




Douglas County, Colorado

Staff Report

www.douglas.co.us

Janet Herman, P.E. 
8/5/2025

File #: 3830**Agenda Date:** 8/26/2025**Agenda #:**

Daniel Roberts, Assistant Director, Operations

8/5/2025

Purchase of Six Magnesium Chloride Tanks in the Amount of \$404,740.00.

Douglas County Public Works Operations received three quotes for the Purchase of six Magnesium Chloride Tanks for our Parker Facility. The six that have been at the Parker Facility have been in place for approximately 13 years.

These tanks were steel tanks and have become corroded over the years with rust. Currently, 2 of the tanks have been taken out of service and a third tanks appears to be leaking. The tanks are at the end of their useful life and will be replaced with fiberglass tanks that will not corrode from the magnesium chloride.

The three quotes were as follows:

E.T. Technologies

E.T. Technologies provided a quote for \$404,740.00. This includes the six fiberglass tanks to include placement of new tanks, pipe construction Rebuilding of VFD, with a 2nd pump to distribution system.

SPATCO

SPATCO provided a quote for one unit at but extending pricing for six is \$489,330.

Envirotech Services

Envirotech Services provided an incomplete quote.

The Board of County Commissioners authorize Public Works Operations to purchase six liquid magnesium chloride tanks to be installed at our Parker Facility, 9040 Tammy Lane from E.T. Technologies.

Purchase order in the amount of \$404,740.00 to be issued to E.T. Technologies.

**MEMORANDUM**

DATE: July 31st, 2025
TO: Janet Herman, P.E., Director of Public Works
FROM: Shawna Potter, Operations and Finance Specialist
SUBJECT: **Approval of Purchase of Liquid Magnesium Chloride Tanks**
ATTACH: Quote

Action Item #1:

Attached for your review and approval is a quote to ET Technologies for the purchase of 6 Liquid Magnesium Chloride Tanks.

Funding

Funding for this project and this amendment is set aside from **Fund 200. BU 31400.474800.**

Background Information:

This tank farm contains 6 steel tanks, approximately 13 years old. It supports snow removal efforts in the northern, more urbanized part of the County. Currently, 2 of the tanks have been taken out of service and a third tank appears to be leaking. The tanks are at the end of their useful life and will be replaced with fiberglass tanks that will not corrode from the mag chloride. Funding includes replacement of all six tanks as well as associated plumbing and controls.

Attorney Review:

Does not require Attorney Review

Recommendation: Approve Amendment 1:

If you approve of the above recommendations, please sign below.

DocuSigned by:

Janet Herman

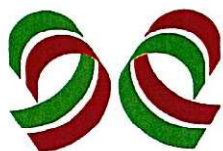
8/5/2025

N/A

Janet Herman, P.E. Director of Public Works

Doug DeBord, County Manager

Upon completion of your review, please return the signed documents to **Ashley Pennick** to complete the next steps required to move this request forward. If you have any questions or require additional information, please contact **Shawna Potter** at **303-660-6274** or email at spotter@douglas.co.us.



Douglas County Government
 Finance Department, Purchasing Division
 100 Third Street, Suite 130
 Castle Rock, Colorado 80104
 Phone: 303-660-7430

Date Requested: 08/01/25
Department Number: 31400
Department Name: Public Works Ops
Requested By: Shawna Potter
Telephone Number: 6274
Delivery Address:

Account Number: 31400.474800

Vendor

ET Technologies
 10000 S Dransfeldt Rd
 Parker CO 80134
 303-680-9414

Department Authorization

I certify that the purchase listed below is necessary for the proper operation of Douglas County and to my knowledge funds are available in the current budget.

DocuSigned by:

Janet Herman 8/5/2025

80C085BDD8E87489
 Authorized Department Official

Qty.	Unit	Description/Specifications (please include detailed information regarding this purchase, i.e., bid number, quotes attached, etc.)	Unit Price	Amount
6	ea	Stainless Steel Tanks with High Density Polyethylene for Liquid Magnesium Chloride storage for winter operations		\$404,740.00
Special Instructions:			Total Price	\$404,740.00

The six tanks were approved through the budget process for 2025

**** PLEASE ATTACH A COPY OF THE AGENDA ITEM FOR ALL BOCC APPROVED PURCHASES ****

FOR PURCHASING USE ONLY

Purchase Order No.: _____
Vendor Number: _____
Date Entered: _____
Entered By: _____

Accounting Review: _____
Budget Review: _____
Cty Manager Approval: _____
BOCC Approval: _____
BOCC Approval: _____



E.T. Technologies, Inc.
environmental services

10000 S. Dransfeldt Road, Suite 100, Parker, CO 80134 • Tel: (303) 680-9414

July 23, 2025

John Lamb
Douglas County Public Works
Sent via email to: jlamb@douglas.co.us

RE: Procurement and installation of magnesium chloride tanks and distribution system
Location - 4054 Tammy Lane, Parker, CO 80134
ETT Proposal No. 1038291154

John:

E.T. Technologies, Inc. is pleased to present this proposal to you for the procurement and installation of six (6) engineer-certified fiberglass tanks (20,300-gallon capacity each) that will be utilized to store and distribute magnesium chloride. The base bid includes reconnection of the existing HDPE piping and one distribution pump to the new tanks, in order to make the system operational. The reconnection of the piping includes adding a product recirculation system (piping and valves along the backside of the tanks) and flow meters. The new piping installed will be PVC Schedule 80.

As part of this proposal, ETT evaluated different piping materials. Here is a summary of the materials and the reason(s), ETT chose Schedule 80 PVC:

Piping options/materials:

- 1) Polypropylene
 - a. Light-pressure pipe
 - b. Light-weight fittings
 - c. New material in the industry for MgCl systems
 - d. Up to 3-inches in size (size limitations)
 - e. Too small for use in the Douglas County system (4-inch)
 - f. Duration and longevity are not ideal because of the light duty nature of the material.
 - g. Relatively new for these systems – not a lot of industry feedback or information regarding performance/long-term reliability
 - h. ETT did not quote this material. The material is too light weight for this industrial application. ETT is concerned with routine breakage of the lines and loss of functionality of the system due to the breakage/downtime.
- 2) Stainless Steel
 - a. Most expensive – material and labor costs (installation)
 - b. Best longevity
 - c. 4-inch diameter piping available
 - d. Duration/longevity – great. The corrosiveness of the MgCl will still break this down over time.
 - e. Industry feedback and reliability – good
 - f. Price point – very expensive (price per LF)
 - g. ETT did not provide a quote for this material. Although it is good material, the price point is too high for this application and project budget.
- 3) High-Density Polyethylene (HDPE)
 - a. Good, durable product
 - b. One manufacturer not compatible with another (due to resins and plastics used in making the pipe – these materials may not mesh when fused), causing a failure in the system at the fittings/fuse points.
 - c. Could not identify the existing manufacturer – would have to price all new piping and fittings for the rebuild.

Procurement and installation of magnesium chloride tanks and distribution system
Location - 4054 Tammy Lane, Parker, CO 80134
ETT Proposal No. 1038291154

- d. Flexible – does not stand up well on pipe racks with standard spacing.
 - e. Long lead time on fittings – not ideal when trying to make a repair – may cause lengthy delays with the repairs.
 - f. Fusion welding machine needed for repairs (not always readily available, and very expensive to purchase, typically these are rented units).
 - g. ETT did not bid this piping due to the long lead times of the parts (fittings), the need and availability of a fusion welding machine, and the unknown manufacturer of the existing system (compatibility of parts).
- 4) Polyvinyl chloride (PVC) – Schedule 40
- a. Good product
 - b. Degrades in sunlight.
 - c. More prone to breaking in colder temperatures.
 - d. Easy to repair (can cut and replace in small sections) – parts readily available.
 - e. Repairs can be made without special equipment.
 - f. Fittings – glue, and flanged.
 - g. ETT did not choose this option because of the thinner nature of the pipe (worried about breakage in colder weather – when the system needs to be fully operational).
- 5) PVC – Schedule 80
- a. Stronger pipe addresses cold weather breakage.
 - b. Uses cast iron and flanged fittings.
 - c. ETT priced this piping in all option(s). To address the UV degradation, all piping and fittings will be painted/coated.

ETT reviewed the existing system and prepared a sketch showing the piping layout (attached). The quantities and materials quoted within this proposal are calculated from this sketch.

In addition to the base bid, ETT quoted the following option(s), per your request:

Option 1 – Non-engineered tanks. These are non-certified tanks that will be purchased in lieu of the certified ones priced in the base bid. These are less expensive than the certified.

Option 2 – Replace existing piping on the system with PVC Schedule 80, reuse valves and cast-iron fittings (as possible). The reason to replace all of the piping is 1) adding the recirculation piping will cause the system to be wavy (not a straight line) to accommodate the new fittings and tank connections. 2) An inspection of the existing piping, valves and fittings will be performed at the time of reconnection. Should it be determined that parts need to be replaced (valves or fittings on the existing system), final connection of the piping could be delayed up to 6 weeks waiting on the parts. Should it be determined new parts are needed, ETT will bill these repairs at cost plus, additional from this option or the base bid pricing. This also includes adding additional pipe support for the HDPE system.

Option 3 – Add a bypass system.

For this option, ETT will install a bypass system that allows filling of trucks utilizing the recirculation piping system. Should an issue arise with the main distribution system, downtime will be eliminated with the new bypass piping.

Option 4 – Add a 2nd distribution pump.

This option involves procurement and installation of a 2nd pump that will be added to the distribution system which will allow the County to load trucks at two locations within the system. Currently, there is only capacity to load one truck at a time. This option also adds a new pump cabinet, flow meter, and some additional piping to make the necessary connections.

Procurement and installation of magnesium chloride tanks and distribution system
 Location - 4054 Tammy Lane, Parker, CO 80134
 ETT Proposal No. 1038291154

SCHEDULE

ETT can perform this work in approximately two and a half weeks (approximately 13 business days), starting with the delivery of the new tanks. Lead time, from the approval of the shop drawing, on the new tanks is approximately 10 weeks. The additional time required for each option is as follows:

- Option 1 – no additional time (material change only).
- Option 2 – Add an additional week (approximately 5 business days) to the schedule for replacement and rebuild of the distribution system piping.
- Option 3 – Add an additional day.
- Option 4 – Add an additional three days. ETT anticipates approximately 5 weeks from the placement of the order to delivery of the new pump and electrical equipment.

PRICING

ETT estimates the following pricing for the above documented scope of work:

Task	Extended Price
Procurement and Placement of New Tanks	\$257,410.00
Pipe construction	\$47,450.00
Rebuilding of VFD	\$15,680.00
Total – Base Project	\$320,540.00

Optional Pricing	Extended Price
Option 1 – Non-engineered tanks (credit from base bid)	(\$40,625.00)
Option 2 – Replace existing piping on distribution system	\$21,655.00
Option 3 – Add bypass piping	\$4,570.00
Option 4 – Add 2 nd pump to distribution system	\$57,400.00

ASSUMPTIONS

- The scope of work is as detailed in this proposal. ETT has excluded any item not discussed within.
- Access will be granted to the property during normal business hours (M-F, 7:30a – 4:30p)
- ETT will have the use of space on both sides of the tank basin, including the asphalt outside of each basin to safely complete the construction.
- ETT will be able to stage equipment, materials, and other pertinent job items in this space.
- The site is secured after hours.
- ETT has the necessary insurance requirements to complete the above scope.
- No concrete or surface material needs to be removed/replaced.
- Permits, if required, will be paid directly by the client. ETT did not provide permit costs within this proposal. ETT reached out to Douglas County and the Town of Parker but did not receive confirmation on these fees.

EXCLUSIONS

- Bonding
- Prevailing wages
- Engineered plans.
- Additional mobilization(s). ETT included one mobilization in this proposal.

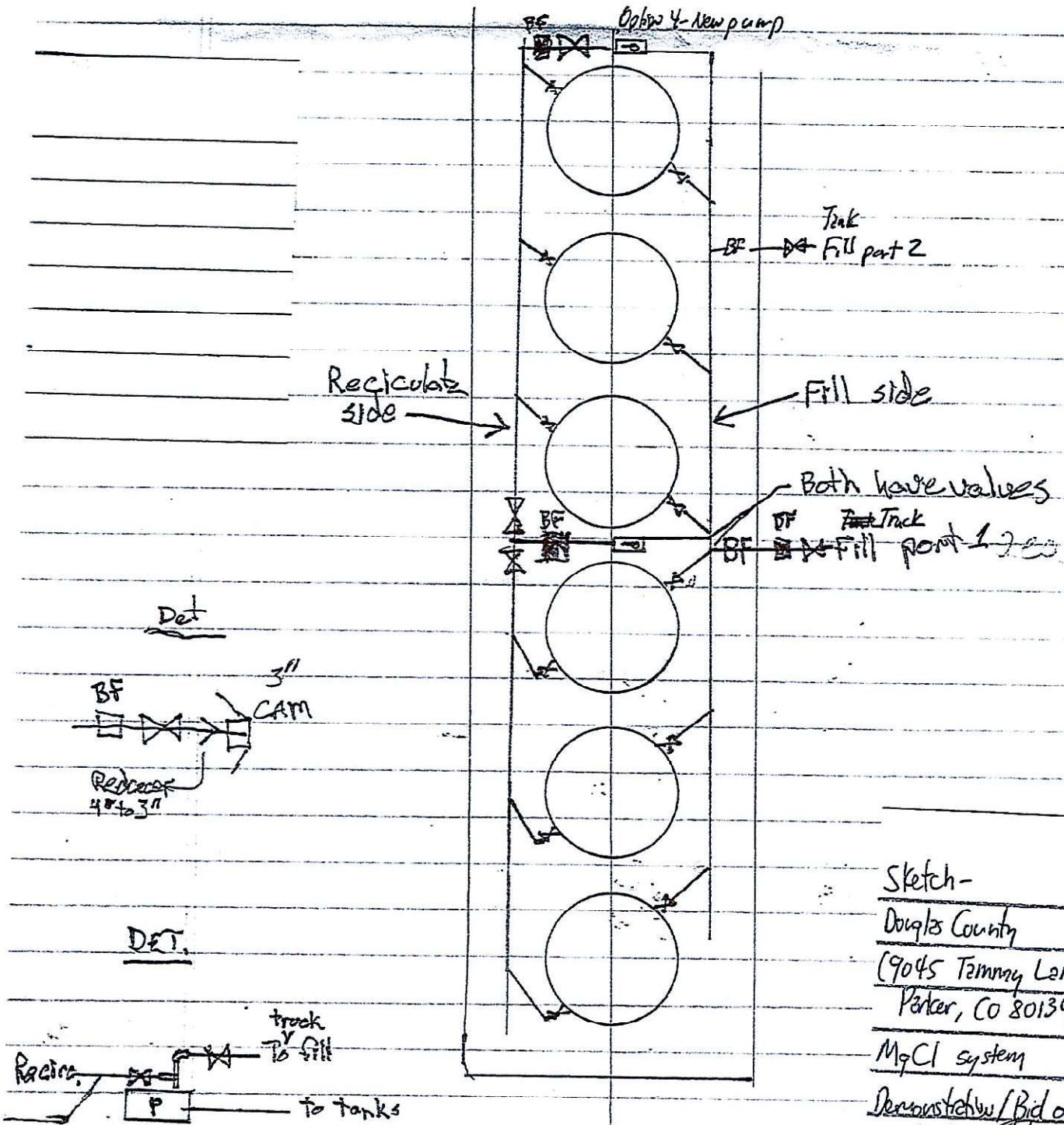
Procurement and installation of magnesium chloride tanks and distribution system
Location - 4054 Tammy Lane, Parker, CO 80134
ETT Proposal No. 1038291154

ETT will begin work upon your approval of this proposal. Please reach out to me at (720) 684-9936 with any questions or if you need additional information.

Sincerely,
E.T. Technologies, Inc.



Jeffrey S. Roehrig, PMP
President



Sketch-

Douglas County

(9045 Tammy Lane
Parker, CO 80134)

M9CI system

Demonstration / Bid only

7/23/25



June 10, 2025

SPATCO Energy Solutions - Sourcewell Contract #081524-TAN

Mr. Adrian Orzescu
City of Parker
9045 Tammy Lane
Parker, CO 80134

New 21,000 Gal Magnesium Chloride Vertical Tank with Removal & Installation Services Sourcewell Proposal

Thank you for your interest in SPATCO Energy Solutions. We are pleased to offer you the following Sourcewell proposal for a 21,000 Gal UL-142 Magnesium Chloride Vertical Tank with Removal and Installation Services for your facility located at 9045 Tammy Lane, Parker, CO 80134. We pride ourselves in engineering systems with the highest quality features that are designed for operations such as yours. This is presented utilizing our Sourcewell Contract #081524-TAN.

21,000 Gal UL-142 Vertical Tank for Magnesium Chloride - \$72,683.00

- 21,000 Gal UL-142 Vertical Steel Tank for Magnesium Chloride
- Includes 24" manway, 6 tank anchors & lifting lugs.
- Tank to be blasted and painted tan.
- Anchors included.
- (2) 2" Stainless Steel valves, (5) 4" Vents, (2) Shut Off Valves & 2" Hose
- Includes Freight to Parker, CO

Removal & Installation Services - \$53,232.00

Partnering with Eaton Sales & Service, we will provide labor & materials to perform the following scope of work:

- Provide labor to disconnect existing tank from the tank farm.
- Perform Closure per state regulations.
- Haul off and dispose of the tank.
- Provide equipment to deliver and place new tank onto existing concrete pad.
- Anchor new tank.
- Install tank top equipment, connect new tank to existing tank farm.
- Perform pressure testing after installation.

OPTION: New Poly Tank for Magnesium Chloride - Approximately \$30,500 Additional

- Option for Installation of New Poly Tank will be additional cost more than quoted for equipment only
- There will likely be additional costs for extra piping due to the size difference.
- *Performing Installation of two tanks at the same time would present significant cost savings due to mobilization and equipment rental costs.
- Pricing not included in Proposal Summary.

Notes & Exclusions:

- State, County and City Permits and Engineered drawings are not included and are the responsibility of the owner.
- On-site painting excluded.
- Replacement of any existing piping excluded.
- Any additional unforeseen costs that may be required, customer will be advised before proceeding.
- Additional costs will apply for any required work and/or repair not described or included in the scope of work above.
- Magnesium Chloride product to be provided by the owner.



SOURCEWELL PRICING SUMMARY:

Sourcewell Part Number	Description	QTY	Price Each	Extended Price
EZ-OPENMARKET	21,000 Gal UL-142 Vertical Tank for Magnesium Chloride	1	\$72,683.00	\$72,683.00
EZ-HRS	Labor & Material for Installation & Removal Services	1	\$53,232.00	\$53,232.00
SOURCEWELL TOTAL:				\$125,915.00

Standard SPATCO and Sourcewell Terms & Conditions apply. A 25% deposit is required. Pricing is valid for 30 days. All pricing does not include any applicable sales tax. Any applicable sales tax will be added to the final invoice.

SPATCO Energy Solutions

City of Parker

Printed Name

Printed Name

Signature

Signature

Title **Date**

Title **Date**

3040 White Horse Road, Greenville, SC 29611 (770) 688-1958 www.spatco.com www.blue1energyequipment.com



910 54th Avenue, Suite 230

Greeley, CO 80634

Phone: 970-346-3900

Fax: 970-314-9050

www.envirotechservices.com

Thursday, March 27, 2025

Dear Recipient,

EnviroTech Service, LLC (ETS) is pleased to submit this proposal to upgrade and improve the Douglas County magnesium chloride brine storage facility at the Public Works Operations Center. ETS looks forward to discussing these systems and the benefits they provide.

EST Proposal – Baseline *

- Six (6) Fiberglass Above Ground Storage Tanks
- AST Material of Construction: Fiberglass
 - Compatible with Storing Magnesium Chloride, or Calcium Chloride at Ambient Temperature
 - Designed for Atmospheric Pressure / Vacuum
- Configuration: Flat Bottom, Dome Top
- Diameter: 12'
- Height: 24'
- Design Specific Gravity: 1.4 g/mL
- Capacity: 20,300 Gallons
- Vent Type: 4.0" J-Vent
- Manway: Low Pressure
- Anchor System: Anchor Lugs (4X)
- Couplings – 1.0": Two - Site Tube
- Couplings – 3.0": One - Dome Radar Sensor Mount
- Couplings – 4.0": One - Vent
- Flanges – 4.0": Two - ANSI 150
- Tank Volume Scale: Gallon Tape at Site-Tube Location
- Color: BLM Carlsbad Canyon (Options Available)
- Delivered to Douglas County Facility. (Owner to coordinate & pay for tank unloading from delivery trailer.)
- Sales Tax: Not included in Pricing
- Lead-Time: 8-Weeks (Due to ETS' relationship with manufacturer, expedited delivery is possible.)

Six Tanks - Delivered: \$145,890.00

Six Tanks – Delivered, Anchored, Plumbed to Existing 4.0" HDPE Piping: \$150,690.00 + Crane Mobilization, Time & Material Cost.



910 54th Avenue, Suite 230
Greeley, CO 80634

Phone: 970-346-3900

Fax: 970-314-9050

www.envirotechservices.com

EST Proposal – Optional Tank, 25% Volume Upgrade*

- Six (6) Fiberglass Above Ground Storage Tanks
- AST Material of Construction: Fiberglass
 - Compatible with Storing Magnesium Chloride, or Calcium Chloride at Ambient Temperature
 - Designed for Atmospheric Pressure / Vacuum
- Configuration: Flat Bottom, Dome Top
- Diameter: 12'
- Height: 30'
- Design Specific Gravity: 1.4 g/mL
- Capacity: 25,380 Gallons
- Vent Type: 4.0" J-Vent
- Manway: Low Pressure
- Anchor System: Anchor Lugs (4X)
- Couplings – 1.0": Two - Site Tube
- Couplings – 3.0": One - Dome Radar Sensor Mount
- Couplings – 4.0": One - Vent
- Flanges – 4.0": Two - ANSI 150
- Tank Volume Scale: Gallon Tape at Site-Tube Location
- Color: BLM Carlsbad Canyon (Options Available)
- Delivered to Douglas County Facility. (Owner to coordinate & pay for tank unloading from delivery trailer.)
- Sales Tax: Not included in Pricing
- Lead-Time: 8-Weeks (Due to ETS' relationship with manufacturer, expedited delivery is possible.)

Six Tanks - Delivered: \$182,970.00

Six Tanks – Delivered, Anchored, Plumbed to Existing 4.0" HDPE Piping: \$187,770.00 + Crane Mobilization, Time & Material Cost.



910 54th Avenue, Suite 230
Greeley, CO 80634

Phone: 970-346-3900

Fax: 970-314-9050

www.envirotechservices.com

EST Proposal – Optional 4.0" Tank Recirculation Line / Manifold

- Pipe: HDPE, DR-17, 4.0"
- Cam-Lok Fittings: Aluminum
- Hardware: Grade-5
- Assorted Fittings at Pump Discharge & Tank Flanges.
- Whip Hoses, 4.0", UV Resistant

Tank Recirculation Line / Manifold Installed: \$16,200.

EST Proposal – Optional Centrifugal Pump Replacement

- The Existing Pump is 10 Years Old.
- Pump, Scot Centrifugal, Model 63, All Iron, 4x4 Flanged, with 15-HP TEFC 1,750 RPM Motor (Same as Currently Installed.)
- Pressure Transmitter, ProSense, 0-30 PSI, with M-12 Cable (Same as Currently Installed.)
- Colorado Licensed, Electrician to complete wiring.

Tank Recirculation Line / Manifold Installed: \$8,450.00.

EST Proposal – Optional Variable Frequency Drive (VFD) Replacement

- The Existing VFD is 10 Years Old.
- 15-HP, 480 VAC Drive in a 35" x 24" x 12", Type 3R Enclosure
- VFD Remote Key-Pad Mounted to Front Enclosure Door.
- Colorado Licensed, Electrician to complete wiring.

Tank Recirculation Line / Manifold Installed: \$9,750.00.



910 54th Avenue, Suite 230
Greeley, CO 80634

Phone: 970-346-3900

Fax: 970-314-9050

www.envirotechservices.com

EST Proposal – Optional Tank Level Monitoring & Control Panel Package

MUST ALSO SELECT VFD REPLACEMENT

- Six (6) Powered Radar Level Sensors.
 - Range: 20-Meters,
 - Accuracy: +/- 10mm
- 4G Wireless VPN Router for Remote Communication
 - StrideLinx with Cloud Notify
- 10" HMI / With Sun Screen
- Panel Build, Installation, Start-Up and Commissioning.
- Colorado Licensed, Electrician to complete wiring.
- Panel Certification: UL 508A Industrial Control Panel Shop

Tank Recirculation Line / Manifold Installed: \$35,775.00.

*** Ground Rules:**

- Existing ASTs are removed with the area cleaned and ready for tank placement.
- Existing 4.0" HDPE pipe left in place.
- Tank Cleaning / Disconnecting from Plumbing / Disposal:
 - As this is challenging to estimate, ETS can complete this work at a time, material, sub-contractor cost, plus margin fee.
- Customer responsible for StrideLinx Cloud Monitoring software (~\$200.00) & ongoing subscription.
- Customer responsible for cellular link monthly subscription.

Thank you,

Rodney Heiden

Engineer

rheiden@envirotechservices.com

970-396-4210