

ITEM-1: subsurface sucker rod pump according to A.P.I specification 11 AN QTY 35 set

With designation as the following:

-Type (30-250-R-W-A-M)

-Barrel length: 24 ft

-Plunger length : 4 ft

ITEM-2: Seating nipple mechanical upper lock with 3 1/2" - EUE - 8 RD QTY= 10 Pcs

At two ends.

ITEM-3: Spare parts for pumps

| Item | Description | QTY |
|------|------------------------------------------------|-------------|
| | | 30-250-RWAM |
| 1 | Barrel | 10 |
| 2 | Bushing valve rod API sucker rod pin thread | 15 |
| 3 | Bushing Barrel cage | 10 |
| 4 | Cage top plunger | 10 |
| 5 | Cage, closed plunger | 10 |
| 6 | Cage, closed barrel | 10 |
| 7 | Guide valve rod | 10 |
| 8 | Nipple , seating , Mechanical Top lock: | |
| | Upper half shoe (8 RD -10- RD) | 5+5 |
| | Seat lock | 25 |
| | Lower half shoe (8 RD -10- RD) | 5+5 |
| 9 | Plug seat | 10 |
| 10 | Plunger grooved | 10 |
| 11 | Rod valve | 10 |
| 12 | Seating assembly , Mechanical Top lock: | |
| | Mandrel top lock | 10 |
| | Seating ring | 10 |
| | Spring , top lock | 25 |
| | Adapter bushing | 25 |
| 13 | Traveling valve (ball and seat) | 25 |
| 14 | Standing valve (ball and seat) | 25 |
| 15 | Nut lock | 5 |

NOTES:

- 1- The pumps should be equipped with bushing valve rod upper end 7/8" - 10 R.D thread A.P.I 5 B .
- 2- The pumps should be designed for Max . Working pressure not less than 220 Bar .
- 3- the pumps should be designed for resistant .
 - A – extreme corrosion for salt water ,H₂S and CO₂ according to (NACE std MR -01-76) .
 - B - extreme abrasion .
- 4- Barrel material : chrome plat on 4/6 chrome steel.
- 5- Plunger material : spray metal with nickel /copper alloy ends (grooved)
- 6- (BALL AND SEAT) material : tungsten carbide .
- 7- Valve rods and fitting material :stainless steel .
- 8- The bidder shall provide necessary catalogues for operation , maintenance and Spare the shipment.
- 9- material should be new not renew .
- 10- Valid API 11 AX , ISO certificate should be enclosed with the offer .
- 11- Chemical analysis for material with shipment.
- 12- mentioning the country of origin and the manufacturer with the technical offer. Submit a certificate of manufacture from the manufacture upon supply.
- 13- Providing technical sheet and catalogue with order materials along with technical offer .
- 14-Supmit original certificate at delivery .
- 15-provide the customs Declaration With shipment .
- 16- Providing operating and maintenance catalog for supply.
- 17- All a/m certificates , procedures and report must be done under witness of an international neutral controlling company.

- Chemical analysis as following :

A-Formation Water analysis :

PH = 10

CL- = 56800 mg/L

HCO₃ - = 183 mg/L

So₄ -- = 500 mg/L

Ca⁺⁺ = 8000 mg/L

Mg ⁺⁺ = 3136 mg/L

K + Na + = 61644 mg/L

H₂S = 400 mg/L

γ = 1.05 gf/cm³

B -Associated gas analysis :

H₂S = 2 by volume

Co₂ = 2 by volume

C -Crude oil analysis :

Density at 20 C = 0.8884

API = 27.10

ASPHALT (wt %) = 2

N-PARAFFEN (wt %) = 10.95

ISO- PARAFFEN (wt %) = 41.21

TOTAL- PARAFFEN (wt %) = 52.16

RESINE (wt %) = 6.21

AROMAT (wt %) = 16.10

RESIDUE Carbon (wt %) = 2.2

Sulphur (wt %) = 1.15

Viscosity at 20 C = 56.9 c. S

Viscosity at 40 C = 29.8 c. S

Viscosity at 60 C = 15.9 c. S

