

**TOWN OF CASTLE ROCK
CONSTRUCTION CONTRACT**

(Wells CR228, CR-229 and CR-230)

THIS CONSTRUCTION CONTRACT (Contract) is made at the Town of Castle Rock, Colorado, between the Town of Castle Rock, Colorado (Town), a municipal corporation, 100 N. Wilcox Street, Castle Rock, Colorado 80104 and Hydro Resources – Rocky Mountain, Inc., a Delaware corporation (“Contractor”) 13027 County Road, Unit C, Fort Lupton, Colorado 80621

In consideration of these mutual covenants and conditions, the Town and Contractor agree as follows:

SCOPE OF WORK The Contractor shall execute the entire Work described in the Contract.

CONTRACT The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, written or oral representations and agreements. The Contract incorporates the following Contract Documents. In resolving inconsistencies among two or more of the Contract Documents, precedence will be given in the same order as enumerated.

LIST OF CONTRACT DOCUMENTS

The Contract Documents, except for Modifications issued after execution of this Contract, are:

1. Change Orders;
2. Notice to Proceed;
3. Construction Contract;
4. The following Addenda, if any:

Number	Date	Pages
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5. Special Conditions of the Contract:

Document	Title	Pages
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6. The following Specifications:

Town of Castle Rock Public Works Standards
Well Specifications

7. The following Drawings:
Preliminary Well Designs Tabular.pdf

8. Notice of Award;
9. Invitation to Bid;
10. Information and Instructions to Bidders;
11. Notice of Substantial Completion;
12. Notice of Construction Completion;
13. Proposal Forms, including Bid Schedules;
14. Performance, and Labor and Material Payment Bonds;
15. Performance Guarantee; and
16. Insurance Certificates.

CONTRACT PRICE. The Town shall pay the Contractor for performing the Work and the completion of the Project according to the Contract, subject to Change Orders as approved in writing by the Town, under the guidelines in the General Conditions. The Town will pay up to \$3,537,398.00 (Contract Price), to the Contractor, subject to full and satisfactory performance of the terms and conditions of the Contract. The Contract Price is provisional based on the quantities contained in the (Bid or Proposal) attached as **Exhibit 1**. The final Contract Price shall be adjusted to reflect actual quantities incorporated into the Work at the specified unit prices. The Town has appropriated money equal or in excess of the Contract Price for this work.

COMPLETION OF WORK. The Contractor must begin work covered by the Contract within 30 calendar days, and must complete work within 180-working days from and including the date of Notice to Proceed, according to the General Conditions. The Work should be completed by March 31, 2019.

LIQUIDATED DAMAGES. If the Contractor fails to complete the Work by the date set for completion in the Contract, or if the completion date is extended by a Change Order, by the date set in the Change Order, the Town may permit the Contractor to proceed, and in such case, may deduct the sum of \$500 for each day that the Work shall remain uncompleted from monies due or that may become due the Contractor. This sum is not a penalty but is a reasonable estimate of liquidated damages.

The parties agree that, under all of the circumstances, the daily basis and the amount set for liquidated damages is a reasonable and equitable estimate of all the Town's actual damages for delay. The Town expends additional personnel effort in administering the Contract or portions of the Work that are not completed on time, and has the cost of field and office engineering, inspecting, and interest on financing and such efforts and the costs thereof are impossible to accurately compute. In addition, some, if not all, citizens of Castle Rock incur personal inconvenience and lose confidence in their government as a result of public projects or parts of them not being completed on time, and the impact and damages, certainly serious in monetary as well as other terms are impossible to measure.

SERVICE OF NOTICES. Notices to the Town are given if sent by registered or certified mail, postage prepaid, to the following address:

TOWN OF CASTLE ROCK
Town Attorney
100 N. Wilcox Street
Castle Rock, CO 80104

INSURANCE PROVISIONS. The Contractor must not begin any work until the Contractor obtains, at the Contractor's own expense, all required insurance as specified in the General Conditions. Such insurance must have the approval of the Town of Castle Rock as to limits, form and amount.

RESPONSIBILITY FOR DAMAGE CLAIMS. The Contractor shall indemnify, save harmless, and defend the Town, its officers and employees, from and in all suits, actions or claims of any character brought because of: any injuries or damage received or sustained by any person, persons or property because of operations for the Town under the Contract; including but not limited to claims or amounts recovered from any infringements of patent, trademark, or copyright; or pollution or environmental liability. The Town may retain so much of the money due the Contractor under the Contract, as the Town considers necessary for such purpose. If no money is due, the Contractor's Surety may be held until such suits, actions, claims for injuries or damages have been settled. Money due the Contractor will not be withheld when the Contractor produces satisfactory evidence that the Contractor and the Town are adequately protected by public liability and property damage insurance.

The Contractor also agrees to pay the Town all expenses, including attorney's fees, incurred to enforce this Responsibility for Damage Claim clause.

Nothing in the **INSURANCE PROVISIONS of the General Conditions** shall limit the Contractor's responsibility for payment of claims, liabilities, damages, fines, penalties, and costs resulting from its performance or nonperformance under the Contract.

STATUS OF CONTRACTOR. The Contractor is performing all work under the Contract as an independent Contractor and not as an agent or employee of the Town. No employee or official of the Town will supervise the Contractor. The Contractor will not supervise any employee or official of the Town. The Contractor shall not represent that it is an employee or agent of the Town in any capacity. **The Contractor and its employees are not entitled to Town Workers' Compensation benefits and are solely responsible for federal and state income tax on money earned.** This is not an exclusive contract.

THIRD PARTY BENEFICIARIES. None of the terms or conditions in the Contract shall give or allow any claim, benefit, or right of action by any third person not a party to the Contract. Any person, except the Town or the Contractor, receiving services or benefits under the Contract is an incidental beneficiary only.

INTEGRATION. This contract integrates the entire understanding of the parties with respect to the matters set forth. No representations, agreements, covenants, warranties, or certifications, express or implied, shall exist as between the parties, except as specifically set forth in this Contract.

DEFINITIONS. The Definitions in the General Conditions apply to the entire Contract unless modified within a Contract Document.

Executed this _____ day of _____, 201__.

ATTEST:

TOWN OF CASTLE ROCK

Lisa Anderson, Town Clerk

Jennifer Green, Mayor

APPROVED AS TO FORM:

APPROVED AS TO CONTENT

Robert J. Slentz, Town Attorney

Mark Marlowe, Director of Castle Rock Water

CONTRACTOR:

HYDRO RESOURCES – ROCKY MOUNTAIN, INC.

By: _____

Title: _____

(Insert either the Corporate or Partnership Certificate, as appropriate)

**EXHIBIT 1
(PROPOSAL/BID)**



Hydro
resources - Rocky Mountain, Inc.

September 11, 2018

Town of Castle Rock
Attn: Heather Justus
175 Kellogg Court
Castle Rock CO 80109

Re: Lantern Well Pricing Submittal

Heather:

Thank you for the opportunity to submit pricing for the Lantern Well Drilling Project. We look forward to working with Castle Rock and Leonard Rice again. Enclosed, you will find pricing for the three wells as well as the mandatory alternate items. Please note that we have not included the construction of the pad in our numbers. We can negotiate this at a later date or possibly Castle Rock construct the pad. The GESC planning is also a "best guess" once we have the exact dimension of the pad we may need to adjust this item. As of now, we know the general location of the wells, but not the exact location; therefore, estimating a cost was difficult. Please let me know if you have any questions regarding the pricing.

Once again, we look forward to working with you and will endeavor to provide you with the best quality of work possible.

Respectfully,

M. John Taylor
Regional Manager
Office – 303-857-7544
Mobile – 303-945-5752
jtaylor@hydroresources.com

Please see below for equipment summary and pump curves.



Hydro

resources - Rocky Mountain, Inc.

#228 – Arapahoe Well Pumping Equipment

- lea HC20000-22 Stg Centrilift Subm. Pump (650GPM@1500ft)
(Final TDH, set depths, to be determined upon completion of drilling and Testing)
- lea 450HP Centrilift Motor 2300V/93A
- lea 675 Seal Section HSB3DB SB/SB HL w//562 Base (Potable Water
- lea Motor Lead w/factory splice
- lea 12" Baker Deep Well Pitless Adpt. 5.5ft bury 6 5/8" Column/8" Discharge w/4-Restraints
- lea 6 5/8" DW Flowmatic Check Valve w/ko
- lea 304SS Motor Cooling Shroud
- ±1930ft #1R w/grnd. Subm. Cable 5kv Galv. Armored (150ft to stepup transformer)

- ±ft1780 6 5/8" 304SS Column Pipe 8Round w/304SS Coupling
- ±1780ft 1 ¼" PVC Motor Tube
- ±1780ft ¼" Dbl Nylon Airline
- ±1780ft 500PSI Transducer w/SS Cable
- (Lot) Service Supplies - Tape, banding, HTH, etc.

#228 Electrical Gear

- lea VSD 4500-4ADV, 6P 520Kva Centrilift Nema 4 (Supply Only)
- lea 500kva MTE Inpute Harmonic Filter (Supply Only) 5% THD
- lea 400Kva Southwest Electric Stepup Transformer (Supply Only)

#229 – Denver Well Pumping Equipment

- lea HC7800-22 Stg Centrilift Subm. Pump (300GPM@1500ft)
(Final TDH, set depths, to be determined upon completion of drilling and Testing)
- lea 125HP Centrilift Motor 2300V/41A
- lea 675 Seal Section GSB3 DB HL w//562 Base
- lea Motor Lead w/factory splice
- lea 12" Baker Deep Well Pitless Adpt. 5.5ft bury 6 5/8" Column/8" Discharge w/4-Restraints
- lea 5 9/16" DW Flowmatic Check Valve w/ko
- lea 304SS Motor Cooling Shroud
- ±ft1080 5 9/16" 304SS Column Pipe 8Round w/304SS Coupling
- ±1230ft #4R w/grnd Subm. Cable 5kv Galv. Armored
- ±1080ft 1 ¼" PVC Motor Tube
- ±1080ft ¼" Dbl Nylon Airline
- ±1080ft 500PSI Transducer w/SS Cable
- (Lot) Service Supplies - Tape, banding, HTH, etc.



Hydro

resources - Rocky Mountain, Inc.

#228 Electrical Gear

- 1ea VSD 2250-4ADV, 6P 520Kva Centrilift Nema 4 (Supply Only)
- 1ea MTE Impute Harmonic Filter (Supply Only) 5% THD
- 1ea 160Kva Southwest Electric Stepup Transformer (Supply Only)

230 - Dawson Well Pumping Equipment

- 1ea 85S75-5 Stg Grundfos Subm. Pump (75GPM@220ft)
(Final TDH, set depths, to be determined upon completion of drilling and Testing)
- 1ea 7.5HP Hitachi Subm. Motor 460V 3-ph
- 1ea 10" Baker Pitless Adpt. 5ft bury
- 1ea 2.5" Flowmatic SS Check Valve w/ko
- 1ea PVC Motor Cooling Shroud
- ±ft260 2.5" 304SS NPT T&C Drop Pipe
- ±260ft #10AWG 3-C w/grnd. Flat Subm. Cable
- ±260ft 1 ¼" PVC Motor Tube
- ±260ft ¼" Dbl Nylon Airline
- ±260ft 100PSI Transducer Std Poly Cable
- (Lot) Service Supplies - Tape, banding, HTH, etc.

#230 Electrical Gear

- 1ea 10HP SVX9000 Nema 4 VFD Eaton/Cutler Hammer (Supply Only)
- 1ea 10HP TCI HGP Harmonics Filter (Supply Only) 5% THD
- 1ea 10HP TCI DV/DT Output Filter (Supply Only)

BID SCHEDULE
Arapahoe Well

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	EXTENSION
1	Wellhead Completion	L.S.	1	\$ <u>1000-</u>	\$ <u>1000-</u>
2	Mobilization and Cleanup	L.S.	1	\$ <u>170000-</u>	\$ <u>170000-</u>
3	Drilling 20.0-inch Diameter	L.F.	1840	\$ <u>108-</u>	\$ <u>198720-</u>
4	Casing				
	a. 30-inch Diameter Surface Conductor including drilling	L.F.	40	\$ <u>395-</u>	\$ <u>15800-</u>
	b. 12-inch Diameter Carbon Steel	L.F.	1100	\$ <u>79-</u>	\$ <u>86900-</u>
	c. 12-inch Diameter Stainless Steel	L.F.	235	\$ <u>260-</u>	\$ <u>61100-</u>
5	Well Screen Assembly	L.F.	495	\$ <u>213-</u>	\$ <u>105435-</u>
6	Gravel Pack				
	a. 8-12 Silica Sand	L.F.	150	\$ <u>32-</u>	\$ <u>4800-</u>
	b. Fine Silica Sand Plug	L.F.	10	\$ <u>84-</u>	\$ <u>840-</u>
	c. 4508R Glass Beads (10-8)	M.T.	36	\$ <u>2844-</u>	\$ <u>102384-</u>
7	Grout Seal	L.F.	1165	\$ <u>48-</u>	\$ <u>55920-</u>
8	Well Development				
	a. Circulation, airlift, brush/bail	HR.	52	\$ <u>589-</u>	\$ <u>30628-</u>
	b. Jetting	HR.	30	\$ <u>510-</u>	\$ <u>15300-</u>
9	Geophysical Logging				
	a. resistivity, single point resistance, natural gamma, and caliper, at a minimum)	L.S.	1	\$ <u>6968-</u>	\$ <u>6968-</u>
	b. Nuclear Magnetic Resonance Logging	L.S.	1	\$ <u>18145-</u>	\$ <u>18145-</u>
10	Well Pumping Test Tests Supply & Install Equipment	L.S.	1	\$ <u>30845-</u>	\$ <u>30845-</u>
	a. 8 - hour Step Test	L.S.	1	\$ <u>2400-</u>	\$ <u>2400-</u>
	b. 72- hour Pumping test	L.S.	1	\$ <u>21600-</u>	\$ <u>21600-</u>
11	Disinfection	L.S.	1	\$ <u>1370-</u>	\$ <u>1370-</u>
12	Video Survey	L.S.	1	\$ <u>1590-</u>	\$ <u>1590-</u>
13	Video Survey - Additional Pass	L.S.	1	\$ <u>1590-</u>	\$ <u>1590-</u>
15	Provide Submersible Pump & Equip (Include description)	L.S.	1	\$ <u>254145-</u>	\$ <u>254145-</u>
16	Nominal 7 inch Stainless Steel Pump Column Drop Pipe	L.S.	1	\$ <u>318085-</u>	\$ <u>318085-</u>
17	Install Submersible Pump & Equipment	L.S.	1	\$ <u>15305-</u>	\$ <u>15305-</u>
18	Adjustable Frequency Drives Include description	L.S.	1	\$ <u>152120-</u>	\$ <u>152120-</u>

DRILLING TOTAL (IN WORDS)

One Million six hundred seventy two thousand
Nine hundred ninety dollars & no/100 Dollars

\$1,672,990.00

BID SCHEDULE
Denver Well

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	EXTENSION
1	Wellhead Completion	L.S.	1	\$ <u>1,000⁻</u>	\$ <u>1,000⁻</u>
2	Mobilization and Cleanup	L.S.	1	\$ <u>145248⁻</u>	\$ <u>145248⁻</u>
3	Drilling 20.0-inch Diameter	L.F.	1117	\$ <u>108⁻</u>	\$ <u>120636⁻</u>
4	Casing				
	a. 30-inch Diameter Surface Conductor including drilling	L.F.	40	\$ <u>395⁻</u>	\$ <u>15800⁻</u>
	b. 12-inch Diameter Carbon Steel	L.F.	325	\$ <u>79⁻</u>	\$ <u>25675⁻</u>
	c. 12-inch Diameter Stainless Steel	L.F.	415	\$ <u>260⁻</u>	\$ <u>107900⁻</u>
5	Well Screen Assembly	L.F.	380	\$ <u>210⁻</u>	\$ <u>79800⁻</u>
6	Gravel Pack				
	a. 8-12 Silica Sand	L.F.	375	\$ <u>31⁻</u>	\$ <u>11625⁻</u>
	b. Fine Silica Sand Plug	L.F.	10	\$ <u>84⁻</u>	\$ <u>840⁻</u>
	c. 4508R Glass Beads (10-8)	M.T.	28	\$ <u>2844⁻</u>	\$ <u>79632⁻</u>
7	Grout Seal	L.F.	325	\$ <u>53⁻</u>	\$ <u>17225⁻</u>
8	Well Development				
	a. Circulation, airlift, brush/bail	HR.	52	\$ <u>576⁻</u>	\$ <u>29952⁻</u>
	b. Jetting	HR.	30	\$ <u>510⁻</u>	\$ <u>15300⁻</u>
9	Geophysical Logging (resistivity, single point resistance, natural gamma, and caliper, at a minimum)	L.S.	1	\$ <u>6968⁻</u>	\$ <u>6968⁻</u>
10	Well Pumping Test Tests Supply & Install Equipment	L.S.		\$ <u>28345⁻</u>	\$ <u>28345⁻</u>
	a. 8 - hour Step Test	L.S.	1	\$ <u>2160⁻</u>	\$ <u>2160⁻</u>
	b. 72- hour Pumping test	L.S.	1	\$ <u>19440⁻</u>	\$ <u>19440⁻</u>
11	Disinfection	L.S.	1	\$ <u>1045⁻</u>	\$ <u>1045⁻</u>
12	Video Survey	L.S.	1	\$ <u>1355⁻</u>	\$ <u>1355⁻</u>
13	Video Survey - Additional Pass	L.S.	1	\$ <u>1355⁻</u>	\$ <u>1355⁻</u>
15	Provide Submersible Pump & Equip (Include description)	L.S.	1	\$ <u>177520⁻</u>	\$ <u>177520⁻</u>
16	Nominal 5 inch Stainless Steel Pump Column Drop Pipe	L.S.	1	\$ <u>156710⁻</u>	\$ <u>156710⁻</u>
17	Install Submersible Pump & Equipment	L.S.	1	\$ <u>14160⁻</u>	\$ <u>14160⁻</u>
18	Adjustable Frequency Drives Include description	L.S.	1	\$ <u>97805⁻</u>	\$ <u>97805⁻</u>

DRILLING TOTAL (IN WORDS)

One Million one hundred fifty seven thousand
four hundred ninety six & no/100 Dollars

\$1,157,496.00

BID SCHEDULE
Dawson Well

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	EXTENSION
1	Wellhead Completion	L.S.	1	\$ <u>1000-</u>	\$ <u>1000-</u>
2	Mobilization and Cleanup	L.S.	1	\$ <u>104984</u>	\$ <u>104984-</u>
3	Drilling 17.5-inch Diameter	L.F.	294	\$ <u>168-</u>	\$ <u>49392-</u>
4	Casing				
	a. 30-inch Diameter Surface Conductor including drilling	L.F.	40	\$ <u>346-</u>	\$ <u>13840-</u>
	b. 10-inch Diameter Carbon Steel	L.F.	145	\$ <u>60</u>	\$ <u>8700-</u>
	c. 10-inch Diameter Stainless Steel	L.F.	55	\$ <u>259-</u>	\$ <u>14245-</u>
5	Well Screen Assembly	L.F.	100	\$ <u>137-</u>	\$ <u>13700-</u>
6	Gravel Pack				
	a. Fine Silica Sand Plug	L.F.	10	\$ <u>39-</u>	\$ <u>390-</u>
	b. 4508R Glass Beads (10-8)	M.T.	8	\$ <u>2844-</u>	\$ <u>22752-</u>
7	Grout Seal	L.F.	1165	\$ <u>9-</u>	\$ <u>10485-</u>
8	Well Development				
	a. Circulation, airlift, brush/bail	HR.	52	\$ <u>556-</u>	\$ <u>28912-</u>
	b. Jetting	HR.	8	\$ <u>680-</u>	\$ <u>5440-</u>
9	Geophysical Logging (resistivity, single point resistance, natural gamma, and caliper, at a minimum)	L.S.	1	\$ <u>6880-</u>	\$ <u>6880-</u>
10	Well Pumping Test Tests Supply & Install Equipment	L.S.	1	\$ <u>13810-</u>	\$ <u>13810-</u>
	a. 8 - hour Step Test	L.S.	1	\$ <u>1360-</u>	\$ <u>1360-</u>
	b. 72- hour Pumping test	L.S.	1	\$ <u>12240-</u>	\$ <u>12,240-</u>
11	Disinfection	L.S.	1	\$ <u>510-</u>	\$ <u>510-</u>
12	Video Survey	L.S.	1	\$ <u>750-</u>	\$ <u>750-</u>
13	Video Survey - Additional Pass	L.S.	1	\$ <u>750-</u>	\$ <u>750-</u>
15	Provide Submersible Pump & Equip (Include description)	L.S.	1	\$ <u>28025-</u>	\$ <u>28025-</u>
16	Nominal 2.5 inch Stainless Steel Pump Column Drop Pipe	L.S.	1	\$ <u>15320-</u>	\$ <u>15320-</u>
17	Install Submersible Pump & Equipment	L.S.	1	\$ <u>11040-</u>	\$ <u>11040-</u>
18	Adjustable Frequency Drives Include description	L.S.	1	\$ <u>12805-</u>	\$ <u>12805-</u>

DRILLING TOTAL (IN WORDS)

Three hundred seventy seven thousand three
hundred thirty \$ no/100 DollarsThree hundred seventy seven thousand three

\$377,330.00

BID SCHEDULE
MANDATORY ALTERNATE ITEMS (Must be bid)

<u>DESCRIPTION</u>	<u>UNIT</u>	<u>QUANTITY</u>	<u>UNIT PRICE</u>	<u>EXTENSION</u>
GESC Permitting and Implementation	L.S.	1	\$ <u>10,000-</u>	\$ <u>10,000-</u>
Drilling Mud/Fluids Removal	L.S.	1	\$ <u>26015-</u>	\$ <u>26015-</u>
Drilling Cuttings Removal	L.S.	1	\$ <u>15345-</u>	\$ <u>15345-</u>
Drilling Hourly Rate (Lost Circulation)	HR	1	\$ <u>600-</u>	\$ <u>600-</u>
Drilling Hourly Rate (Slow Penetration Rate)	HR	1	\$ <u>600-</u>	\$ <u>600-</u>
Road Maintenance (Track pad, road sweeping, mud removal)	L.S.	1	\$ <u>10,000-</u>	\$ <u>10000-</u>
Step up Transformer	L.S.	1	\$ <u>48490-</u>	\$ <u>48490-</u>
One hour coordination meetings	HR	1	\$ <u>250-</u>	\$ <u>250-</u>
Water Supply provide backflow meter Allowance	Allowance	1	\$ <u>1000-</u>	\$ <u>1000-</u>
Startup for Arapahoe, Denver, and Dawson Wells at Facility Completion	L.S.	1	\$ <u>4935-</u>	\$ <u>4935-</u>
Sound Mitigation <i>Include description</i>	L.S.	1	\$ <u>84677-</u>	\$ <u>84677-</u>
<u>Arapahoe Well Extended Conductor Casing Alternative</u>				
Drilling 26-inch Diameter	L.F.	325	\$ <u>200-</u>	\$ <u>65,000-</u>
Casing (24-inch)	L.F.	325	\$ <u>137-</u>	\$ <u>44525-</u>
<u>Denver Well Extended Conductor Casing Alternative</u>				
Drilling 26-inch Diameter	L.F.	325	\$ <u>200</u>	\$ <u>65000-</u>
Casing (24-inch)	L.F.	325	\$ <u>137-</u>	\$ <u>44525-</u>
<u>Arapahoe Well Replace Silica Sand Gravel Pack with Glass Beads</u>				
Replace 150 L.F. Silica Sand with 4508R Glass Beads (10-8)	M.T.	11	\$ <u>2844-</u>	\$ <u>31284-</u>

Denver Well Replace Silica Sand Gravel Pack with Glass Beads

Replace 385 L.F. Silica Sand with 4508R

Glass Beads (10-8) M.T. 27 \$ 2844- \$ ~~76788-~~ ¹⁸⁶

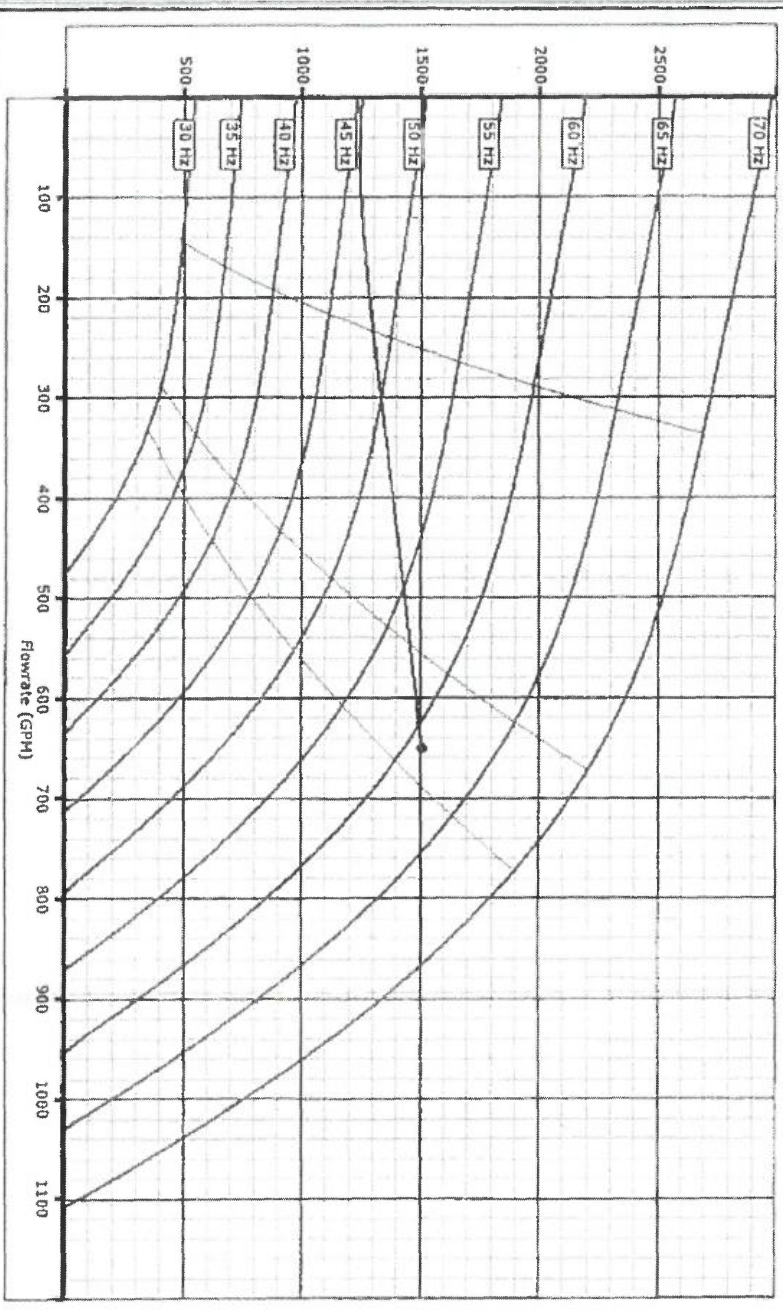
Nuclear Magnetic Resonance Logging L.S. 1 \$ 18145- \$ 18145-

MANDATORY ALTERNATIVE ITEMS TOTAL (IN WORDS)

Five hundred forty seven thousand one hundred seventy nine & no/100 Dollars

~~\$547,179.00~~

\$329,582



675 / HC20000 / CENTRILIFT
 GIP=0% Mixed flow Shaft fixed
 No comments

Design Point

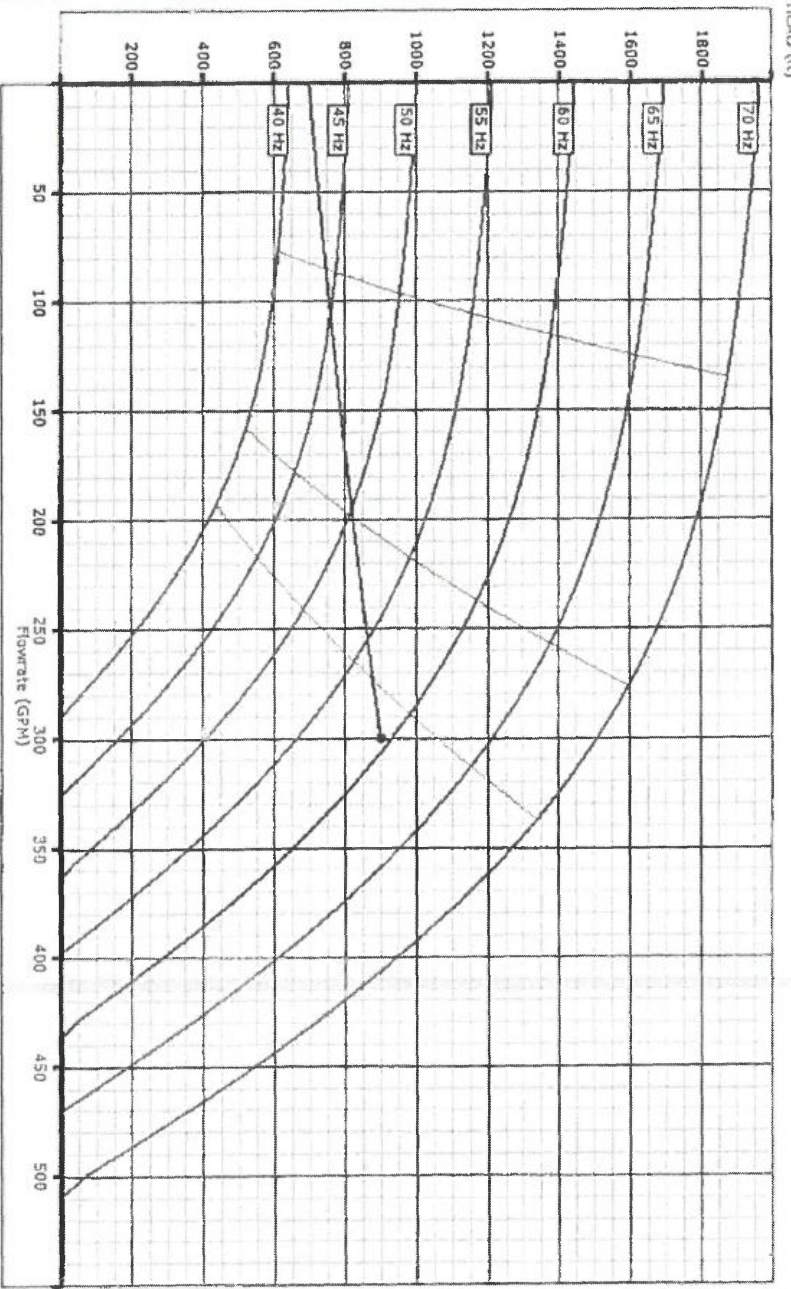
#Stages 22
 Flow 659.0 GPM 60HzRPM
 Head 1509 ft 3457
 BHP 328.0 HP SG 0.988
 FRCA 61.0 Hz

Modifiers

Flow 1.0 Head 1.0 BHP 1.0

Other Computed Results

PrincEff 74.68 %
 GIP 0 %
 Seal losses 3.613 HP
 Meshp0 326.1 HP
 RPM 3516 r.p.m
 Std SHt 40.82 %
 HS SHt 26.12 %
 NPSHr 51.3 ft



Ref: GIP=0% Moved Flow Shaft: fixed

Design Point

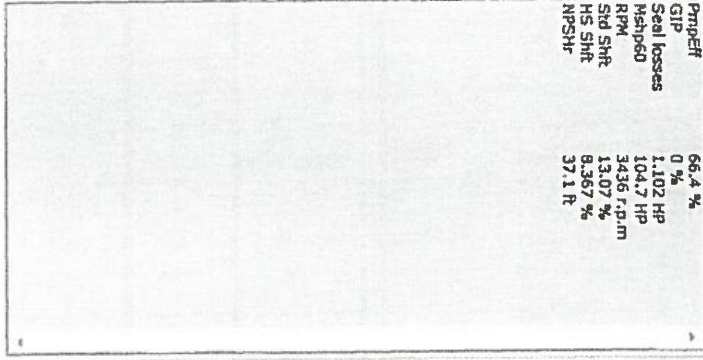
Flow	14	60Hz RPM
Flow	300.0	GPM
Head	901.7	R
BHP	102.7	HP
SG	0.999	
Speed	59.4	Hz

Modifiers

Flow 1.0 Head 1.0 BHP 1.0

Other Computed Results

PrmpEff	66.4 %
GIP	0 %
Seal losses	1.102 HP
Mshp60	104.7 HP
RPM	3436 r.p.m
Std SHR	13.07 %
HS SHR	8.367 %
NPSHR	37.1 R



Product name: 85S75-5
Product Number: 12BG3605
EAN number: 5700391316098
Technical:
Speed for pump data: 3450 rpm
Rated flow: 83,66 US GPM
Flowrange: 7.04 .. 118 US GPM
Rated head: 194 ft
Type of motor shaft seal: CER/CARBON
Approvals on nameplate: CE,GOST2,CSA
Pump Number: 12BG0005
Stages: 5
Model: A
Valve: pump with built-in non-return valve

Materials:
Material, pump: Stainless steel
 1.4301 DIN W.-Nr.
 304 AISI
Material, impeller: Stainless steel
 1.4301 DIN W.-Nr.
 304 AISI
Material, motor: Stainless steel
 1.4301 DIN W.-Nr.
 304 AISI

Installation:
Maximum ambient pressure: 870 psi
Size, pump outlet: 3" NPT
Motor diameter: 6 inch
Minimum borehole diameter: 6" in

Electrical data:
Motor type: MS6000
Applic. motor: NEMA
P2: 7.5 HP
KVA code: G
Mains frequency: 60 Hz
Rated voltage: 3 x 440-460 V
Starting method: direct-on-line
Starter: 1
Service factor: 1,15
Rated current: 13,2-13,2 A
I MAX: 13.2 A
Starting current: 59 A
Cos phi - power factor: 0,82-0,79
Rated speed: 3450-3460 rpm
Axial load max: 992 lb
Full load motor efficiency: 80,5 %
Enclosure class (IEC 34-5): IP58
Insulation class (IEC 85): F
Motor protection: NONE
Thermal protec: external
Built-in temp. transmitter: yes
Motor Number: 78355511

Controls:
Heather: K56

Others:
Sales region: Namreg

