

**CONTRACT AND SPECIFICATIONS
FOR
WEC UNIT 1 AIR PREHEATER BASKET SUPPLY
CITY OF HASTINGS
HASTINGS, NEBRASKA
Contract No. HU 2024-01**

**Sealed Proposals Will Be Opened Promptly At
1:30 PM, Wednesday, January 17, 2024**

Bid Submitted By: _____



THIS BID DOCUMENT MUST BE SUBMITTED WITH BID

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FOR
WEC UNIT 1 AIR PREHEATER BASKET SUPPLY
CONSTRUCTION
FOR
CITY OF HASTINGS
HASTINGS, NEBRASKA**

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ADVERTISEMENT FOR BIDS

The City of Hastings, Nebraska, will receive bids for: **WEC Unit 1 Air Preheater Basket Supply HU 2024-01** until 1:30 p.m. at the City of Hastings, 1228 N Denver Ave., Hastings, Nebraska, on **Wednesday, January 17, 2024** at which time and place all bids will be publicly opened and read aloud. **Brief description of project:** Vendor to manufacture and ship all element baskets for the hot end, hot intermediate, and cold end layer for the WEC Unit 1 air preheater in accordance with the project specifications. If you plan on bidding and are not already on our approved bidders list for this project, you are **REQUIRED** to fill out the Plan Holders Submittal Form that is located on the City website: <https://www.cityofhastings.org/bids/>.

The Contract Documents, including plans and specifications, are on file at the City of Hastings, 1228 N Denver Ave., Hastings, Nebraska 68901. Copies of the plans and specifications in electronic (PDF) format may be obtained by visiting the City of Hastings Website: www.cityofhastings.org/bids. A paper copy is available for \$75.00, plus sales tax (\$5.25), plus shipping.

Each bid shall be accompanied by a certified check, drawn on a solvent bank in the State of Nebraska, or a bid bond in an amount of not less than five percent (5%) of the total bid of all contract construction costs, made payable to the City Treasurer of the City of Hastings, Nebraska, as security that the bidder to whom the contract may be awarded will enter into a contract to build all the improvements in accordance with this notice and give bond in the sum hereinafter provided for the construction of improvements.

No bid shall be withdrawn after opening of bids without the consent of the City of Hastings, Nebraska, for a period of sixty (60) days after scheduled time of closing bids.

DATED AT HASTINGS, NEBRASKA, this 21st day of December 2023.

Kimberly S Jacobitz, City Clerk

For City Clerk: Publish and Attach two (2) Proofs of Publication:
December 28, 2023
January 4, 2024

INSTRUCTIONS TO BIDDERS

All proposal information, including any unit price fill in sheets or other required information, shall be submitted on the proposal forms hereto attached. Copies of addenda, if any, shall be signed and attached. City of Hastings does NOT accept faxed or emailed bid returns.

Bidders shall inform themselves of all relevant matters, and, if awarded the contract, shall not be allowed any extra compensation by reason of any matter or thing concerning which such Bidder might not have fully informed themselves, prior to the bidding.

The Bidder bidding on the Specifications herein, who has exceptions to those called for in the Specifications, must so state in the space provided below and/or attach a letter explaining in detail the exceptions taken to those required in the Specifications. This letter of explanation shall become a part of the bid and shall be attached hereto. Failure by the Bidder to outline his exceptions will require the successful Bidder to comply with these Specifications.

EXCEPTIONS TO SPECIFICATIONS:

The Purchaser will not assume obligations resulting from losses or damages until acceptance of the equipment.

Checks of unsuccessful Bidders will be returned when their bids have been rejected and they will not be retained in excess of sixty (60) days from the date bids are opened. The check of the successful Bidder will be retained until the contract is awarded. Should the successful Bidder fail to perform as the Proposal and Specifications indicate, the City may use the check as liquidated damages within fifteen (15) days after written notice is given to the party who submitted the successful bid.

If any person contemplating submitting a bid for this contract is in doubt as to the true meaning of any part of the Specifications or other proposed contract documents, he may submit to Purchaser a written request for an interpretation thereof. The person submitting the request will be responsible for its prompt delivery. Any interpretation of the proposed documents will be made only by addendum duly issued or delivered to each person receiving a set of such documents. The Purchaser will not be responsible for any other explanation or interpretation of the proposed documents.

All addendums must be signed and attached to bid documents.

IF YOU HAVE QUESTIONS OR NEED HELP ON THESE SPECIFICATIONS

CONTRACT NO: HU 2024-01

WEC UNIT 1 AIR PREHEATER BASKET SUPPLY

PLEASE CONTACT ANY OF THE FOLLOWING:

PROJECT QUESTIONS

Derek Pfeifer
Production Engineer
Direct Line: 402-462-3673
Email: dpfeifer@cityofhastings.org

Bruce Perry
Maintenance Supervisor
Direct Line: 402-462-3573
Email: bperry@cityofhastings.org

GENERAL QUESTIONS OR REQUESTS

Rena Griess
Administrative Assistant – Engineering Dept, City of Hastings
Ph# 402-462-3665
Fax# 402-462-3666
Email: bidquestions@cityofhastings.org



IMPORTANT SUBMITTAL INSTRUCTIONS
ON HOW TO SUBMIT YOUR BID
FOR
CITY OF HASTINGS
WEC UNIT 1 AIR PREHEATER BASKET SUPPLY

Contract No. HU 2024-01

Your bid **MUST** be returned by means of hand delivery, USPS, Fed-X, UPS, or other carrier. City of Hastings **DOES NOT ACCEPT** bids that are faxed or emailed.

ALL the following documents are **TO BE SUBMITTED** in your bid packet, whether you received your bid invitation electronically, on a CD, DVD, or a **HARD COPY** by means of hand delivery or the mail carrier service.

1. **Cover sheet with your company's name filled in**
2. **ALL addendums received – must be acknowledged and signed**
3. **Bid Bond**
4. **If Exceptions, Instructions to Bidders with any exceptions listed**
5. **Proposal Page(s)**
6. **2024 T&M Rates**
7. **Proposed Payment Schedule**

FAILURE TO RETURN REQUIRED BID DOCUMENTS

COULD SUBJECT YOUR BID PROPOSAL TO BE REJECTED

IMPORTANT MAILING (OR HAND DELIVERY) INSTRUCTIONS

Please address your return envelope as shown in the example below. All bids must be sealed in a properly marked envelope.

To hand deliver please drop off between the hours of 8am – noon and 1pm – 5pm Monday-Friday.

Your Return Address

City of Hastings
Attn: Renae Griess
1228 N Denver Avenue
Hastings, NE 68901

**This Information MUST BE typed or written in the lower left hand corner of return envelope
OR SIMPLY CUT OUT AND TAPE ON YOUR RETURN ENVELOPE**



BID DOCUMENTS ENCLOSED

ATTN: Renae Griess, Administrative Assistant

Contract No: HU 2024-01

WEC Unit 1 Air Preheater Basket Supply

For City of Hastings

Bid Opens: Wednesday, January 17, 2024 @ 1:30 PM

If returning Fed-X or similar carrier, please enclose the bid in an “inner” envelope which is sealed. Please make sure BOTH envelopes are properly marked on the OUTSIDE OF THE ENVELOPE as shown in the example above.

One bid per envelope. Bid submittal via email is not allowed. Bids must be checked in to the City of Hastings prior to 1:30 pm deadline.

**FORMAL PROPOSAL FOR
WEC UNIT 1 AIR PREHEATER BASKET SUPPLY**

Formal Contract No. HU 2024-01

TO: City of Hastings
1228 N. Denver Ave
Hastings, NE 68901

Bid Opening: January 17, 2024 (Wednesday)
**SEALED BIDS MUST BE RECEIVED BY 1:30 P.M. AND
WILL BE OPENED PROMPTLY AT THAT TIME**

We, the undersigned, being familiar with all parts of these documents, being Notice to Bidders, Bid Proposal Price Sheets, Contract Document Forms, Plans and Specifications, Affidavit, and all other parts of this document, do herein submit our proposal to manufacture and ship all element baskets for the hot end, hot intermediate, and cold end layer for the WEC Unit 1 air preheater in accordance with the project specifications, **including Nebraska Sales Tax.**

BID SECTION I: Spring Outage Delivery by April 22, 2024

Item#	Description	Unit Price	Total
1	Element Baskets for Hot End Layer	<u>LUMP SUM</u>	\$
2	Element Baskets for Hot Intermediate Layer	<u>LUMP SUM</u>	\$
3	Element Baskets for Cold End Layer	<u>LUMP SUM</u>	\$
4	Freight, FOB Destination/Allowed	<u>LUMP SUM</u>	\$
5	Sales Tax at 5.5%	*(For Option 1 Contractors only)	\$
TOTAL SECTION I			
			\$
In Words			

BID SECTION II: Alternate - Fall Outage Delivery by September 20, 2024

Item#	Description	Unit Price	Total
1	Element Baskets for Hot End Layer	<u>LUMP SUM</u>	\$
2	Element Baskets for Hot Intermediate Layer	<u>LUMP SUM</u>	
3	Element Baskets for Cold End Layer	<u>LUMP SUM</u>	
4	Freight, FOB Destination/Allowed	<u>LUMP SUM</u>	
5	Sales Tax at 5.5%	*(For Option 1 Contractors only)	\$
TOTAL SECTION II			
			\$
In Words			

**FORMAL PROPOSAL FOR
WEC UNIT 1 AIR PREHEATER BASKET SUPPLY
Formal Contract No. HU 2024-01**

Potential Bidders can bid on **any or all of** the above options, depending on their availability or interest. City of Hastings reserves the right to select the option(s) that it deems best.

Award date: 1/23/24

Delivery due onsite date: 4/22/24 or 9/20/24, depending on which option(s) are available

Liquidated Damages: The Contractor shall pay a fee of \$1,000.00 per working day for failure to perform work within either the specified project period or the contract completion date in accordance with Paragraph GC.36 of the general conditions.

*The labor portion is not subject to sales tax; however, the material portion is taxed accordingly. The project is outside of city limits and is subject to **5.5% sales tax**. See following tax rules and regulation language.

For purposes of sales/use tax, this project falls under Nebraska Sales and Use Tax Regulation 1-017 for Contractors. By definition, a contractor is “any person who repairs property annexed to, or who annexes property to, real estate, including leased property, by attaching building materials to the annexed property or improvement being built or repaired, or who arranges for annexation of property.” Please refer to www.revenue.nebraska.gov/salestax.html for additional information.

For calculating this proposal:

- All contractors are to include sales/use tax on materials in the bidder's prices, if applicable.
- **Option 1 contractors must separately state materials, sales tax, labor, and other charges on all invoices for the project. Any invoices submitted that do not include this required breakdown of the charges will not be accepted for payment. (This requirement does not apply to Option 2 or 3 contractors.)**
- The sales/use tax rate on building materials is 7.0% for projects within Hastings' city limits and 5.5% for projects outside of city limits.
- Contractor labor charges for this proposal are not subject to sales/use tax per the Nebraska Department of Revenue Notice to Contractors effective October 1, 2007.
- In submitting this bid, the bidder certifies that he will comply with all applicable laws, ordinances, and codes of the City of Hastings and the State of Nebraska.
- For this project, Contractor will supply all materials.

What contractor option have you registered with the Nebraska Department of Labor (must select one)? Please refer to <https://dol.nebraska.gov> for additional information.

Option 1 _____

Option 2 _____

Option 3 _____

Is Nebraska Sales/Use Tax included in the above prices.

Yes _____ No _____

(ALL COSTS TO INCLUDE CITY AND STATE SALES TAX)

**FORMAL PROPOSAL FOR
WEC UNIT 1 AIR PREHEATER BASKET SUPPLY
Formal Contract No. HU 2024-01**

As noted in the proposal sheet one contract will be awarded for the sum total of all Bid Sections.

Exceptions: No Yes (If yes, list on *“Instructions to Bidders”* page)

Any modification of bid proposal will be considered non-conformance of the bid. All exceptions to the proposal shall be noted as an exception to the bid.

City of Hastings may at its own discretion delete any project area and / or component prior to award of contract.

In submitting this proposal, it is further understood that the City of Hastings reserves the right to reject any or all proposals and may waive any informalities and may accept the proposal which best suits its needs. It is further understood that this proposal may not be withdrawn for a period of sixty days (60) days after bids are opened.

All proposals shall have original signatures. Electronic time-stamped signatures will be acceptable. Photocopied or printed versions of bid bonds will be accepted without original signatures, however a hardcopy with original signatures must be received by City of Hastings within 5 business days.

OFFICIAL NAME & ADDRESS

Firm Name	Signature
Address	Typed or Printed Name
City, State, Zip	Title
Phone No.	Date
Fax No.	Email Address

**ALL BIDS MUST BE CHECKED IN TO CITY CLERK
PRIOR TO 1:30 PM DEADLINE**

AGREEMENT

THIS AGREEMENT, made and entered into this day of 2024, by and between the City of Hastings, Party of the First Part, hereinafter called the "Purchaser" or "City", and a of (town) in the State of , Party of the Second Part, hereinafter called the "Contractor".

WITNESSETH: THAT,

WHEREAS: The Purchaser has caused the necessary contract documents to be prepared for defining material, equipment, and/or labor to be supplied to the City of Hastings, and delivered complete as specified in the accompanying contract documents.

WHEREAS: The Purchaser has advertised for bids from Contractors, has received said bids, analyzed same and duly awarded a contract to the "Contractor", "Party of the Second Part", for material, equipment, and/or labor as hereinafter set forth and as stated more in detail in the Proposal and related contract documents to wit; Notice to Bidders, Instructions to Bidders, Specifications; all of which documents are attached hereto and made a part of this Contract.

NOW, THEREFORE: It is hereby agreed that for the sum of . (\$)

to be paid by the Purchaser, within Thirty (30) days after the acceptance of material, equipment, and/or labor by the Purchaser, to the Contractor, the Contractor agrees to furnish all materials, equipment, and/or labor as required by the accompanying specifications, and the aforesaid contract documents, for **WEC Unit 1 Air Preheater Basket Supply HU2024-01.**

All materials, equipment, and/or labor shall be in accordance with the accompanying contract documents and specifications which are as much a part of this Agreement as if repeated verbatim herein.

It is further agreed that the Contractor will start work promptly, furnish the necessary drawings promptly and complete the work in the number of days set forth in the Proposal.

AGREEMENT

IN WITNESS WHEREOF: The Parties of the First and Second Parts have hereto set their hands and seals on the day and year above written.

CITY OF HASTINGS
Party of the First Part

By: _____

Date: _____

ATTEST:

City Clerk

CONTRACTOR
Party of the Second Part

SEAL

By: _____

Title: _____

Date: _____

APPROVED TO FORM:

City Attorney

Note: If executed by one other than President, Partner or the individual Owner, a Power-of-Attorney authorizing execution should accompany this Contract.

SECTION 1 - GENERAL CONDITIONS

GENERAL CONDITIONS

GC.1 Contract Documents

It is understood and agreed that the Notice to Bidders, Instructions to Bidders, Proposal, Proposal Data, Contract Agreement, Performance Bond, Payment Bond, General Conditions, Specifications, Drawings, Addenda, and Change Orders issued by the Purchaser or the Engineer, and accepted by Contractor, and specifications and engineering data furnished by the Contractor and accepted by the Purchaser, are each included in this Contract and the work shall be done in accordance therewith.

GC.2 Definitions

Words, phrases, or other expressions used in these contract documents shall have meanings as follows.

1. "Contract" or "contract documents" shall include the items enumerated above under CONTRACT DOCUMENTS.
2. "Purchaser" shall mean the City of Hastings named and designated in the Contract Agreement as "Party of the First Part," and their duly authorized agents. All notices, letters, and other communication directed to the Purchaser shall be addressed and delivered to:

City of Hastings – Whelan Energy Center
Attention: Derek Pfeifer, Production Engineer
4520 E South Street
Hastings, Nebraska 68901

Or, by email to dpfeifer@cityofhastings.org

3. "Contractor" shall mean the corporation, company, partnership, firm or individual named and designated in the Contract Agreement as the "Party of the Second Part," who has entered into this Contract for the performance of the work covered thereby, and its, his, or their duly authorized representatives.
4. "Subcontractor" shall mean and refer only to a corporation, partnership, or individual having a direct contract with the Contractor for performing work covered by these contract documents.
5. "Engineer" shall also refer to City of Hastings as the purchaser.
6. "Date of contract," or equivalent words, shall mean the date written in the first paragraph of the Contract Agreement.
7. "Day" or "days," unless herein otherwise expressly defined, shall mean a calendar day or days of 24 hours each.
8. "The work" shall mean the equipment, supplies, materials, labor, and services to be furnished under the contract and the carrying out of all obligations imposed by the contract documents.

SECTION 1 - GENERAL CONDITIONS

9. "Drawings" or "plans" shall mean all (a) drawings furnished by the Purchaser as a basis for proposals, (b) supplementary drawings furnished by the Purchaser to clarify and to define in greater detail the intent of the contract drawings and specifications, (c) drawings submitted by the successful bidder with his proposal (d) drawings furnished by the Purchaser to the Contractor and accepted by Contractor during the progress of the work, and (e) engineering data and drawings submitted by the Contractor during the progress of the work
10. Whenever in these contract documents the words "as ordered," "as directed," "as required," "as permitted," "as allowed," or words or phrases of like import are used, it shall be understood that the order, direction, requirement, permission, or allowance of the Purchaser or Engineer is intended only to the extent of judging compliance with the terms of the contract; none of these terms shall imply that the Purchaser or the Engineer has any authority or responsibility for supervision of the Contractor's forces or construction operations, such supervision and the sole responsibility therefor being strictly reserved for the Contractor.
11. Similarly the words "approved," "acceptable," "proper," "satisfactory," or words of like effect and import, unless otherwise particularly specified herein, shall mean approved, acceptable, proper, or satisfactory in the judgment of the Purchaser or Engineer, to the extent provided in (10) above. The words "reasonable" and "suitable" shall be understood and mutually agreed to be as in comparison to common industrial practice.
12. Whenever in these contract documents the expression "it is understood and agreed" or an expression of like import is used, such expression means the mutual understanding and agreement of the Parties executing the Contract Agreement.
13. "Official acceptance" shall mean the Purchaser's written acceptance of all work performed under this Contract, based on the Engineer's final inspection and issuance of a final payment certificate.
14. "Project completion" shall mean that the Air Heater is ready for operation. The project completion date is at the end of day, November 3rd, 2023.
15. "Final Acceptance" shall mean that all work has been completed in accordance with these specifications, and the project has either been walked down, punch list items have been completed, or Purchaser is ready to accept the Work as complete, or Purchaser has not issued a notice of defect within sixty (60) days after receipt of the Work and thereby accepts the work as complete.
16. "Stop Work Order" shall mean that the Purchaser will provide a written order to the Contractor requiring the Contractor to stop all, or any part of, the work called for by this Contract, for a time not longer than forty-five (45) days per instance or sixty (60) days in the aggregate. The order shall specify the reasoning for the suspended work, which may include, but are

SECTION 1 - GENERAL CONDITIONS

not limited to, engineering considerations, changes to the project scope, safety or environmental concerns, or other issues detrimental to the project. Upon receipt of the order, the Contractor shall immediately comply with its terms and take all reasonable steps to minimize the incurrence of costs allocable to the work covered by the order. As soon as practical, the Purchaser and Contractor shall discuss the impacted activities, schedule, materials, labor, and equipment. If applicable, Purchaser and Contractor will seek to negotiate an equitable adjustment in the schedule, Contract price, or both, and the contract shall be modified, or a change order issued, as necessary. Upon any agreement and finalization of commercial conditions, Purchaser to provide written order to cancel the stop work order.

GC.3 Execution of the Contract

Once the bids have been evaluated, the Purchaser will electronically submit the Contract Agreement to the Contractor. The Contractor shall sign the Contract Agreement and return to Purchaser for the final approval process. Upon final approvals, the Contract Agreement will be signed by the Purchaser and electronically returned to the Contractor. Contractor shall then mail one electronic or hardcopy of insurance documents, and one electronic or hardcopy of power of attorney forms to the Purchaser. The date of contract on the bond forms and power of attorney forms shall match the date provided on the Contract Agreement by the Purchaser.

The Purchaser will review the final documents and electronically send a final conformed contract to the Contractor.

GC.4 Legal Addresses

The business address of the Contractor listed in the Proposal is hereby designated as the place to which all notices, letters, and other communication to the Contractor will be mailed or delivered. The address of the Purchaser appearing in section GC.2 is hereby designated as the place to which all notices, letters, and other communication to the Purchaser shall be mailed or delivered. Either Party may change his address at any time by an instrument in writing delivered to the Engineer and to the other Party.

GC.5 Scope and Intent of Contract Documents

The various parts of the contract documents are intended to supplement but not necessarily duplicate each other. Any work exhibited in one part and not in another shall be executed as if it had been set forth in all parts, so that the work will be performed according to the complete design as determined by the Engineer.

Should anything necessary for a clear understanding of the work be omitted from the contract documents, or should the requirements are discovered to be in conflict, the Contractor shall secure written instructions from the Engineer before proceeding with the work affected thereby.

GC.6 Independent Contractor

SECTION 1 - GENERAL CONDITIONS

The relationship of the Contractor to the Purchaser shall be that of an independent contractor.

GC.7 Assignment

The Contractor shall not assign the work, or any part thereof, without the previous written consent of the Purchaser, nor shall he assign, by power of attorney or otherwise, any of the money payable under this Contract unless written consent of the Purchaser has been obtained. No right under this Contract, nor claim for any money due or to become due hereunder shall be asserted against the Purchaser, or persons acting for the Purchaser, by reason of any so-called assignment of this Contract or any part thereof, unless such assignment has been authorized by the written consent of the Purchaser. In case the Contractor is permitted to assign moneys due or to become due under this Contract, the instrument of assignment shall contain a clause subordinating the claim of the assignee to all prior liens for services rendered or materials supplied for the performance of the work.

GC.8 Oral Statements

It is understood and agreed that the written terms and provisions of this agreement shall supersede all oral statements of representatives of either the Purchaser or Contractor, and oral statements shall not be effective or be construed as being a part of this Contract.

GC.9 Reference Standards

Reference to the standards of any technical society, organization, or association, or to codes of local or state authorities, shall mean the latest standard, code, specification, or tentative standard adopted and published at the date of taking bids, unless specifically stated otherwise.

GC.10 Source of Materials

To the extent possible, materials, and equipment (including components thereof) furnished under these specifications shall be produced, processed, manufactured, and assembled within North America. Substitution of foreign materials for domestic materials will not be permitted unless such substitution is clearly stated in the Proposal and accepted by the Purchaser.

GC.11 Contractor to Check Drawings and Lists

The Contractor shall check all dimensions, elevations, and quantities indicated on the drawings and lists furnished to him by the Engineer. The Contractor shall notify the Engineer of any discrepancy between the drawings and the conditions at the site, or any error or omission in the drawings, or in the layout as given by stakes, points, or instructions, which he may discover in the course of the work. Full instructions will be furnished by the Engineer should such error or omission be discovered, and the Contractor shall carry out such instructions as if originally specified.

GC.12 Figured Dimensions to Govern

Dimensions and elevations indicated on the drawings shall be accurately followed even though different from scaled measurements. No work indicated on the drawings, the dimensions of which are not indicated, shall be executed until necessary dimensions have been obtained from the Engineer.

SECTION 1 - GENERAL CONDITIONS

GC.13 No Waiver of Rights

Neither the inspection by the Purchaser or Engineer or any of their officials, employees, or agents, nor any order by the Purchaser or Engineer for payment of money, or any payment for, or acceptance of, the whole or any part of the work by the Purchaser or Engineer, nor any extension of time, nor any possession taken by the Purchaser or its employees, shall operate as a waiver of any provision of this Contract, or of any power herein reserved to the Purchaser, or any right to damages herein provided, nor shall any waiver of any breach in this Contract be held to be a waiver of any other or subsequent breach. However, notwithstanding the foregoing, Contractor may rely on the Engineer's acceptance of its work.

GC.14 Authority of the Engineer

To prevent delays and disputes, and to discourage litigation, it is agreed by the parties to this Contract that the Engineer shall, except to the extent of material considerations indicated by the Contract, promptly, reasonably, and in good faith determine the quantities of work which are to be paid for under the Contract and shall resolve all questions in relation to the work.

If, in the opinion of the Contractor or the Purchaser, a decision made by the Engineer is not in accordance Contract and after receiving a written notice of the decision, either Party may file with the Engineer and the other Party to the Contract, within 30 days after receipt of the decision, a written objection to the decision. Failure to file an objection within the allotted time will be considered acceptance of the Engineer's decision and the decision shall become final and conclusive.

The Engineer's decision and the filing of the written objection thereto shall be a condition precedent to the right to request arbitration or to start action in court.

It is the intent of this agreement that there shall be no delay in the execution of the work and the decision of the Engineer as rendered shall be promptly rendered and observed.

GC.15 Engineering Inspection

The Purchaser may appoint (either directly or through the Engineer) such inspectors as the Purchaser deems proper to inspect the work for compliance with the contract documents. The Contractor shall furnish all reasonable assistance required by the Engineer, or inspectors, for the proper inspection of the work. Should the Contractor object to any interpretation of the Contract by an inspector, the Contractor may make written appeal to the Engineer for a decision. Inspections performed on Contractor's property will be during business hours, with reasonable advanced warning and at Purchaser's expense.

Inspectors shall have the authority to reject work which does not conform to the material requirements of the contract documents. Inspection shall not relieve the Contractor from any obligation to construct the work strictly in material accordance with the contract documents.

Upon the failure of the Contractor or its Subcontractors to comply with any of the requirements of this Contract (but not limited to quality or safety), the Purchaser shall have the authority to stop any portion of the work affected by such failure until such failure is

SECTION 1 - GENERAL CONDITIONS

remedied. If the Purchaser issues a Stop Work Order, the Purchaser shall not be liable for any costs or expenses claimed by Contractor arising after the issuance of such Stop Work Order, if and until, the Stop Work Order is cancelled. The construction schedule shall not be delayed or extended as a result of the Purchaser's issuance of a Stop Work Order due to such noncompliance pursuant to this Article GC.15.

GC.16 Contractor Default

If the work to be done under this Contract is abandoned by the Contractor; or if this Contract is assigned by him without the written consent of the Purchaser; or if the Contractor is adjudged bankrupt; or if a general assignment of his assets is made for the benefit of his creditors; or if a receiver is appointed for the Contractor or any of his property; that the Contractor is violating any of the conditions of this Contract, or that he is executing the same not in accordance with the terms of said Contract; or if the work is not substantially completed within the time named for its completion or within the time to which such completion date may be extended; then the Purchaser may serve written notice upon the Contractor and his surety of the Purchaser's intention to terminate this Contract. Unless within 5 days after the serving of such notice, a satisfactory arrangement is made for continuance, this Contract shall terminate. In the event of such termination, the Purchaser shall have the right to take over and complete the work, by contract or otherwise. The Contractor shall be liable to the Purchaser for all excess cost sustained by the Purchaser by reason of such prosecution and completion up to the limitation of liability set forth in GC.38. The Purchaser may take possession of, and utilize in completing the work, all materials on the site of the work.

Contractor, without liability, may terminate all or part of the Contract by written notice to the Purchaser, if: (i) the Purchaser is in material breach of its obligations, including any breach of the Contract which the Purchaser has failed to remedy or provided to Contractor a reasonable remediation plan, within 30 days of being notified in writing of the material breach by Contractor; or (ii) the Purchaser becomes bankrupt or insolvent, or makes an arrangement with its creditors, has a receiver or administrator appointed, commences winding up or similar proceedings or ceases or threatens to cease to carry on business or becomes unable to pay its debts as they fall due.

GC.17 Beginning, Progress, and Completion of the Work

The time of completion is a basic consideration of this Contract. Unless otherwise specified in these contract documents or advised by written order of the Purchaser, the Contractor shall begin work within 10 days after the date of the effective date of the Contract. The work shall be prosecuted to completion in accordance with the specified schedule, subject to adjustment as provided in these contract documents.

The Purchaser reserves the right to require the Contractor to modify any portion of the schedule the Purchaser determines to be impracticable or unreasonable; as required to coordinate the Contractor's activities with those of other contractors, if any, engaged in work for the Purchaser on the Purchaser's site; and to avoid undue interference with the Purchaser's operations. Upon acceptance by the Purchaser of the Contractor's detailed fabrication schedule, the Contractor will be responsible for maintaining such schedule.

SECTION 1 - GENERAL CONDITIONS

If at any time the Contractor's work is behind schedule, he shall immediately put into effect definite procedures for getting the work back on schedule. The procedures shall be subject to review by the Purchaser.

GC.18 Hindrances and Delays

The Contractor expressly agrees that in undertaking to complete the work within the time specified, he has made allowances for all hindrances and delays which might usually be expected to occur in performing the work. No claims shall be made by the Contractor for such hindrances and delays.

If the Contractor experiences hindrances and delays which, in his opinion, are not usually to be expected in the performance of the work and which affect the performance of the work, he may request a change in the contract. Such hindrances and delays may include, but not be limited to, acts or failure to act by the Purchaser or other contractors employed by the Purchaser, fires, floods, labor disputes, epidemics and pandemics, including COVID-19 and its variants, acts of government, or acts of God. Such hindrances and delays shall include severe rain, snow, or other inclement weather. Claims by the Contractor for any change in the Contract due to such hindrances and delays shall be made in accordance with the requirements of Article GC.22, CHANGES TO THE CONTRACT. The Contractor shall use all commercially reasonable means to minimize the extent of the delay.

GC.19 Suspension of Work

The Purchaser reserves the right to suspend and reinstate execution of the whole or any part of the work without invalidating the provisions of the Contract for a period no longer than forty-five (45) days per instance or sixty (60) days in aggregate. Suspension or reinstatement of the work will be by written notice to the Contractor from the Purchaser.

Suspension of work shall not automatically entitle the Contractor to additional compensation or a change in the Contract time; however, the Contractor will be reimbursed for real and unavoidable direct costs incurred by him as a result of such suspension and/or the Contract will be extended as required to compensate for any delay due to such suspension. Claims by the Contractor for change of Contract time or an adjustment of the Contract price, due to work suspensions ordered by the Purchaser shall be made in accordance with the requirements of Article GC.22, CHANGES TO THE CONTRACT. The Contractor shall use all commercially reasonable means to minimize the consequences of such suspension.

GC.20 Cancellation of Work

The Purchaser reserves the right to cancel any unshipped portion of the work by giving written notice to the Contractor. In the event of cancellation, the Purchaser will pay the Contractor reasonable and proper cancellation costs including material procured, labor manhours performed, and such materials and services as cannot be cancelled, including any unavoidable cancellation fees incurred by Contractor.

The Contractor shall, after consultation with the Purchaser, take all commercially reasonable steps to minimize the costs related to cancellation. The Contractor shall provide the

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Purchaser with an accounting of costs claimed, including adequate supporting information, and the Purchaser may, at its expense, audit the claimed costs and supporting information, subject to Contractor's Financial Nondisclosure Agreement.

GC.21 Modifications

The Contractor shall modify the work whenever so ordered by the Purchaser and such modifications shall not affect the validity of the Contract. Modifications may involve changes in the amount of the work to be performed or changes in the Contract time for which appropriate changes to the Contract will be made.

Contract changes due to modifications shall be made in accordance with the requirements of Article GC.22, CHANGES TO THE CONTRACT.

GC.22 Changes to the Contract

The Contract may be changed only by duly executed change orders issued by the Purchaser and accepted in writing by Contractor.

If, in the opinion of the Purchaser or the Contractor, any event or action by the other Party justifies a change in the Contract, either Party shall initiate with the other Party, within 5 days after such event or action, a request for a change to the Contract. All documentation required to substantiate the proposed change shall be submitted within a minimum reasonable time after initiating the request for change. Upon the parties reaching agreement regarding the proposed change, the Purchaser will issue a written change order therefor.

GC.22.1 Contract Price Changes

The Contract price may be changed due to modifications which involve extra work or decreased work; or due to work suspensions, hindrances, and delays over which the Contractor has no control, and such changes must be initiated by a duly executed change order. Claims for changes in the Contract price shall conform to the requirements specified herein.

GC.22.1.1 Increased Price

If a change in the Contract is required due to work suspensions or hindrances and delays, the Contract price will be increased according to agreed lump sums, agreed acceleration costs, or other demonstrable costs submitted by the Contractor and substantiated to the reasonable and good faith satisfaction of the Purchaser.

If a change in the Contract price is required due to a modification which increases the amount of the work, and the added work or any part thereof is of a type and character which can properly and fairly be classified under one or more unit price items of the Contract, then the Contract price will be increased according to the amount actually done and at the applicable unit price. Otherwise, such work shall be paid for as herein-after provided.

Contract price changes for modifications involving extra work will be based on agreed lump sums or on agreed unit prices whenever the Purchaser and the Contractor agree upon such

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prices before the extra work is started; and only after the receipt and acknowledgement of a duly executed change order.

For the purpose of determining whether proposed extra work will be authorized, or for determining the payment method for extra work, the Contractor shall submit to the Engineer, upon request, a fixed, formal proposal for the extra work.

GC.22.1.2 Decreased Price

If a change in the Contract price is required due to a modification which decreases the amount of work, such decrease shall not constitute the basis for a claim for damages or anticipated profits on work affected by such decrease. Where the value of omitted work is not covered by applicable unit prices, the Contractor shall provide a revised proposal for the reduced scope of supply. The Contract price shall be the greater of the revised proposal price or the Contract price for the uncanceled work plus the cancellation charges for the cancelled work in accordance to Article GC.20.

GC.22.2 Contract Time Changes

The Contract time may be changed due to work modifications, hindrances and delays, and work suspensions over which the Contractor has no control.

Contract time will not be changed for delays caused by unfavorable weather or unsuitable ground conditions normally incident to the work, inadequate construction force, failure to place timely orders for equipment and materials, or other causes within the control of the Contractor.

GC.23 Step Dispute Resolution

In the event of any controversy, claim or dispute between the Parties arising out of or relating to this Contract, including its enforcement, such controversy, claim or dispute, including disputes regarded as such by only one of the Parties, the Parties shall negotiate in good faith to resolve such dispute, including third party mediation, if the Parties so agree.

If no settlement is achieved, either Party may pursue a claim in a federal or state court with competent jurisdiction.

GC.24 Laws and Regulations

The Contractor shall observe and comply with all ordinances, laws, and regulations, and shall protect and indemnify the Purchaser and the Purchaser's officers and agents, including the Engineer, against any claim or liability arising from or based on any violation of the same.

GC.25 Taxes, Permits, and Licenses

The Contractor shall pay all sales, use, and other taxes that are lawfully assessed against the Purchaser or Contractor in connection with the work and shall obtain and pay for all required licenses, permits, and inspections.

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The Contractor will be compensated for any increase in tax rates, license fees, and permit fees or any new taxes, licenses, or permits imposed after the date of the Proposal; provided, however, that this provision shall be limited to sales, use, and excise taxes assessed against the completed work and to licenses and permits required specifically for the proposed work.

GC.26 Patents

Royalties and fees for patents covering materials, articles, apparatus, devices, equipment, or processes used in the work shall be included in the contract amount. The Contractor shall satisfy all demands that may be made at any time for such royalties or fees and he shall be liable for any damages or claims for patent infringements. The Contractor shall, at his own cost and expense, defend all suits or proceedings that may be instituted against the Purchaser for alleged infringement of any patents involved in the work and, in case of an award of damages, the Contractor shall pay such award. Final payment to the Contractor by the Purchaser will not be made while any such suit or claim remains unsettled.

GC.27 Materials and Equipment

Unless specifically provided otherwise in each case, all materials and equipment furnished for permanent installation in the work shall conform to applicable standard specifications and shall be new, unused, and undamaged when installed or otherwise incorporated in the work. No such material or equipment shall be used by the Contractor for any purpose other than that intended or specified, unless such use is specifically authorized by the Purchaser in each case.

All required tests in connection with acceptance of source of materials shall be made at the Contractor's expense by a properly equipped laboratory of established reputation whose work and testing facilities are acceptable to the Purchaser. Any change in origin or method of preparation or manufacture of a material being routinely tested will require new tests. Reports of all tests shall be furnished to the Engineer or Purchaser in as many copies as required.

GC.28 Guarantee

The Contractor guarantees that the work herein contracted ("Products") will be as specified and will be free from defects in workmanship, and materials. Contractor does not guarantee or warrant parts (a) the Purchaser fails to install, inspect, operate, store, or maintain the Products in accordance with generally approved industry practice; or (b) the Purchaser fails to install, operate, store, or maintain the Products in accordance with instructions from Contractor; or (c) the Purchaser fails to give Contractor written notice within 30 days of its discovery of a defect; or (d) the Purchaser fails to install any proprietary equipment supplied to the Purchaser by Contractor under the direct supervision of our authorized representative; or (e) the Products have been altered or repaired by someone other than Contractor or its agreed upon subcontractors; or (f) the defect relates to corrosion, erosion, fouling, cleaning, and/or plugging of the Product or to a fire or explosion or (g) there is damage to the Work resulting from soot-blowing practices that do not follow Contractor technical requirements or instructions, including using poor quality or wet steam/air that does not meet the requirements recommended by Contractor or damage to Work due to the Purchaser's use of poorly designed or operating soot-blowing equipment. If within the Guarantee Period (as defined below) the Product fails to meet the provisions of this guarantee, the Contractor shall promptly correct any defects, including nonconformance with the contract documents by

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adjustment, repair, or replacement of all defective parts or materials at the Contractor's option and expense, after consulting with the Purchaser on the proposed remedy plans.

Except as otherwise prescribed by the terms of any special guarantees required by the contract documents, the Guarantee Period shall begin on the date of final payment and shall end 12 months later, but in no event later than eighteen (18) months after the delivery of the Products (“Guarantee Period”).

The cost of all materials, parts, labor, transportation, supervision, special tools, and supplies required for replacement or repair of parts and for correction of defects during the Guarantee Period shall be paid by the Contractor.

This guarantee shall be extended to cover all repairs and replacements furnished under the guarantee and the period of the guarantee for each such repair or replacement shall be 1 year after correction of the defect but in no case to exceed twenty-four (24) months after the delivery of the original Products.

The Contractor will be given an opportunity to confirm the existence of the defect, but he shall not delay the correction while making such determination.

If within 10 days after the Purchaser has notified the Contractor of a defect, failure, or abnormality in the work, the Contractor has not started to make the necessary repairs or adjustments or provided Purchaser with a reasonable plan of remedy, the Purchaser is hereby authorized to make the repairs or adjustments or to order the work to be done by a third party; the cost of the work to be paid by the Contractor.

In the event of an emergency where, in the reasonable and good faith judgment of the Purchaser, delay would cause serious loss or damage, repairs or adjustments may be made by the Purchaser or a third party chosen by the Purchaser without advance notice to the Contractor and the cost of the work shall be paid by the Contractor.

GC.29 Contractor’s Insurance Coverage

The Contractor shall not commence work under this Contract until Contractor has obtained all the insurance required under this article. Furthermore, the Contractor shall not allow any sub-contractor to commence work under this Contract until the sub-contractor has obtained the same insurance as is required of the Contractor. The sub-contractor alone shall be responsible for the sufficiency of its own insurance program.

GC.29.1 Certificates of Insurance

Certificates of Insurance acceptable to the Purchaser shall be filed with the Purchaser prior to commencement of the work. All insurance carried shall conform to the relevant provisions of the respective Project Documents and be with insurance companies which are rated “A, X” or better by Best’s Insurance Guide, or other insurance companies of recognized responsibility reasonably satisfactory to the Purchaser.

GC.29.2 Proof of Carriage of Insurance. Satisfactory certificates of insurance shall be filed with the Purchaser prior to starting any construction work on this Contract. The Parties agree

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that the requirements with respect to requirements to procure and maintain insurance under this Section is a material part of this Contract.

GC.29.3 Additional Insureds

Insurance coverages furnished under this Contract, with the exception of Workers' Compensation and Employer's Liability, shall include the City of Hastings and their members, directors, officers, agents, and employees as Additional Insureds on a primary and noncontributory basis, and shall include Products and completed operations with respect to the activities of the Contractor and shall be maintained for the full duration of the project including for a period after completion to include the statute of repose.

Notwithstanding any other provision of these policies, the insurance afforded shall apply separately to each insured, with respect to any claim, suit, or judgment made or brought by or for any other insured, as though a separate policy had been issued to each, except the insurer's liability shall not be increased beyond the amount or amounts for which the insurer would have been liable had only one insured been named.

The Purchaser shall not by reason of their inclusion under these policies incur liability to the insurance carrier for payment of premium for these policies.

GC.29.4 Waiver of Subrogation

To the extent permitted by applicable law, the Contractor and their sub-contractor shall require their insurance carriers, with respect to all insurance policies, to waive all rights of subrogation against the Purchaser their partners, directors, officers, agents, and employees.

GC.29.5 Workers' Compensation and Employer's Liability Insurance

The Contractor shall procure, and shall maintain during the life of this Contract, Workers' Compensation Insurance as required by workers' compensation laws.

The Contractor shall also be protected against claims for injury, disease, or death of employees which, for any reason, may not fall within the provisions of a workers' compensation law. The Employer's Liability Insurance shall contain the following limits of liability:

Bodily Injury by Accident	\$500,000 each accident
Bodily Injury by Disease	\$500,000 each employee
Bodily Injury by Disease	\$500,000 policy limit

GC.29.6 General Liability Insurance

This insurance shall be written per project on an "occurrence" policy form, including coverage for premises/operations, products/completed operations, blanket contractual liability, independent contractors and personal injury, with no exclusions for explosion, sudden and accidental pollution or an absolute or total pollution exclusion, collapse and underground perils. The commercial general liability policy shall also include a severability of interest clause and a cross liability clause in the event more than one entity is an additional insured under the liability policy.

SECTION 1 - GENERAL CONDITIONS

Limits of Insurance shall be as follows:

Each Occurrence Limit	\$1,000,000
Products/Completed Operations	\$2,000,000
General Aggregate Limit	\$2,000,000
Personal and Advertising Injury	\$1,000,000

GC.29.7 Automobile Liability Insurance

This insurance shall be written under a Business Auto Policy and shall protect the Contractor and Additional Insureds against claims arising from injuries to members of the public or damage to property of others arising from the use of automobiles whether such automobiles are owned, non-owned, or hired. Automobile insurance shall include Motor Carrier Endorsement Act MCS 90 and transportation pollution coverage if applicable. If work is being done near a railroad track, the 50' railroad right of way exclusion must be deleted.

Limit of Liability \$1,000,000 each accident and in the aggregate

GC.29.8 Umbrella Liability Policy

This insurance shall protect the Contractor and the Additional Insureds against all claims in excess of the limits provided under the employer's liability, automobile liability, and general liability policies. The liability limits of the umbrella liability policy shall be not less than \$2,000,000 per occurrence and in the aggregate. However, Purchaser reserves the right to require higher limits with respect to each project by written notification in advance of Contract award.

GC.29.9 Pollution Liability – Not Applicable

GC.29.10 Riggers Liability – Not Applicable

GC.29.11 Railroad Protective Liability – Not Applicable

GC.29.12 Professional Liability – Not Applicable

GC.29.13 Transportation Insurance – If Applicable

Contractor shall purchase inland marine coverage at the expense of Contractor on all equipment and materials, where Purchaser has an insurable interest. Insurance shall protect for Contractor and Purchaser from physical loss of equipment while loading, unloading, in transit to jobsite, and until equipment or materials have been installed or received by Purchaser.

GC.29.14 Property Insurance A.K.A. Builder's Risk - Not Applicable

GC.30 Indemnification

To the fullest extent permitted by laws and regulations, the Contractor shall defend, indemnify, and hold harmless the Purchaser, their officers, directors, members, consultants, agents, and employees from and against all third party claims, damages, losses, and expenses,

SECTION 1 - GENERAL CONDITIONS

reasonable attorney's fees and court and arbitration costs provided that Contractor is permitted to lead the defense of such claims for any injury, illness, or death of any person in connection with the Work to the extent directly caused by grossly negligent or deliberately malfeasant performance of the work by the Contractor, any sub-contractor, any person or organization directly employed by any of them to perform or furnish any of the work, or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a Party indemnified hereunder or arises by or is imposed by law and regulations.

In any and all claims against the Purchaser, or of any of their officers, directors, members, consultants, agents, or employees by any employee of the Contractor, any sub-contractor, any person or organization directly or indirectly employed by any of them to perform or furnish any of the work or anyone for whose acts any of them may be liable, this indemnification obligation shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for the Contractor or any such sub-contractor or other person or organization under workers' or workmen's compensation acts, disability benefit acts, or other employee benefit acts, nor shall this indemnification obligation be limited in any way by any limitation on the amount or type of insurance coverage provided by the Purchaser, the Contractor, or any of their sub-contractors.

GC.31 Release of Liability

Acceptance by the Contractor of the last payment constituting payment in full for the entire Contract price, as modified by any Change Orders, shall be a release to the Purchaser and every officer and agent thereof, from all claims and liability hereunder for anything done or furnished for, or relating to the work, or for any act or neglect of the Purchaser or of any person relating to or affecting the work.

GC.32 Claims for Labor and Materials

The Contractor shall indemnify and save harmless the Purchaser from all third-party claims for labor and materials furnished under this Contract. When requested by the Purchaser, the Contractor shall submit satisfactory evidence that all persons, firms, or corporations who have done work or furnished materials under this Contract, for which the Purchaser may become legally liable, have been fully paid or satisfactorily secured. In case such evidence is not furnished or is not satisfactory, an amount will be retained from money due the Contractor which, in addition to any other sums that may be retained, will be sufficient, in the opinion of the Purchaser, to liquidate all such claims. Such sum will be retained until the claims as aforesaid are fully settled or satisfactorily secured.

Before final acceptance of the work by the Purchaser, but only to the extent that such affidavit form is provided in writing and in advance by Engineer to Contractor, the Contractor shall submit to the Engineer in duplicate a notarized affidavit stating that all subcontractors, vendors, persons, or firms who have furnished labor or materials for the work have been fully paid and that all taxes have been paid. If a performance bond has been executed, a statement from the surety shall also be submitted consenting to the making of the final payment.

GC.33 Final Inspection

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When the work has been substantially completed and at a time mutually agreeable to the Purchaser and Contractor, the Purchaser will make a final inspection of the work as to the acceptability and completeness of the work.

GC.34 Payments

Payment will be based on the Contractor's progress payment which he will submit to the Purchaser for approval.

GC.35 Hazardous Materials

As required under Federal Hazardous Communications Standards and certain state and local laws, the Contractor shall provide Material Safety Data Sheets covering all hazardous materials furnished under or otherwise associated with the work under this Contract. The Contractor shall provide the Purchaser with either copies of the applicable Material Safety Data Sheets or copies of a document certifying that no Material Safety Data Sheets are required under any federal, state, or local law, regulation, statute, or ordinance in effect at the jobsite.

Hazardous materials are defined in the applicable statute which may use the terminology "toxic substances" instead of "hazardous materials." The Contractor is responsible for determining if any substance or material furnished, used, applied, or stored under this Contract is within the provisions of any applicable statute.

If the work under this Contract includes onsite construction or erection, the Contractor shall provide written notice of the presence of hazardous materials to local fire, medical, and law enforcement agencies as required with a copy of such notice to the Purchaser.

The Contractor shall provide labeling of hazardous materials and training of employees in the safe usage of such materials as required under any applicable federal, state, or local law, regulation, statute, or ordinance.

GC.36 Liquidated Damages

Time is critical to this Contract. If the Contractor is unable to meet the agreed upon completion dates, the Contractor shall immediately notify the Purchaser and confirm the notice in writing within ten (10) business days of the delaying event. The notice shall contain detailed information of the delay including Contractor's estimate of the duration of the delay, Contractor's estimate of the delay's impact to Contractor's schedule and Contractor's plan to mitigate the effects of the delay.

Contractor shall be excused for delays in completion of the work only in accordance with GC.18. In the event of any such delay, Contractor shall only be allowed an extension of the date of completion for a period of time reasonably necessary to overcome the effect of the delay. Contractor shall not be entitled to any extra compensation for such delay. Contractor shall promptly notify the Purchaser in writing, with confirmation receipt of notification,

The liquidated damages amount per calendar day specified in the proposal form will be assessed, not as a penalty but as predetermined and agreed liquidated damages. The

SECTION 1 - GENERAL CONDITIONS

Purchaser and Contractor specifically agree the per calendar day amount to be assessed as liquidated damages is fair and reasonable and not excessive. The Parties further agree that said per calendar day amount accurately reflect the anticipated loss and inconvenience to the public and lost revenue to or use by the Purchaser due to the project not being completed by the end of the project period or the end of the contract completion date.

The Purchaser shall have the right to deduct liquidated damages from any money in its hands, otherwise due, or to become due, to the Contractor; to submit invoice for payment; or to sue for and recover Liquidated Damages for damages for nonperformance of this Contract within the time stipulated.

The Liquidated Damages for this project will be \$1,000.00 per calendar day past the project completion date but shall not exceed 10% of the Contract price. Payment of the liquidated damages in clause GC.36 shall be Purchaser's sole and exclusive remedy in full and final satisfaction of Contractor's liability for any and all delay.

GC.37 Consequential Damages

Except for Supplier's third party obligations arising out of or liability for breach of Articles GC.26 and/or GC.30, Purchaser and Supplier will not be liable to each other for loss of profits, loss of use, loss of contracts, loss of revenue or business opportunity (including those which may be deemed to be direct, indirect or consequential), lost by reason of shutdown of facilities or inability to operate facilities at full capacity, wasted expenditure, cost of obtaining other means for performing the function of the products or services, cost of replacement power, cost of capital, claims of customers or indirect, incidental or consequential damages arising out of this Contract. This Section will not relieve Supplier of any obligation under GC.36.

GC.38 Limitation of Liability

With the exception of (a) indemnification stated in Article GC.30 and (b) the insurance coverages and limits set forth in Article GC.29, Supplier's total limit of liability on any claim, whether for breach of Contract, breach of warranty, tort, negligence, strict liability, or any other legal theory, for any loss or damage arising out of or connected to, or resulting from this Contract, shall be limited to the purchase price to be paid by Purchaser.

GC.39 Confidentiality

"Confidential Information" means the confidential or proprietary designs, know-how, processes, trade secrets, and other information owned or controlled by Purchaser, Engineer, or Supplier respectively. Supplier agrees to hold any Confidential Information received in the strictest confidence, shall only use the Confidential Information as necessary to perform the work. Purchaser agrees to hold any Confidential Information received in the strictest confidence and shall only use the confidential information as necessary for engineering, construction, start-up, commissioning, maintenance, or other purposes related to the project and disclosure to any third parties in the execution of these tasks shall be governed by similar nondisclosure restrictions. Each Party shall use the same degree of care as is used for its own information of similar importance, but no less than reasonable care. Notwithstanding any

SECTION 1 - GENERAL CONDITIONS

provision to the contrary, no title to intellectual property will transfer resulting from this Contract and the Work shall not be considered a “work for hire”.

GC.40 Work Eligibility Status

The Contractor is required and hereby agrees to use a federal immigration verification system to determine the work eligibility status of new employees physically performing services within the State of Nebraska. A federal immigration verification system means the electronic verification of the work authorization program authorized by the Illegal Immigration Reform and Immigrant Responsibility Act of 1996, 8 U.S.C. 1324a, known as the E-Verify Program, or an equivalent federal program designated by the United States Department of Homeland Security or other federal agency authorized to verify the work eligibility status of a newly hired employee.

GC.41 Fair Labor Standards

The Contractor agrees to comply with all current applicable State, Federal, and City fair labor standards in the execution of the Contract. Pursuant to the Title VI Non-Discrimination Program of the City of Hastings, Contractor agrees to comply with the provisions set forth by CITY’s Title VI Non-discrimination Program, if applicable. A copy of said provisions are as follows:

During the performance of this contract, the contractor, for itself, its assignees and successors in interest (hereinafter referred to as the "contractor") agrees as follows:

- (1) **Compliance with Regulations:** The contractor shall comply with the Regulation relative to nondiscrimination in Federally-assisted programs of the Department of Transportation (hereinafter, "DOT") Title 49, Code of Federal Regulations, Part 21, and the Federal Highway Administration (hereinafter “FHWA”) Title 23, Code of Federal Regulations, Part 200 as they may be amended from time to time, (hereinafter referred to as the Regulations), which are herein incorporated by reference and made a part of this contract.
- (2) **Nondiscrimination:** The Contractor, with regard to the work performed by it during the contract, shall not discriminate on the grounds of race, color, or national origin, sex, age, and disability/handicap in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor shall not participate either directly or indirectly in the discrimination prohibited by 49 CFR, section 21.5 of the Regulations, including employment practices when the contract covers a program set forth in Appendix B of the Regulations.
- (3) **Solicitations for Subcontractors, Including Procurements of Materials and Equipment:** In all solicitations either by competitive bidding or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials or leases of equipment, each potential subcontractor or supplier shall be notified by the contractor of the contractor's obligations under this contract and the Regulations relative to nondiscrimination on the grounds of race, color, or national origin, sex, age, and disability/handicap.

SECTION 1 - GENERAL CONDITIONS

- (4) Information and Reports: The contractor shall provide all information and reports required by the Regulations or directives issued pursuant thereto, and shall permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the (Recipient) or the FHWA to be pertinent to ascertain compliance with such Regulations, orders and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish this information the contractor shall so certify to the (Recipient), or the FHWA as appropriate, and shall set forth what efforts it has made to obtain the information.
- (5) Sanctions for Noncompliance: In the event of the contractor's noncompliance with the nondiscrimination provisions of this contract, the (Recipient) shall impose such contract sanctions as it or the FHWA may determine to be appropriate, including, but not limited to:
 - (a.) Withholding of payments to the contractor under the contract until the contractor complies, and/or
 - (b.) Cancellation, termination or suspension of the contract, in whole or in part.
- (6) Incorporation of Provisions: The contractor shall include the provisions of paragraphs (1) through (6) in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Regulations, or directives issued pursuant thereto.

The contractor shall take such action with respect to any subcontract or procurement as the (Recipient) or the FHWA may direct as a means of enforcing such provisions including sanctions for non-compliance: Provided, however, that, in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of such direction, the contractor may request the (Recipient) to enter into such litigation to protect the interests of the (Recipient), and, in addition, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

GC.42 Legal Venue and Applicable Law

Purchaser and the Contractor acknowledge that the Contract has been negotiated primarily in the U.S. state from which the Purchaser issues the Purchase Order. Therefore, the Contract and any dispute in relation thereto will be governed and construed according to the substantive laws of that state, without regard to any conflict of laws principles or theories. The application of the United Nations Convention on Contracts for the International Sale of Goods (1980) is hereby expressly excluded. The language of the Contract will be English and all communications thereunder or in relation thereto will be delivered in English unless otherwise agreed.

SECTION 3
GENERAL DESCRIPTION AND SCOPE OF WORK

SECTION 3-0 GENERAL DESCRIPTION AND SCOPE OF WORK

3.001 General. City of Hastings is accepting bids for the supply and installation of the Unit 1 Air Preheater Baskets at Whelan Energy Center, 4520 East South Street in Hastings, Nebraska.

3.002 Schedule. This shall include the completion of various activities in accordance with the milestone time periods and dates listed.

Activity	Schedule
Bid Opening	January 17, 2024
Anticipated Contract Award Date	January 23, 2024
Delivery Date for Spring Option	April 22, 2024
Delivery Date for Fall Option	September 20, 2024

3.003 Scope. The Contractor shall supply all three layers (cold end, intermediate, and hot end) of air heater baskets including all framing material, hardware and miscellaneous items needed as per Section 4 of this document.

3.004 Work included under these specifications. The following work will be completed by the Contractor:

1. Manufacturing of three layers of air heater baskets including all framing material, hardware and miscellaneous items needed as per Section 4 of this document.
2. Shipping to Jobsite inside weatherproof packaging
3. Provide Operation and Maintenance manuals including procedures for air heater basket installation and storage

3.005 Work not included under these specifications. The following work will be completed by City of Hastings:

1. Receiving, unloading, and onsite storage of air heater baskets.

3.006 Attachments. The following attachments are included:

- Drawing 7677.62.3400-610
- Coal Analysis Sheet
- Fly Ash Analysis Sheet

3.007 Progress Payments. The Bidder to include proposed payment schedule in the bid package.

SECTION 4 TECHNICAL

SECTION 4-0 TECHNICAL SPECIFICATIONS

4.001 General.

Whelan Energy Center Unit 1 (WEC1) is an 82 megawatt (MW), pulverized coal-fired generating plant located near Hastings, Nebraska. The Unit began commercial operation in 1981.

The site conditions are as follows:

Table 4.1 Site Conditions

Whelan Energy Center Unit #1:	
Location of Unit	1 mile east of Hastings, NE
Type of Facility	Electric Generation
Number of Steam Generators	One
Expected Loading Scenario (Base, Peaking, etc)	Cycling
Type of Unit (indoor / outdoor)	Indoor

Note 1: Indoor maximum temperature is the greater of the following resultant temperatures: Ambient temperatures plus 14F or the equipment temperature limit.

4.002 Design Criteria.

The Supplier shall supply three complete layers of new/unused air heater baskets for the cold end, intermediate, and hot end layers. These baskets shall comply with the air heater design criteria which can be seen below in Table 4.2. The heating element of the cold end air heater baskets shall be enameled and made from a decarburized enameling steel. Intermediate and hot end air heater baskets shall be carbon steel.

Table 4.2 Air Heater Design Criteria at Rated Capacity

Air Flow Entering Air Heater (lb/hr)	757,200
Air Flow Leaving Air Heater (lb/hr)	697,200
Flue Gas Flow Leaving Air Heater (lb/hr includes air leakage)	865,000
Total Air Heater Leakage (Air to Gas) (lb/hr)	60,000
Air Temp. Entering Air Heater (°F)	80
Air Temp. Exiting Air Heater (°F)	728
Flue Gas Temperature Entering Air Heater (°F)	810
Flue Gas Temperature Exiting Air Heater (°F) (excluding leakage)	285
Air Friction Losses through Air Heater (in of wc)	3.20
Gas Friction Losses through Air Heater (in of wc)	5.60

SECTION 4 TECHNICAL

4.003 Current Air Heater Basket and Air Preheater Data.

- Regenerative Type Air Heater
 - Manufacturer: The Air Preheater Co
 - Model/Type: 25-1/2-VI-80in
 - LAP: 3845
 - Shaft Orientation: Vertical

- Hot End Baskets
 - Brand: Arvos Ljungstrom
 - Depth: 44 inches
 - Material: 24-gauge Carbon Steel
 - Replaced: Yes, was originally 36” depth, 24-gauge, open hearth steel

- Intermediate Baskets
 - Brand: Arvos Ljungstrom
 - Depth: 26 inches
 - Material: 22-gauge Carbon Steel
 - Replaced: Yes, was originally 32” depth, 24-gauge, open hearth steel

- Cold End Baskets
 - Brand: Arvos Ljungstrom
 - Depth: 12 inches
 - Material: 22-gauge Low Carbon Steel Enameled
 - Replaced: Yes, was originally 12” depth, 18-gauge, low alloy corrosion resistant steel

4.004 Flue Gas Data.

Table 4.3 Flue Gas Data – See Note 1

	Units	Value
Boiler Manufacturer	--	Combustion Engineering
Type Firing	--	Tilting Tangential
<u>Original Design Basis</u>		
Vol. Flow Rate Flue	cfm	183,658
Flue Gas Mass Flow Rate	Lb/hr	865,000
Gas Temp. Average	°F	547
O ₂	% Vol.	5.60
CO ₂	% Vol.	13.92
N ₂	% Vol.	80.48
SO ₂	Lb/10 ⁶ Btu	1.09
NO _x	Lb/10 ⁶ Btu	0.40
Typical size of Particulate in flue gas		
- Less than 5 microns	%	29
- 5 to 10 microns	%	18
- 10 to 20 microns	%	18
- Greater than 20 microns	%	35

Note 1: Current Flue Gas Data could be slightly different with the recent addition of activated carbon and a new coal source. If Contractor has concerns, please advise and reports from CEMS can be provided.

SECTION 4 TECHNICAL

4.005 Fuel Data.

See Appendix A for the fuel design coal/ash analysis data.

4.006 Coal and Ash Analysis Data.

The Seller is to refer to Appendix A which includes the four (4) Powder River Basin Coals specified for this project (Black Thunder South, Eagle Butte, Caballo, and Rawhie). This information also includes trace elements for these coals.

4.007 Proposed Basket Data.

The following data table shall be provided by the Supplier as a Proposal submittal:

Table 4.4 Proposed Basket Data

Cold End Basket Supplier Supporting Data		Proposed Bid
	Total Number of Baskets	
	Weight per basket (lbs.)	
	Basket dimensions (in.)	
	Heating element material	
	Heating element sheet thickness (incl. enamel)	
Intermediate Basket Supplier Supporting Data		Proposed Bid
	Total Number of Baskets	
	Weight per basket (lbs.)	
	Basket dimensions (in.)	
	Heating element material	
	Heating element sheet thickness	
Hot End Basket Supplier Supporting Data		Proposed Bid
	Total Number of Baskets	
	Weight per basket (lbs.)	
	Basket dimensions (in.)	
	Heating element material	
	Heating element sheet thickness	

APPENDIX A

ATTACHMENTS

FOR

FORMAL CONTRACT NO. HU2024-01

AIR HEATER

BASKETS REPLACEMENT

FOR

WHELAN ENERGY CENTER, UNIT I

CITY OF HASTINGS

**ASTM C618 / AASHTO M295 Testing of
 Hastings
 Interim Report**

Sample Date: 44964
Sample Type: Random
Sample ID: Hopper 1A & 1B

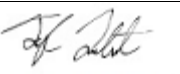
Report Date: 3/10/2023
MTRF ID: 280HU

Chemical Analysis	Results	ASTM Limit Class F / C	AASHTO Limit Class F / C
Silicon Dioxide (SiO ₂)	<u>41.43</u> %		
Aluminum Oxide (Al ₂ O ₃)	<u>16.14</u> %		
Iron Oxide (Fe ₂ O ₃)	<u>6.72</u> %		
Sum (SiO ₂ +Al ₂ O ₃ +Fe ₂ O ₃)	<u>64.29</u> %	50.0 min	50.0 min
Sulfur Trioxide (SO ₃)	<u>1.65</u> %	5.0 max	5.0 max
Calcium Oxide (CaO)	<u>23.31</u> %	18.0 max / >18.0	18.0 max / >18.0
Magnesium Oxide (MgO)	<u>5.32</u> %		
Sodium Oxide (Na ₂ O)	<u>1.38</u> %		
Potassium Oxide (K ₂ O)	<u>0.53</u> %		
Total Alkali (Sodium Oxide Equivalent)	<u>1.7</u> %		
Moisture	<u>0.05</u> %	3.0 max	3.0 max
Loss on Ignition	<u>0.72</u> %	6.0 max	5.0 max

Physical Analysis

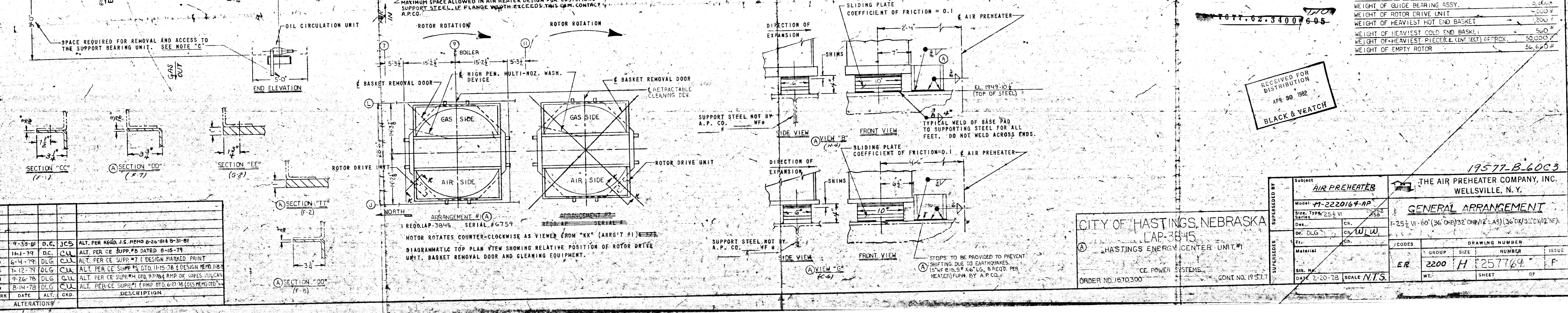
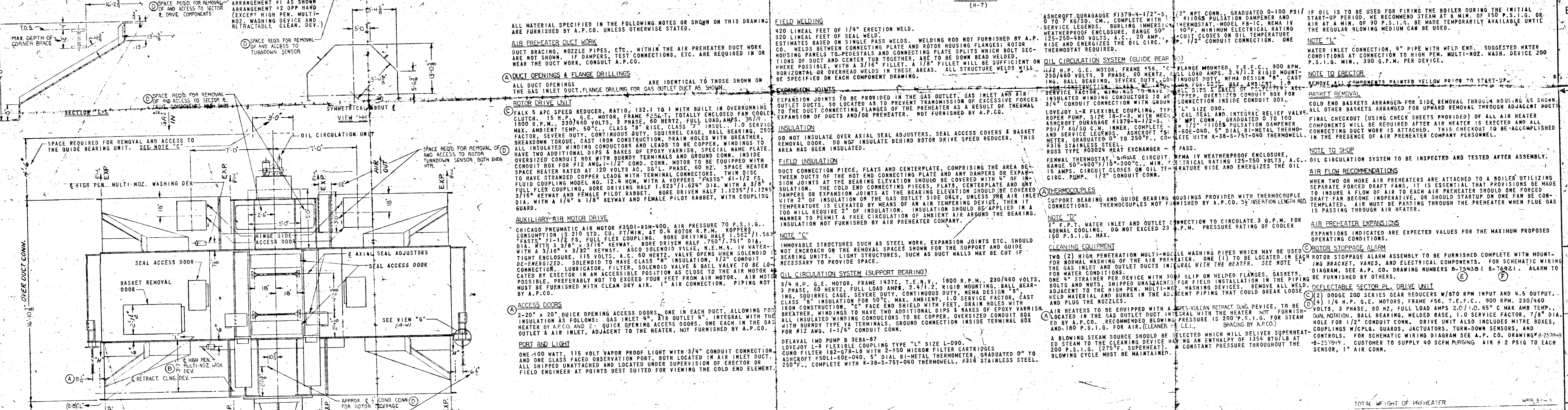
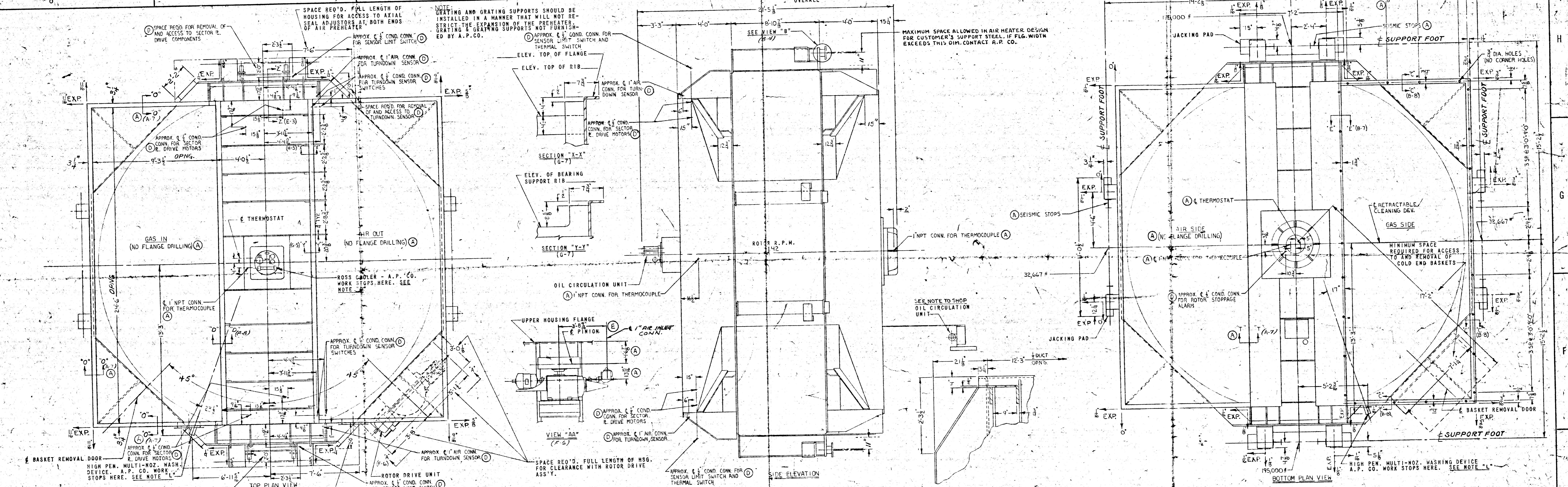
Fineness, % retained on 45-µm sieve	<u>22.09</u> %	34 max	34 max
Strength Activity Index - 7 or 28 day requirement			
7 day, % of control	<u>95</u> %	75 min	75 min
28 day, % of control	<u>Pending</u> %	75 min	75 min
Water Requirement, % control	<u>96</u> %	105 max	105 max
Density, ASTM C604	<u>2.63</u> g/cm ³		

The test data listed herein was generated by applicable ASTM methods. The reported results pertain only to the sample(s) or lot(s) tested. This report cannot be reproduced without permission from EM Resources LLC.



Tyler Lambert
QA Manager





NO.	DATE	BY	CHK.	DESCRIPTION
1	9-30-81	D.C.	JCS	ALT. PER REQ. J.S. MEMO 8-26-81 9-31-81
2	10-1-81	D.C.	JCS	ALT. PER CE SUPP. #8 DATED 8-15-81
3	6-4-79	DLG	CUL	ALT. PER CE SUPP. #7 (DESIGN MARKED PRINT)
4	1-12-79	DLG	CUL	ALT. PER CE SUPP. #5 DTD. 11-15-78 (DESIGN MEMO 11-8)
5	7-26-78	DLG	CUL	ALT. PER CE SUPP. #4 DTD. 9-7-78 (AMP OF JONES JULIAN)
6	8-14-78	DLG	CUL	ALT. PER CE SUPP. #1 (PMP STD. 6-77 MODIFIED)

19577-B.60C3
 THE AIR PREHEATER COMPANY, INC.
 WELLSVILLE, N. Y.
GENERAL ARRANGEMENT
 CITY OF HASTINGS, NEBRASKA
 LAR-3845
 HASTINGS ENERGY CENTER UNIT #1
 CE POWER SYSTEMS
 ORDER NO. 1870300
 CONT. NO. 19577

ARCTH

Averaged Typical Quality Specifications
 Mine: Arch Black Thunder Complex
 Period(s) Selected: 2022 Q1

Proximate Analysis % (As Received)	
Moisture	26.27
Ash	5.02
Sulfur	0.27
BTU	8,999
MAF BTU	13,099
GAR kcal/kg	5,000
NAR kcal/kg	4,658
Pounds SO ₂ /MM BTU	0.59
Pounds Ash/MM BTU	5.59
Ash to Sulfur Ratio	19.72
% Volatile Matter	31.11
% Fixed Carbon	37.59

Ash Mineral Analysis % Ignited Basis	
Silicon Dioxide	34.94
Aluminum Oxide	17.04
Titanium Oxide	1.27
Sulfur Trioxide	13.22
Calcium Oxide	19.47
Potassium Oxide	0.49
Magnesium Oxide	3.73
Sodium Oxide	1.08
Iron Oxide	5.70
Phosphorus Pentoxide	0.73
Manganese Dioxide	0.03
Barium Oxide	0.53
Strontium	0.28

Sulfur Forms % (Dry/Basis)	
Pyritic	0.05
Sulfate	-
Organic	0.32
Total	0.37

Water Soluble Alkalies % As Determined	
Potassium Oxide	0.005
Sodium Oxide	0.064

Ultimate Analysis % (Dry/Basis)	
Moisture	6.82
Ash	4.98
Hydrogen	70.50
Carbon	1.01
Nitrogen	0.37
Sulfur	16.32
Oxygen	

Ash Fusion Temperatures (°F)	
Reducing	
Initial	2,130
Softening	2,152
Hemispherical	2,182
Fluid	2,283
Oxidizing	
Initial	2,218
Softening	2,230
Hemispherical	2,247
Fluid	2,317

Other Information	
Hard Grove Grindability Index	58
Free Swelling Index	-
% Equilibrium Moisture T250 (°F)	25.41
	2.257
Base - Acid Ratio	0.57
% Acid	53.39
% Basic	30.53
SI/AL Ratio	2.06
Slagging Index	0.21

Trace Elements (PPM Dry Basis)	
Antimony	0.15
Arsenic	1.29
Barium	302.91
Beryllium	0.23
Boron	39.26
Bromine	1.00
Cadmium	0.09
Chlorine	6
Chromium	4.53
Cobalt	1.85
Copper	10.79
Flourine	65.26
Indium	-
Lead	2.58
Lithium	3.45
Manganese	12.85
Mercury	0.08
Molybdenum	0.73
Nickel	4.53
Selenium	0.83
Silver	0.03
Strontium	171.52
Tellurium	-
Thallium	0.07
Tin	0.23
Uranium	0.55
Vanadium	14.59
Zinc	8.74
Zirconium	12.45



Caballo

* 2022 through 2024 *

TYPICAL ANALYSIS

8400 Product

Seam Smith
Raw Product
State of Wyoming

Report Date 9/16/21

Proximate Analysis	As Received	Dry	Ash Fusion	
Moisture	29.8		Reducing Atmosphere	
Ash	5.6	8.0	Initial Deformation (I.D.)	2225
Volatile Matter	31.2	44.5	Softening (H=W)	2250
Fixed Carbon	33.4	47.5	Hemispherical (H=1/2W)	2275
BTU	8400	11966	Fluid	2330
Sulfur	0.35	0.50	Oxidizing Atmosphere	
MAFBTU		13003	Initial Deformation (I.D.)	2270
Lb. S/MMBTU		0.42	Softening (H=W)	2280
Lb. SO ₂ /MMBTU		0.83	Hemispherical (H=1/2W)	2285
Lb. Ash/MMBTU		6.7	Fluid	2295
Ultimate Analysis			Mineral Analysis Of Ash (Ignited Basis)	
Carbon		68.5	Silica (SiO ₂)	35.0
Hydrogen		4.8	Alumina (Al ₂ O ₃)	16.2
Nitrogen		1.0	Titania (TiO ₂)	1.3
Chlorine		<0.01		
Sulfur		0.5	Ferric Oxide (Fe ₂ O ₃)	5.3
Ash		8.0	Lime (CaO)	21.6
Oxygen		17.2	Magnesia (MgO)	3.9
Sulfur Forms			Potassium Oxide (K ₂ O)	0.4
Pyritic		0.04	Sodium Oxide (Na ₂ O)	1.5
Sulfate		0.01		
Organic		0.45	Phosphorous Pentoxide (P ₂ O ₅)	1.0
Water Soluble Alkalies			Sulfur Trioxide (SO ₃)	12.8
Sodium Oxide		0.073	Barium Oxide (BaO)	0.3
Potassium Oxide		0.004	Strontium Oxide (SrO)	0.6
			Manganese Dioxide (MnO ₂)	0.06
Equilibrium Moisture		29.0	Alkalies As Na₂O	0.14
Hardgrove Grindability Index @ 28.7% Moisture		75	Base/Acid Ratio	0.62
Mercury Hg ppm (Dry Whole Coal Basis)		0.11	Silica Value	53.2
lbs.Hg / trillion Btu's		9.19	Slag Viscosity @ T250	2240
Chlorine, ppm (Dry Whole Coal Basis)		13	Lb. Na₂O/MMBTU	0.10

All analyses are subject to revision due to additional coring, conditions specified in the coal supply agreement, actual operating conditions at time of mining, type of preparation at time of mining, or federal and state regulations. Analysis intended for informational purposes only.

Source Of Information	Proximate analysis based on April 2021 geologic model Remainder of analysis based on production samples and core data. 2022-2024 mineplan. 55% East Pit (Area 7)/45% West Pit (Areas 2-5)
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Eagle Specialty Materials

Type of Analysis: Historical Quality

Mine or Prospect: Eagle Butte

Seam: North/East Pits

Date: 4/28/21

Size: 3" X 0 Type: Raw

PROXIMATE ANALYSIS

	A.R.	Dry
% Moisture	29.63	
% Ash	4.98	7.08
% Volatile	31.16	44.28
% Fixed Carbon	34.23	48.64
HHV - Btu/lb	8,216	11,675
% Sulfur	0.44	0.63
MAF HHV - Btu/lb		12,565

ULTIMATE ANALYSIS

	A.R.	Dry
Moisture	29.63	
Carbon	47.46	67.44
Hydrogen	3.30	4.69
Nitrogen	0.68	0.97
Chlorine	<0.01	<0.01
Sulfur	0.44	0.63
Ash	4.98	7.08
Oxygen (Diff.)	11.67	16.58

MINERAL ANALYSIS

	Ash Basis	SO3 Free
Silica SiO2	28.88	34.28
Alumina Al2O3	14.36	17.05
Titania TiO2	1.05	1.25
Ferric oxide Fe2O3	4.83	5.73
Calcium oxide CaO	25.39	30.15
Magnesium oxide MgO	6.26	7.43
Potassium oxide K2O	0.23	0.27
Sodium oxide Na2O	1.43	1.70
Sulfur trioxide SO3	15.78	
Phos. Pent. P2O5	0.74	0.88
Strontium Oxide SrO	0.40	0.47
Barium Oxide BaO	0.58	0.69
Mang. Dioxide Mn3O4	0.05	0.06
Undetermined	0.02	0.04

FUSION TEMP. F

	Reducing	Oxidizing
Initial Deform.	2272	2308
Soften. (H=W)	2284	2321
Soften. (H=1/2W)	2295	2330
Fluid	2314	2344

FUSION TEMP. C

	Reducing	Oxidizing
Initial Deform.	1244	1264
Soften. (H=W)	1251	1272
Soften. (H=1/2W)	1257	1277
Fluid	1268	1284

SULFUR FORMS

	A.R.	Dry
% Pyritic sulfur	0.11	0.16
% Organic sulfur	0.33	0.47
% Sulfate sulfur	<0.01	<0.01

COMBUSTION PRODUCTS

	lb/MBtu
H2O	84.45
Ash	6.06
Sulfur	0.54
Sulfur Dioxide	1.07
Alkali As Na2O	0.096

MISCELLANEOUS

Hardgrove Grind.	61
% Equil. Moist.	29.63
Free Swell. Index	0
Sol. Alk. % Na2O,DCB	0.04
Sol. Alk. % K2O,DCB	0.004
% Sol. Alk. Metal	39
% Alk. as Na2O,DCB	0.11
Silica Value	44
Slag Vis. T250	2286 F 1252 C
Base/Acid Ratio	0.86
Dulong HHV - Btu/lb	8,062



Rawhide

* 2022 through 2024 *
TYPICAL ANALYSIS
8200 Product

Seam Roland and Smith
Raw Product
State of Wyoming

Report Date 9/16/21

Proximate Analysis	As Received	Dry	Ash Fusion	
Moisture	30.7		Reducing Atmosphere	
Ash	5.4	7.8	Initial Deformation (I.D.)	2125
Volatile Matter	30.7	44.3	Softening (H=W)	2145
Fixed Carbon	33.2	47.9	Hemispherical (H=1/2W)	2155
BTU	8200	11833	Fluid	2170
Sulfur	0.35	0.5	Oxidizing Atmosphere	
MAFBTU		12841	Initial Deformation (I.D.)	2185
Lb. S/MMBTU		0.43	Softening (H=W)	2205
Lb. SO2/MMBTU		0.85	Hemispherical (H=1/2W)	2215
Lb. Ash/MMBTU		6.6	Fluid	2230
Ultimate Analysis			Mineral Analysis Of Ash (Ignited Basis)	
Carbon		69.6	Silica (SiO2)	33.3
Hydrogen		4.8	Alumina (Al2O3)	14.3
Nitrogen		1.0	Titania (TiO2)	1.1
Chlorine		<0.01	Ferric Oxide (Fe2O3)	5.3
Sulfur		0.5	Lime (CaO)	22.9
Ash		7.8	Magnesia (MgO)	5.4
Oxygen		16.2	Potassium Oxide (K2O)	0.6
Sulfur Forms			Sodium Oxide (Na2O)	1.5
Pyritic		0.10	Phosphorous Pentoxide (P2O5)	0.7
Sulfate		0.01	Sulfur Trioxide (SO3)	13.7
Organic		0.40	Barium Oxide (BaO)	0.4
Water Soluble Alkalies			Strontium Oxide (SrO)	0.6
Sodium Oxide		0.076	Manganese Dioxide (MnO2)	0.04
Potassium Oxide		0.005	Alkalies As Na2O	0.15
Equilibrium Moisture			Base/Acid Ratio	0.73
		29.4	Silica Value	49.7
Hardgrove Grindability Index @ 29% Moisture			Slag Viscosity @ T250	2220
		79	Lb. Na2O/MMBTU	0.10
Mercury Hg ppm (Dry Whole Coal Basis)				
		0.08		
lbs.Hg / trillion Btu's				
		7.0		
Chlorine, ppm (Dry Whole Coal Basis)				
		9		

All analyses are subject to revision due to additional coring, conditions specified in the coal supply agreement, actual operating conditions at time of mining, type of preparation at time of mining, or federal and state regulations. Analysis intended for informational purposes only.

Source Of Information	Proximate analysis based on May 2021 geologic model Remainder of analysis based on production samples and core data. 2021 Budget blocks for CY 2022-2024
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