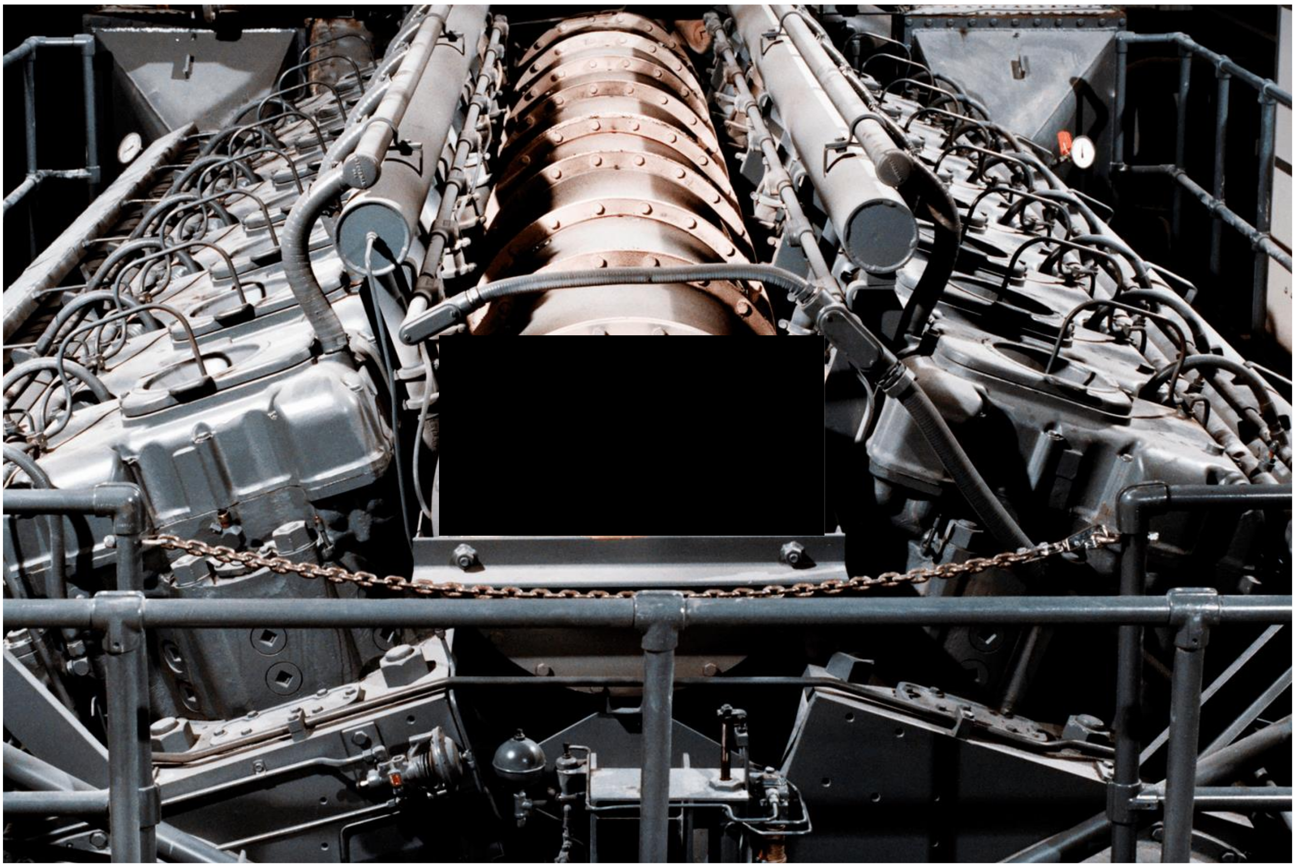
ATTACHMENT H

[redacted]



Date: July 23, 2021
Estimate is valid for 180 days

Budgetary Estimate for Emissions Reduction Solutions at EPNG Monument Compressor Station

Kinder Morgan

James Trent

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[redacted]

[redacted]

[redacted]

[redacted] is pleased to respond to your request for a budgetary estimate concerning engine and compressor optimization retrofits for the Cooper GMV 10TF units located in Monument New Mexico. This is a ***budgetary estimate*** for the scope of work listed and described in this estimate. Since no site visit has been made prior to this proposal, certain assumptions were made to be able to offer this estimate. It is not uncommon for final pricing to be within +/- 20% of this estimate after a site visit and full engineering review is conducted. As a turn-key budgetary estimate, this proposal includes all the estimated materials and labor efforts required to meet the project guarantees as requested in the RFP. [redacted] reserves the right to correct clerical errors in this proposal. This estimate pricing is valid for 90 days.

Approach to the Solution

There are several options and combinations of technologies, available through [redacted] to reach varying levels of reliability while reducing NOx emissions. These solutions will seek to positively manipulate all three sides of the combustion triangle – Air, Fuel and Ignition – thus improving combustion stability while reducing NOx and Methane emissions.

Performance Guarantees

The [redacted] guarantee for emission retrofit projects addresses two vital aspects of engine operation – emissions compliance and combustion stability. These performance guarantees will ensure that at completion of the commissioning phase, the engine will operate within the emissions requirements while operating more reliably than prior to the retrofit. The emissions performance will meet and/or exceed the described limits in the Performance and Guarantees section below. The combustion stability performance (reliability), demonstrated via Coefficient of Variation (CV), as explained in Combustion Stability and the Lean Limit below, will also meet and/or exceed the described parameters highlighted in the Performance and Guarantees section below.

Combustion Stability and the Lean Limit

The definition for "The Lean Limit" of combustion is subject to interpretation. There are some who suggest that if the flywheel turns, then the engine is performing as expected. At [redacted] every emissions reduction project is approached by evaluating and addressing the engine's specific combustion challenges. [redacted] defines these challenges and applies the following guidelines based on combustion stability. [redacted] uses the coefficient of variation or CV to define the recommended lean limit of operation. CV is simply the engine average standard deviation of combustion divided by the engine average peak pressure and is presented as a percentage. [redacted] characterizes engine performance by CV and recommends all proposed designs to have an operating CV of 10% or less. For this project, [redacted] will expect an engine CV less than 8%. Figure 1.2 summarizes CV and engine operating characteristics.

Figure 1.2

COV	Characteristic
≤ 5	Very smooth, only achieved with pre-chambers for lean burn engines
$5 \leq 8$	Smooth running engine
$8 \leq 10$	Typical lean burn performance
$10 \leq 12$	Somewhat rough running, maximum acceptable COV for long term operation
≥ 12	Rough running, not recommended for long term operation

[redacted]

[redacted]

SECTION 1- UNIT REFERENCE

Station	Units	Model	HP	Air Delivery	Current limit NOx	Current limit CO	Current limit VOC
Monument	1 - 3	GMV-10TF	1,002	PS	12.95	1.22	0.45
Monument	4 - 5	GMV-10TFSC	1,002	Turbo and PS	1.77	2.04	0.68

SECTION 2 - Technical Description of Solution

Kinder Morgan has requested solutions and pricing to reduce the unit specific emissions limits to .5g NOx for each of the units. To achieve the .5 g/bhp-hr emissions limits, [redacted] will recommend the necessary upgrades and combustion modification retrofits as described in this Budgetary Estimate.

When collaborating with customers on an emissions reduction project, the foundational system to any NOx reduction strategy is the air delivery system. [redacted] is the only retrofit company that will design an air delivery system to meet the specific needs of the customer's engine.

Turbocharger design and matching is an exact science and when performed properly will enhance the operating range while increasing the maintenance interval. [redacted] is the only turbocharger provider in this industry that owns its own turbocharger test cell facility. From air specification design to manufacturing to testing and delivery, [redacted] can manage and guarantee the turbocharger build will perform up to the customer's expectations. [redacted] also provides a 5-point turbocharger air specification performance test report with all emissions guaranteed turbochargers.

All designs are developed to ensure that a proper scavenge ratio is maintained for the unit and its application. Scavenge Ratio is a measure of the ACFM flow through the cylinder (air flow at AMP and AMT) divided by the trapped volume of the cylinder. This measure is applied to make sure that cylinders are adequately scavenged. This design parameter dictates how successful the charged air will flow through the system during each combustion cycle. The lower the ratio, the more combusted gases stay in the cylinder and act as nonparticipants to combustion for the following cycle (less efficiency). The higher the ratio means there is a more efficient gas exchange and more combustion participants for the following cycle.

Designing a turbocharger involves the development of a five-point air specification that is matched, and performance tested to provide a total peace of mind for project success.

[redacted]

[redacted]

Combustion System Modifications - Improved Fuel Delivery with enhanced mixing technology

To achieve the required emissions limits of .5 g, improvements, modifications, and upgrades to the current fuel delivery system will be needed. The air side will be addressed by the development of a properly sized turbocharger and air:fuel ratio control however, even with optimized air control, the cylinders will remain an extremely lean environment causing lower energy ignition to struggle with light-off. This will be overcome by implementing a high energy ignition system, combustion modifications and enhanced mixing technology. These upgrades and systems are highlighted below and described as follows.

[redacted]

The [redacted] system was designed as a user friendly, low operating cost system for achieving high-pressure fuel injection in large bore natural gas engines. The [redacted] system is an ALL-electronic high-pressure fuel injection system that eliminates the need for mechanical or hydraulic actuation of the fuel valves. The elimination of the mechanical system improves the reliability of fuel injection, eliminates the routine maintenance associated with stock mechanical or aftermarket hydraulics and greatly reduces the component cost and installation effort. The [redacted] system fundamentally changes the operating philosophy from the current constant timed (cam shaft) variable pressure (governor) to a variable timed (pulse width modulated) constant pressure (500 psig) system. This operating change greatly diminishes the effects of pressure waves within the fuel gas system and allows for extremely accurate balancing and control.

The [redacted] system valves inject fuel through direct injection at 500psig. Electronic control of the fuel injectors allows for automatic balancing and the ability to operate in [redacted] mode when the engine is lightly loaded. In [redacted] mode, the [redacted] system will work to avoid lean misfires during warm-up or unloaded conditions. This is accomplished by maintaining a rich enough mixture to fire a cylinder when more torque is needed while at the same time not fueling a cylinder when more torque is not required. Skip Fuel greatly extends the low torque operating range of the engine.

At the same BMEP, an engine fitted with enhanced mixing technology experiences ~20%-30% lower combustion loading and stress. Probabilistically this means a component failure occurring at ~40,000 hrs. on a conventionally fueled engine will not fail until the engine has accumulated ~2.5 times that number of cycles or ~100,000 hrs. of operation for a unit fitted with enhanced mixing technology.

[redacted]

Pilot Gas System

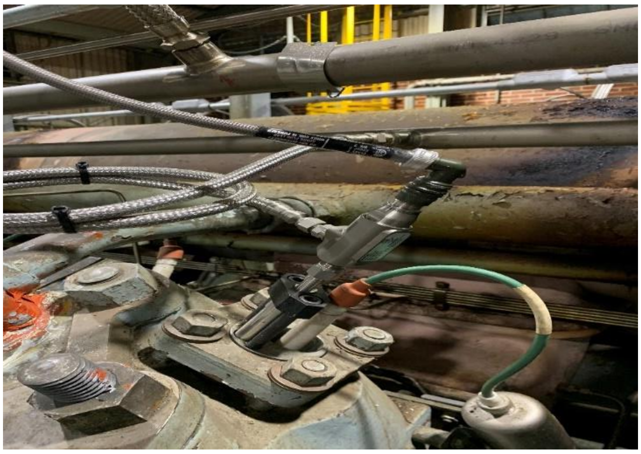
A pilot fuel supply system will be furnished. This assembly includes two steel pilot fuel headers, individual (one per Jet Cell) fuel filters, a fuel pressure regulator, and a I:2 amplifying ratio relay to bias Jet Cell fuel pressure from air manifold pressure. Also included with this assembly is the miscellaneous tubing, fittings, etc. to install the pilot fuel delivery system.

Jet Cell Power Cylinder Heads

New power cylinder heads with provisions to accept the Jet Cell gas ignitor are included with this assembly. The head being supplied is the standard currently stocked head for use on GMV, GMVA and GMVC engines. It has provisions to mount one Jet Cell per head. It also contains a provision for a standard spark plug to be used in a second location as well as a provision for the existing air starting valve. The second spark plug can have some beneficial impact on engine starting.

Due to extremely lean air/fuel ratio mixtures required to operate at the lower NOx levels, cylinder light off is greatly challenged. Pre-Combustion Chambers (PCC) are utilized where high energy ignition is required i.e. clean burn retrofits. The traditional PCC, with mechanical ball or wafer checks, function by admitting fuel in the PCC by method of differential pressure within the chamber. Fueling occurs when the fuel gas pressure against the check valve overcomes the pressure in the chamber. The extent of control with traditional PCC systems includes a fuel pressure bias typically mapped to AMP. This control is very “loose” and depends on the check valves to be functioning properly. Depending on operating conditions and fuel gas properties, check valves experience degradation at relatively short intervals including partial to full restriction of flow due to check valve sticking. In these conditions, even marginal control is not possible especially at ultra-lean air/fuel ratios. Generally, mechanical checks require cleaning every 750 – 2000 hours depending on gas quality and pose a significant maintenance and reliability issue for engines that are in frequent start stop service.

[redacted] is proud to present the OEM approved solution to the mechanical pre combustion chamber check valves with the r[redacted] system. The [redacted] system combats mechanical check valve issues and related maintenance costs. The [redacted] system was first introduced to the industry by [redacted] and is now owned and provided by [redacted]



The [redacted] system replaces the mechanical check valve with an electronic valve offering absolute control of the pre-chamber air: fuel ratio, eliminates startup fuel control issues and eliminates sticking issues. The [redacted] system positively actuates the PCC fuel valve with an end of admission (EOA) strategy, and it is not as susceptible to fouling. Combustion stability with the [redacted] system is nothing less than amazing. The common measure for combustion stability is Coefficient of Variation (CV) which measures the relative combustion stability by dividing the engine standard deviation into the engine average peak pressure. Engines fitted with PCC generally have CV values near 5%. Engines fitted with the [redacted] system generally have CV values near 3%, which accounts for nearly a 40% improvement in combustion stability

Power Piston

The bill of material reveals that the GMV-10-TF engines were originally manufactured with a " Mexican hat" style power piston, part number GMV-9-4A. While not a factor in meeting the emissions requirements, the crown contour of this piston is such that the high intensity flame front from the Jet Cell will impinge upon the crown in a more perpendicular fashion than later piston designs. For long term, reliability concerns it is recommended that any of the old GMY-4-9A pistons still in use be replaced with a more modern design. As the Mexican hat style piston was made obsolete in l961 experience indicates that there are probably none of these still in operation and therefore no financial considerations have been made for replacing these style pistons.

Power Cylinders

[redacted] records show that these GMV-10-TF units were originally supplied with power cylinders part number GMY-2- l4A#1. These are low port design with the distance from the top of the cylinder to the top of the exhaust port being nominally 10.5". [redacted] recommends replacing the current power cylinders to utilize a higher port option with the for the GMV-10-TF engine conversion.

Ignition System

To facilitate variable ignition timing control and to maintain similarity with the package being offered for the GMW-10-TF, a complete ignition system upgrade will be furnished as part of the conversion. The system being offered is the Altronic CPU 2000.

Scavenging Air System Modifications - High Efficiency Turbocharger - Series Configuration

To provide the scavenging and combustion air necessary to operate in the series turbocharged configuration at the proposed engine rating, ambient temperature rating of 110°F and effectively lower the NOx emissions, a high efficiency turbocharger will be added. The turbocharger will be specifically matched to engine requirements. [redacted] has experience with use of the Cooper-Bessemer Model CB13A in similar applications and is offering employment of same here. To mount the new turbocharger on the flywheel end of the existing engine base, a fabricated steel platform type support structure will be furnished. An angle bracket and two support legs that attached to the flywheel end housing make up the support system.

Dry Exhaust Manifold

The existing water-cooled exhaust manifold will remove too much heat energy from the exhaust system to allow the low emissions guarantee to be achieved. A new dry type of sectional exhaust manifold will be provided. Ceramic fiber insulation is sandwiched between steel inner and outer shells. An insulation wrapped expansion joint is placed between each of the five sections. Also supplied with this assembly is new exhaust elbows to keep the installed height to a minimum. The rear manifold section includes the provision for the by-pass valve piping.

[redacted]

Exhaust By-Pass Valve Linkage
To properly control the air/fuel ratio an exhaust by-pass butterfly valve must be supplied to control the speed of the turbocharger. This assembly includes a 6" valve with close-coupled pneumatic positioner and the piping to install the by-pass valve between the rear section of the exhaust manifold and in the turbocharger exhaust gas discharge adapter.

Turbocharger Oil System
To assure proper lubrication to the bearings in the new turbocharger an oil system will be supplied. That system includes a complete plate mounted turbocharger pre-lube panel as described in the following paragraph, a l 0-micron duplex. oil filter, a pressure regulator set at 35 psi, a check valve to prevent back flow, and all the tubing and fittings required to complete the installation. The existing oil header relief valves in the crankcase are set at only 25 psi. A new valve with a set point of 40 psi will be supplied and installed inside the engine crankcase.

Turbocharger Per-Lube Panel
Satisfactory operation of the new turbocharger includes pre-lube and post-lube requirements. Since these requirements are for much lower oil flows and pressures than are necessary for complete operation, a separate air motor driven turbocharger pre/post-lube panel will be furnished. The panel will be integrated into the turbocharger oil system described in the previous section. The sub-plate mounted assembly includes a 3-way on-off control valve, airline filter, air pressure regulator, air line lubricator, air motor, coupling with guard, positive displacement oil pump with integral 60 psi relief valve, and the check valves to prevent back flow. These components are pre-tubed and mounted on a sub-plate.

Turbocharger Air Discharge Piping/ Intercooler / Engine Intake Piping
The existing crosshead scavenging pistons will remain in use. New air piping is being furnished to connect the new turbocharger to the suction side of the crosshead scavenging pumps. An intercooler will be installed between the turbocharger discharge and the scavenge pump suction to limit the engine air chest temperature. Piping furnished as part of this assembly includes turbocharger air outlet pipe, intercooler inlet / outlet air covers, intercooler discharge pipe, and several connection pipes between scavenge cylinders. Several existing scavenge system items such as an inlet tee and two suction covers will be re-used.

Turbocharger Coolant Inlet and Outlet Piping
The new turbocharger must be cooled with engine jacket water. This assembly includes the miscellaneous piping, hoses, and fittings to provide coolant for inlet and outlet to the new turbocharger. This piping will be integrated into the engine coolant system in conjunction with its modification for the installation of the dry exhaust manifold.

Turbocharger Air Inlet and Exhaust Outlet Adapters
The new turbocharger air inlet and exhaust outlet flanges are not standard field piping sizes. To accommodate easy transition to standard size piping flanges, [redacted] will supply the special transition connections for both air inlet and exhaust outlet. The exhaust outlet is oriented above on the same vertical centerline as the air intake (matching the engine vertical centerline). The air intake connection matches a 16"' O.D. pipe while the exhaust connection terminates in a 18"- J25# flange connection.

[redacted]

Auxilliary Cooling System / On-Engine Piping and Assemblies

Engine Coolant Outlet Piping
Removing the water-cooled exhaust manifold will also remove the existing engine jacket water discharge piping, as much of it is integral with the exhaust manifold. A new discharge header assembly will be furnished. New discharge jumpers connecting the cylinder head outlets to the new outlet header will be steel braided flexible hose to ease maintenance. The customer connection to this new coolant discharge assembly will remain near to that which currently exists. However, Kinder Morgan will be responsible for any changes that must be made to the station discharge piping to meet the new discharge header tie point.

Engine Fuel Gas Piping
Installing the new dry exhaust manifold results in the need for new engine fuel headers. Two new headers and new stainless steel flexible braided hose jumpers will be furnished. The main gas supply piping and valves along with the individual trim valves will be re-used.

Crane Height
The CB13A turbine exhaust connection must be oriented in the vertical direction. [redacted] will terminate with an exhaust adapter with the Kinder Morgan tie point flange pointing upward. To meet this will require exhaust piping ending in a long radius elbow. The highest point on the Cameron supplied material will be 8' 2-3/4" above the engine crankshaft centerline. The height of the elbow must be added to determine crane clearance.

Example Aux Cooling Fin Fan and

Cooling System Modifications
At the increased boost levels required to meet the emission targets on these units, there will be an increased amount of heat rejection needed from the charge air necessitating modifications and upgrades to the exiting cooling capacity. [redacted] has not made an Engineering Site Visit in preparation of this Budgetary Estimate however, we have included some estimated costs based on past experience with Kinder Morgan on projects of a similar scope of work and supply.

At this time, the exact cooling system specifications are not known however, every effort will be made to reuse the existing equipment, where possible. Upon receiving data, either from an engineering study or from the customer, engineering models will determine exactly what upgrades or additions will be needed to ensure the overall cooling system will meet or exceed the new performance demand.

[redacted]

Air Intake/Exhaust System

In order to comply with the CO and VOC emission reduction requirements, called out in the RFP, modifications and upgrades to the air intake and exhaust system will be needed. [redacted] is recommending using a silencer / catalyst combination to achieve the desired result.

Controls

[redacted] is now the upgrade market leader in engine automation and emissions controls technologies. All of the systems and modifications explained in this budgetary estimate will be tied together with an advanced air:fuel ratio controller. [redacted] will utilize the [redacted] to achieve the emissions performance as required in the customer RFP. [redacted] will help eliminate or reduce costly emissions excursions that can negatively affect your ability to run under the permitted thresholds at the ultra-low levels.

[redacted]

Engines that utilize electronically controlled fuel valve systems are readily adapted to the quick response electronic pressure monitoring and automatic balancing system. These systems combined can maintain all the cylinders at the same approximate air/fuel ratio. This will prevent an excessively lean or rich cylinder from limiting the operable range of speeds or loads effectively increasing the operable range.

The monitoring functions built into the [redacted] System help to quickly diagnose small problems before they become big ones and thereby help to ensure engine protection. HyperBalance III™ is the most effective and accurate large bore engine balancing and in-cylinder monitoring platform in the natural gas compression industry. Some key features are:

- Data acquisition - requires no enterprise system to obtain combustion statistics
- Automatic balancing - for peak engine performance and protection
- Protection - Abnormal combustion detection with alarms and shutdowns

[redacted]

[redacted]

SECTION 3 – Scope of Supply

Detailed Bid Description

[redacted] agrees to provide the customer with all engineering, construction labor and oversight, project management, drafting materials and commissioning services, as noted, to upgrade and/or install the Emissions Reduction Solutions as described in this Budgetary Estimate in accordance with the [redacted]. Any exceptions to the specifications listed in the RFP are either clarified in this proposal [redacted].

The above-mentioned systems and pricing include the following parts and services:

Overview Scope of Work

- All design and project engineering and management required for unit specific adaptation and installation of the following systems: *Air Delivery System Upgrades or Retrofits, Fuel Delivery System Upgrades or Retrofits, Cooling Systems and Air Intake and Exhaust Systems Upgrades / Modifications in support of Emissions Reduction Solutions for the Units at the Monument Compressor Station*
- All manpower necessary to remove the replaced systems and install the new systems listed above
- All commissioning and start up services
- All drawings necessary to document modifications and support the installation
- Training for maintenance and operation of the installed systems

[redacted] Scope of Supply for Unit Upgrades

[redacted] will supply the following components necessary to complete the installation of the systems listed in the section above. These Fuel Systems are Class I, Division 2, Group D systems and are installed according to those guidelines:

- ***Budgetary Estimate*** covering all estimated time and material costs to complete this scope of work
- All engineering efforts to including, drawing reviews and engineering site visits
- Project manager for all project activities, timelines and customer project inquiries
- Procurement staff with QC engineer to purchase, inspect and deliver all required material
- [redacted] construction representative on-site during all construction activities to ensure project is being installed to **Kinder Morgan** Engineering Standards
- Commissioning expert to optimize the engine and systems integration
- Complete hands-on training of units and upgrade systems after completion of project commissioning
- Service site visit 12 months after completion of commissioning to review all installed [redacted] systems
- Two-year warranty on [redacted]
- New CB-13A Turbo In Series with existing piston scavenger on units 1-3
- Combustion Modifications – [redacted]
- Cooling System – New Intercoolers, New Aux Cooling System

[redacted]

- Air Intake / Exhaust System with Oxidation Catalyst
- Engine Hardware - New head with built-in Pre-Chamber, High port power cylinder, New clean burn power piston (replace the Mexican Hat style piston)
- Dry exhaust manifold
- All Turbo aux system (wastegate – oil/cooling systems)
- New coolant outlet header with outlet jumpers
- Overhaul of the existing piston scavenger/reed valves/sealing

Customer Scope of Supply

- Removal and disposal of hazardous materials
- Provide penetrations in transite siding and dispose of hazardous waste if required
- Provide for the testing and remediation of lead paint surfaces
- Any heavy equipment or elevated work platform equipment rental required to support unit upgrades and uprates
- Compressor Capacity Analysis or upgrades in support of new unit performance
- NDE testing and construction inspection as required
- Engine operator to start, stop and operate the unit as necessary for testing and commissioning
- Supply necessary documentation to for engineering and automation changes
- Any necessary or required welding, painting, testing of parts, pipes or systems not in [redacted] Scope of Supply
- Customer will allow [redacted] and its subcontractors to use plant facilities for accumulation of parts
- Customer will provide office space during the construction and commissioning efforts
- Customer will provide [redacted] and subcontractors with restroom facilities during construction and commissioning
- The customer will make repairs to the unit or its support equipment if the equipment is not operating as designed.
- Repair service may be requested of [redacted] Repairs will be quoted and billed on a time and material basis

Exclusions from Quotation price:

- Any applicable taxes are NOT included in the price. Applicable taxes will be calculated and billed at the time of invoicing.
- Cost of construction permitting (billed on T&M basis, as required).
- Time spent waiting by [redacted] personnel or its contractors due to delays caused by plant problems or plant non-preparedness.
- Additional waiting time will be billed on a time and materials basis.

Minimum Unit Health and Performance Assumptions

Current Unit Condition

The following assumptions were made during preparation of this proposal. The [redacted] scope will have to be added to the project or the customer scope of supply will be amended if any of the assumptions are not valid.

- Existing fuel gas metering and conditioning meet the fuel gas requirements for this project
- Current unit hardware and configuration is meeting current emissions requirements.
- Unit is in good health, with no mechanical defects.
- Current Performance Baseline date are accurate

[redacted]

[redacted]

- Current unit automation can accommodate start and stop sequencing of the system.
- Current unit automation can accommodate fuel flow-based fuel-air ratio control.

Project Guarantees and General Warrantees

- Any exceptions to these warranties are noted on the cover page.
- The standard manufacturer's warranties for all third-party components are in place at the time of shipment.
- The standard warranty for the [redacted] is 24 months, beginning at the start of commissioning.

Performance Guarantees	Current Baseline	[redacted] Upgrade / Uprate Solution
GMV-10-TF *(NOx)*	12.95 g/bhp-hr	.5 g/bhp-hr
GMV-10-TF (CO)	1.22 g/bhp-hr	93% reduction
GMV-10-TF (VOC)	.45 g/bhp-he	.3 g/bhp-hr

SECTION 4 - PRICING SCHEDULE, AND COMMERCIAL TERMS

[redacted] offers to supply the materials and services, as described in this proposal, for the following price.

2021 Budgetary Estimate Schedule of Values for Monument Compressor Station	
Required Upgrades and Retrofits for Units 1-3	**$ 6,694,873.00**
Required Upgrades and Retrofits for Units 4-5	**$ 2,491,143.00**

PRICE NOTES:

- Pricing in US dollars
- Price based on the purchase of the Scope or Work and Quantity contained in Seller's proposal.
- No taxes/assessments/duties are included in the pricing shown. Customer shall pay all sales, use, or transportation taxes, or duties for which it may be liable and/or which the law requires [redacted] to collect.

EXTRA WORK:

[redacted]

[redacted]

[redacted]

[redacted]

At Risk Items

[redacted]

[redacted]

Payment and Invoicing Conditions

[redacted]

Cancellation

[redacted]

[redacted]

Payment Terms

[redacted]

Indemnification/Limits of Liability

[redacted]

Additional or Different Terms

[redacted]

Codes and Standards

[redacted]

[redacted]