similar, so please plan deliveries accordingly.

FIVE YEAR AVERAGE MONTHLY CHEMICAL USAGE (TONS)

January	February	March	April	May	June	July	August	September	October	November	December
3	2	2	2	3	3	3	3	3	2	2	2

Annual Total = 30

An SDS (Material) Safety Data Sheet) must accompany the bid.

Documentation of ANSI/NSF Standard 60 certification and maximum application dosage in potable water treatment must accompany the bid.

All fuel surcharges must be included as part of the bid submitted.

The City Commission reserves the right to reject any and all bids and waive any informality.

Item #2

ANHYDROUS AMMONIA (NH_3) SPECIFICATIONS

Anhydrous ammonia will be priced per pound, delivered in gas form in a bulk tank truck, f.o.b. to the Fargo Water Treatment Plant, 435 14th Avenue South, Fargo, North Dakota, 58103.

The Fargo Water Treatment Plant owns a 2,000 gallon (10,000 pound) tank for bulk storage.

The anhydrous ammonia shall be the refrigeration grade and meet the following specifications:

% Solution	99.9% minimum
Ammonia, wt%	99.9% minimum
Water, wt%	0.020 maximum
Color:	Colorless
Oil, ppm by wt:	3.0 maximum

Material shall be suitable for use in a potable water system.

Anhydrous ammonia shall conform to American Water Works Association Specification Standard B305-15.

Consider the following five-year historical usage summary. Usage in 2018 is anticipated to be similar, so please plan deliveries accordingly.

FIVE YEAR AVERAGE MONTHLY CHEMICAL USAGE (TONS)

January	February	March	April	May	June	July	August	September	October	November	December
2	2	2	2	2	2	3	4	2	2	2	2

Annual Total = 27

An SDS (Material) Safety Data Sheet) must accompany the bid.

Documentation of ANSI/NSF Standard 60 certification and maximum application dosage in potable water treatment must accompany the bid.

All fuel surcharges must be included as part of the bid submitted.

The City Commission reserves the right to reject any and all bids and waive any informality.

Item #3

POWDERED ACTIVATED CARBON SPECIFICATIONS

Powdered activated carbon shall be priced per ton, delivered in powdered form in a bulk tank truck, f.o.b. to the Fargo Water Treatment Plant, 435 14th Avenue South, Fargo, North Dakota, 58103.

The Fargo Water Treatment Plant owns two carbon slurry tanks, each capable of holding approximately 48,000 pounds of carbon.

Delivery trucks with pneumatic blowers are required to unload the chemical.

Powdered Activated Carbon shall conform to the American Water Works Specification Standard B600-16.

The powdered activated carbon furnished shall be of a grade in extensive use for the removal of taste and odor from water.

Powdered activated carbon shall have a minimum iodine number of 600 and a maximum tannin value of 300.

Consider the following five-year historical usage summary. Usage in 2018 is anticipated to be similar, so please plan deliveries accordingly.

FIVE YEAR AVERAGE MONTHLY CHEMICAL USAGE (TONS)

January	February	March	April	May	June	July	August	September	October	November	December
0	1	8	8	1	0	0	0	0	0	0	0

Annual Total = 18

An SDS (Material) Safety Data Sheet) must accompany the bid.

Documentation of ANSI/NSF Standard 60 certification and maximum application dosage in potable water treatment must accompany the bid.

All fuel surcharges must be included as part of the bid submitted.

The City Commission reserves the right to reject any and all bids and waive any informality.

Item #4

HYDROFLUOSILICIC ACID (FLUORIDE) SPECIFICATIONS

Hydrofluosilicic acid shall be priced per wet pound as product, delivered in liquid form in a bulk tank truck, f.o.b. to the Fargo Water Treatment Plant, 435 14th Avenue South, Fargo, North Dakota, 58103.

The Fargo Water Treatment Plant owns one 6,000 gallon bulk storage tank. The storage tank is located in the lower level of the water treatment plant and will be filled from an exterior fill station through a 2" fill line with a quick disconnect type coupling.

The truck shall be equipped with a pump or air compressor to unload the tanker.

Hydrofluosilicic acid shall conform to the American Water Works Specification Standard B703-11.

Hydrofluosilicic acid shall be a 24 ± 1% solution.

Consider the following five-year historical usage summary. Usage in 2018 is anticipated to be similar, so please plan deliveries accordingly.

FIVE YEAR AVERAGE MONTHLY CHEMICAL USAGE (TONS)

January	February	March	April	May	June	July	August	September	October	November	December
5	5	6	5	6	8	9	9	7	6	5	5

Annual Total = 76

An SDS (Material) Safety Data Sheet) must accompany the bid.

Documentation of ANSI/NSF Standard 60 certification and maximum application dosage in potable water treatment must accompany the bid.

All fuel surcharges must be included as part of the bid submitted.

The City Commission reserves the right to reject any and all bids and waive any informality.

Item #5

LIME (CaO) SPECIFICATIONS

Lime shall be priced per ton, delivered in dry form in a bulk tank truck, f.o.b. to the Fargo Water Treatment Plant, 435 14th Avenue South, Fargo, North Dakota, 58103.

The Fargo Water Treatment Plant owns one lime storage bin with a capacity of 301 tons. The storage bin will be filled from an exterior fill station with 4" quick disconnect type couplings.

Delivery trucks with pneumatic blowers are required to unload the chemical.

Lime shall conform to the American Water Works Specification Standard B202-13. It shall be high calcium quicklime, ¼" to ¾" in size.

Lime shall contain a minimum of 90% available calcium oxide and a maximum of 2.5% magnesium oxide.

On slaking, the lime shall produce a minimum 40-degree centigrade temperature rise in the first 30 seconds.

Consider the following five-year historical usage summary. Usage in 2018 is anticipated to be similar, so please plan deliveries accordingly.

FIVE YEAR AVERAGE MONTHLY CHEMICAL USAGE (TONS)

January	February	March	April	May	June	July	August	September	October	November	December
510	470	550	420	584	700	700	597	566	460	487	556

Annual Total=6,600

An SDS (Material) Safety Data Sheet) must accompany the bid.

Documentation of ANSI/NSF Standard 60 certification and maximum application dosage in potable water treatment must accompany the bid.

All fuel surcharges must be included as part of the bid submitted.

The City Commission reserves the right to reject any and all bids and waive any informality.

Item #6

LIQUID CARBON DIOXIDE (CO_2) SPECIFICATIONS

Carbon Dioxide shall be priced per ton, delivered in bulk, f.o.b. to the Fargo Water Treatment Plant, 435 14th Avenue South, Fargo, North Dakota, 58103.

The Fargo Water Treatment Plant owns two storage tanks, one 52 ton and one 50 ton.

Carbon dioxide shall conform to the American Water Works Specification Standard B510-12.

Consider the following five-year historical usage summary. Usage in 2018 is anticipated to be similar, so please plan deliveries accordingly.

FIVE YEAR AVERAGE MONTHLY CHEMICAL USAGE (TONS)

January	February	March	April	May	June	July	August	September	October	November	December
112	100	124	122	125	156	165	143	143	114	120	121

Annual Total=1,545

An SDS (Material) Safety Data Sheet) must accompany the bid.

Documentation of ANSI/NSF Standard 60 certification and maximum application dosage in potable water treatment must accompany the bid.

All fuel surcharges must be included as part of the bid submitted.

The City Commission reserves the right to reject any and all bids and waive any informality.

Item #7

LIQUID OXYGEN (O_2) SPECIFICATIONS

Liquid oxygen shall be priced per ton, delivered in liquid form in bulk storage trucks, f.o.b. to the Fargo Water Treatment Plant, 435 14th Avenue South, Fargo, North Dakota, 58103.

The Fargo Water Treatment Plant owns two 9,000 gallon storage tanks.

The liquid oxygen supplier shall have a production facility to support oxygen with a quality verification level of Grade D or better for Type II liquid oxygen as defined by the Compressed Gas Association, Specification CGA G-4.3, 2000 Edition.

Liquid Oxygen shall conform to the American Water Works Specification Standard B304-13.

The liquid oxygen supplier shall provide analytical test results certifying that the liquid oxygen being supplied meets the above specification with the bid. If the supplier changes source of liquid oxygen during the year, a new certification will be required.

Consider the following five-year historical usage summary. Usage in 2018 is anticipated to be similar, so please plan deliveries accordingly.

FIVE YEAR AVERAGE MONTHLY CHEMICAL USAGE (TONS)

January	February	March	April	May	June	July	August	September	October	November	December
50	55	55	55	83	125	135	115	98	75	55	55

Annual Total=956

An SDS (Material) Safety Data Sheet) must accompany the bid.

Documentation of ANSI/NSF Standard 60 certification and maximum application dosage in potable water treatment must accompany the bid.

All fuel surcharges must be included as part of the bid submitted.

The City Commission reserves the right to reject any and all bids and waive any informality.

Item #8

POLYPHOSPHATE SPECIFICATIONS

(Potable Water Stabilization)

Polyphosphate shall be priced per pound, delivered in 20,000 pound lots, packaged in 40 pound bags, f.o.b. to the Fargo Water Treatment Plant, 435 14th Avenue South, Fargo, North Dakota, 58103.

The product bid shall be equal to Carus MP4020 or Shannon No-Cor type N2, and shall meet the following specifications:

1. Pulverized free flowing granular material
2. Na_2O to P_2O_5 ration of 2.1 to 1.0 with PO_4 content of 63%
3. Density of pulverized material of 64 pounds per cubic foot
4. PH of a 1% solution =10.6

As a function of phosphate bid, bidder shall provide 4 hours of on-site technical service per month in testing for phosphate feed, dosage requirements, and phosphate reversion rate. Bidder shall submit a written report of testing results within ten days.

Consider the following five-year historical usage summary. Usage in 2018 is anticipated to be similar, so please plan deliveries accordingly.

FIVE YEAR AVERAGE MONTHLY CHEMICAL USAGE (TONS)

January	February	March	April	May	June	July	August	September	October	November	December
4	3	3	3	4	5	6	5	5	4	4	3

Annual Total =49

An SDS (Material) Safety Data Sheet) must accompany the bid.

Documentation of ANSI/NSF Standard 60 certification and maximum application dosage in potable water treatment must accompany the bid.

All fuel surcharges must be included as part of the bid submitted.

The City Commission reserves the right to reject any and all bids and waive any informality.

Item #9

SODA ASH (Na_2CO_3) SPECIFICATIONS

Soda ash shall be priced per ton, delivered in dry form in a bulk tank truck, f.o.b. to the Fargo Water Treatment Plant, 435 14th Avenue South, Fargo, North Dakota, 58103.

The Fargo Water Treatment Plant owns one soda ash storage tank with a capacity of 270 tons. The bin will be filled from an exterior fill station with 4" quick disconnect type couplings.

Delivery trucks with pneumatic blowers are required to unload the chemical.

Soda ash shall conform to the American Water Works Specification Standard B201-13.

Consider the following five-year historical usage summary. Usage in 2018 is anticipated to be similar, so please plan deliveries accordingly.

FIVE YEAR AVERAGE MONTHLY CHEMICAL USAGE (TONS)

January	February	March	April	May	June	July	August	September	October	November	December
60	52	206	155	231	356	324	232	237	156	214	205

Annual Total=2,428

An SDS (Material) Safety Data Sheet) must accompany the bid.

Documentation of ANSI/NSF Standard 60 certification and maximum application dosage in potable water treatment must accompany the bid.

All fuel surcharges must be included as part of the bid submitted.

The City Commission reserves the right to reject any and all bids and waive any informality.

Item #10

CHLORINE (CL_2) SPECIFICATIONS

Liquid chlorine shall be priced per ton, delivered in ton containers, f.o.b. to the Fargo Water Treatment Plant, 435 14th Avenue South, Fargo, North Dakota, 58103 and the Fargo Wastewater Treatment Plant, 3400 North Broadway, Fargo, North Dakota, 58102.

Liquid chlorine shall conform to the American Water Works Specification Standard B301-10.

Consider the following five-year historical usage summary. Usage in 2018 is anticipated to be similar, so please plan deliveries accordingly.

Water Treatment Plant

FIVE YEAR AVERAGE MONTHLY CHEMICAL USAGE (TONS)

January	February	March	April	May	June	July	August	September	October	November	December
8	8	9	9	11	14	16	14	13	9	8	8

Annual Total =127

Wastewater Treatment Plant

FIVE YEAR AVERAGE MONTHLY CHEMICAL USAGE (TONS)

January	February	March	April	May	June	July	August	September	October	November	December
0.0	0.0	0.0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	0.0	0.0

Annual Total =31.5

An SDS (Material) Safety Data Sheet) must accompany the bid.

Documentation of ANSI/NSF Standard 60 certification and maximum application dosage in potable water treatment must accompany the bid.

All fuel surcharges must be included as part of the bid submitted.

The City Commission reserves the right to reject any and all bids and waive any informality.

Items #11 & 12

FERROUS CHLORIDE SPECIFICATIONS

Ferrous Chloride ($FeCl_2$) shall be priced per pound of iron (Fe^+) in solution for bulk deliveries and per pound of product for mini tote deliveries. It shall be delivered in bulk F.O.B. to the Chemical Injection Station at 25th Street and 30th Avenue South, Fargo, ND and Lift Station 60 at 3083 43rd Street South, Fargo, ND, and in tote deliveries to Lift Station 57 at US Highway 81 & 112 Avenue S-Oxbow.

Please provide two prices, one for bulk tanker deliveries and one for tote deliveries.

Ferrous Chloride shall conform to the applicable American Water Works Association Standard B4707-88 for Ferris Chloride except at amended below:

Ferrous Chloride	23% to 30%
Percent Iron	10% to 13%
Free Acid	1.0% to 2.0%
Water Insolubles	Less than 0.03%

All fuel surcharges must be included as part of the bid provided.

A Safety Data Sheet must accompany this bid.

The City Commission reserves the right to reject any or all bids and to waive any informality.

Item #13

SODIUM HYPOCHLORITE SPECIFICATIONS

Sodium Hypochlorite shall be priced per gall of 12% solution. It shall be delivered in 1,500 to 2,000 gallon loads, FOB to the Wastewater Treatment Facility at 3400 North Broadway, Fargo, ND 58102.

Sodium Hypochlorite shall conform to American Water Works Association Standard B300-87.+

All fuel surcharges must be included as part of the bid provided.

A Safety Data Sheet must accompany this bid.

The City Commission reserves the right to reject any or all bids and to waive any informality.

Item #14

SULFUR DIOXIDE SPECIFICATIONS

Sulfur Dioxide shall be priced per ton, delivered in ton containers f.o.b Wastewater Treatment Plant, Fargo, ND, 58102.

All fuel surcharges must be included as part of the bid submitted.

A Safety Data Sheet must accompany this bid.

The City Commission reserves the right to reject any and all bids and waive any informality.

Item #15

CATIONIC FLOCCULANT SPECIFICATIONS

Cationic Flocculent shall be priced per pound, delivered in totes, f.o.b. Wastewater Treatment Plant, Fargo, ND 58102.

The Flocculant bid shall be equal to that of Polydyne Clarifloc CE-1300. The flocculant bid will have to be proven equal as demonstrated during actual operation of the belt filter press before closing of bid date. There will be no cost charged to the City during testing of the alternate flocculant. The product being tested must meet or exceed the Polydyne CE-1300 performance and be shown to be equal to or more economical to use based on cost of quantity used to achieve satisfactory results.

Bid will be awarded based on the price and evaluation of data obtained from plant trials.

All fuel surcharges must be included as part of the bid submitted.

Safety Data Sheets must accompany this bid.

The City Commission reserves the right to reject any or all bids and to waive any informality.

Items #16-22

Effluent Reuse Facility Chemicals

The following chemicals are for use at the Effluent Reuse Facility (ERF) located at the Fargo Wastewater Treatment Facility.

Azone 15/Sodium Hypochlorite (12%):

Shall be priced per gallon, and shall be delivered in totes (3 totes) every two weeks, and pumped into bulk container by the distributor.

Pretreatment Plus Antiscalant:

Shall be priced per gallon and be delivered in six (6), 55 gallon drums per month, pumped into a tote at the ERF building by the distributor. King Lee Plus 100 is also required.

Caustic Soda (30%):

Shall be priced per gallon. One 330 gallon tote is required per month and must be pumped into bulk container at the ERF building by the distributor.

Ferric Chloride (35%):

Shall be priced per pound of product. Four, 55 gallon drums are required to be delivered every month. Drums will be placed on scale by distributor.

Ammonium Hydroxide (19%):

Shall be priced per pound of product. One tote shall be delivered every four months and shall be pumped into bulk container by distributor.

Sulfuric Acid (40%):

Shall be priced per pound of product. One tote shall be delivered every six months and shall be pumped into bulk container by the distributor.

Citric Acid (50%):

Shall be priced per pound of product. Four (4) 55 gallon drums shall be supplied every month and shall be pumped into tote by distributor.

All fuel surcharges must be included as part of the bid submitted.

Safety Data Sheets must accompany this bid.

The City Commission reserves the right to reject any or all bids and to waive any informality.

Items #23 & 24

ODOR CONTROL MEDIA SPECIFICATIONS

The media will be of two types, hydrogen sulfide removal media and broad spectrum removal media, and will serve to replace spent media located in scrubbers manufactured by Purafil.

Odor control media shall be priced per cubic foot of media, delivered in bulk, f.o.b. to the following locations:

1. Fargo Wastewater Treatment Plant, 3400 North Broadway, Fargo, North Dakota, 58102.
2. Lift Station 61, 3598 40th Ave North, Fargo, ND 58102.
3. Lift Station 60, 3083 43 St South, Fargo ND 58103.
4. Lift Station 25, Intersection of 36th Street South and 32nd Ave South.
5. Lift Station 19, Intersection of 25th Street South and 17th Ave South.

Bid price will be based upon a minimum annual quantity of 250 cubic feet of hydrogen sulfide removal media and 50 cubic feet of broad spectrum removal media.

Hydrogen Sulfide Removal Media Parameters:

Moisture Content of 35% max.

Crush Strength 35-70%

Abrasion: 4.5% Max

Pellet Diameter: 1/16-1/4 inch

Bulk Density: 26 lb/ft^3

H2S Removal Capacity: 0.30 g/cc minimum

Process Temperature Range: -4 – 125 F

Humidity: 10 – 95 %RH

Broad Spectrum Gas Removing Media Parameters:

The broad spectrum gas removing media shall be an equal mixture (by volume) of sodium or potassium permanganate impregnated media and activated carbon media.

Spent media must be capable of being disposed of in a normal domestic landfill and must not qualify as a hazardous waste.

Moisture Content of 35% max.

Crush Strength of 35-70%

Abrasion: 4.5%

Pellet Diameter: 1/16 – 1/8 inch

Bulk Density: 50 lb/ft^3

Permanganate Content: 12% Minimum.

Process Temperature Range: -4 – 125 F

Humidity: 10 – 95% RH

Upon delivery, the Owner will retain 16 oz samples of H2S Removal Media in air-tight containers. The Owner will store the samples in the controlled environment of the Fargo Wastewater Lab. At the Owner's discretion, at any time throughout the year, the Owner may analyze the media for H2S capacity in accordance with ASTM D6646. If the media fails to meet the specified H2S capacity per this specification, the media manufacturer will supply a replacement media which meets the required H2S capacity at no additional cost to the Owner.

Acceptable Media Manufacturers:

1. Purafil, Inc. of Doraville, Georgia, USA
2. Pure Air Filtration, Inc. of Atlanta, Georgia, USA

Product Delivery, Installation and Handling:

All packing slips and shipments must be inspected upon delivery to ensure shipments are complete and no damage has occurred during transportation. In the case of an incomplete shipment or damage has occurred the Manufacturer will be contacted by the Owner.

The Owner will install the media according to the Manufacturer's instructions.

The Owner will dispose of all spent media.

All fuel surcharges must be included in the bid submitted.

A Safety Data Sheet must accompany the bid.

The City Commission reserves the right to reject any and all bids and waive any informality.

Items #25

CALCIUM NITRATE SPECIFICATIONS

Calcium nitrate deliveries. Price based on per gallon of product deliveries. Calcium Nitrate shall be delivered in bulk F.O.B. to the Chemical Injection Station at 25th Street and 30th Avenue South, Fargo, ND and Lift Station 60 at 3083 43rd Street South, Fargo, ND, Lift Station 59 in north Fargo. Calcium Nitrate shall be delivered in tote deliveries to Lift Station 57 at US Highway 81 & 112 Avenue S-Oxbow, and Lift Station 64 at the Harwood, ND.Lift Station.

Please provide two prices, one for bulk tanker deliveries and one for tote deliveries.

Calcium Nitrate product shall be:

Calcium Nitrate Tetrahydrate 68 %

All fuel surcharges must be included as part of the bid provided.

A Safety Data Sheet must accompany this bid.

The City Commission reserves the right to reject any or all bids and to waive any informality.

Item #26

NON-SELECTIVE HERBICIDE SPECIFICATIONS

Glyphosate type non-selective herbicide shall be priced per gallon of 18% solution. Shall be delivered in 2.5 to 5.0 gallon containers, FOB to the Wastewater Treatment Facility at 3400 North Broadway, Fargo, ND 58102.

- Must be EPA approved for land and water use.
- Must kill all plants.
- Must be able to kill plants emerging from water surface.
- Approximately 150 gallons needed.

All fuel surcharges must be included as part of the bid provided.

A Safety Data Sheet must accompany this bid.

The City Commission reserves the right to reject any or all bids and to waive any informality.

Item #27

SELECTIVE BROAD-LEAF HERBICIDE SPECIFICATIONS

Selective herbicide shall be priced per gallon of approximately 20% solution. Shall be delivered in 2.5 to 5.0 gallon containers, FOB to the Fargo Water Treatment Plant, 435 14th Avenue South, Fargo, North Dakota, 58103 and the Wastewater Treatment Facility at 3400 North Broadway, Fargo, ND 58102.

- Must be capable of killing a wide variety of broadleaf weeds.
- Must be capable of killing woody brush, poison oak, poison ivy, sumac and honeysuckle.
- Must have surfactants already added.
- Must be safe on all grasses.
- Approximately 100 gallons needed for Wastewater Treatment Plant
- Approximately 50 gallons needed for Water Treatment Plant

All fuel surcharges must be included as part of the bid provided.

A Safety Data Sheet must accompany this bid.

The City Commission reserves the right to reject any or all bids and to waive any informality.