

 NISOC		<p>نگهداشت و افزایش تولید میدان نفتی بینک</p> <p>سطح الارض</p> <p>احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک</p>									
شماره پیمان: ۰۵۳-۰۷۳-۹۱۸۴		MECHANICAL DATA SHEETS FOR SLUG PUMPS							شماره صفحه: ۱ از ۱۰		
		پروژه	بسته کاری	صادر کننده	تهیه کننده	رشته	نوع مدرک	سریال	نسخه		
		BK	GCS	PEDCO	120	ME	DT	0019	D03		

طرح نگهداشت و افزایش تولید ۲۷ مخزن

MECHANICAL DATA SHEETS FOR SLUG PUMPS
(P-2101 A/B)
 نگهداشت و افزایش تولید میدان نفتی بینک

D03	MAY. 2023	AFC	H. Adineh	M. Fakharian	A.M.Mohseni	
D02	DEC. 2022	IFA	H. Adineh	M. Fakharian	M. Mehrshad	
D01	JAN. 2022	IFA	H. Adineh	M. Fakharian	M. Mehrshad	
D00	DEC. 2021	IFC	H. Adineh	M. Fakharian	M. Mehrshad	
Rev.	Date	Purpose of Issue / Status	Prepared by:	Checked by:	Approved by:	CLIENT Approval

Class: 1 CLIENT Doc. Number: F0Z-708850

status:

- IDC: Inter-Discipline Check
- IFC: Issued For Comment
- IFA: Issued For Approval
- AFD: Approved For Design
- AFC: Approved For Construction
- AFP: Approved For Purchase
- AFQ: Approved For Quotation
- IFI: Issued For Information
- AB-R: As-Built for CLIENT Review
- AB-A: As-Built -Approved



نگهداشت و افزایش تولید میدان نفتی بینک
سطح الارض

احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک



شماره پیمان:

۰۵۳-۰۷۳-۹۱۸۴

MECHANICAL DATA SHEETS FOR SLUG PUMPS

نسخه	سریال	رشته	تهیلات	صادر کننده	بسته کاری	پروژه
D03	0019	ME	120	PEDCO	GCS	BK

شماره صفحه: ۲ از ۱۰




REVISION RECORD SHEET



page	D00	D01	D02	D03	D04
1	x	x	x	x	
2	x	x	x	x	
3	x	x	x		
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 <p>NISOC</p>	<p>نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض</p> <p>احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک</p>								 				
شماره پیمان: ۰۵۳-۰۷۳-۹۱۸۴	MECHANICAL DATA SHEETS FOR SLUG PUMPS								شماره صفحه: ۳ از ۱۰				
	پروژه BK	بسته کاری GCS	صادر کننده PEDCO	تجهیزات 120	رشته ME	نوع مدرک DT	سریال 0019	نسخه D03					
طرح نگهداشت و افزایش تولید 27 مخزن													
General Notes													
<p>1. Mass Density [kg/m3] at Min. / Norm / Max. Temp: 1023 / 716 / 649 and Viscosity [cP] At Min. / Normal / Max. Temp: 1.37 / 0.58 / 0.449</p> <p>2 Design Conditions:</p> <table border="0" style="width: 100%;"> <tr> <td style="text-align: center;"><u>Min./Max. Design Temperature(°C)</u></td> <td style="text-align: center;"><u>Max. Design Pressure(barg)</u></td> </tr> <tr> <td style="text-align: center;">5 / 85</td> <td style="text-align: center;">23.3</td> </tr> </table> <p>3 For technical requirements of electrical lv motors refer to " Data sheets for lv induction motors; DOC NO.:BK-GCS-PEDCO-120-EL-DT-0008", Vendor shall fill in the blanks and return the completed data sheet along with Motor data sheet, "DOC NO.:BK-GCS-PEDCO-120-EL-DT-0008" with his proposal.</p> <p>4 Vendor shall submit ITP (Inspection & Testing Plan) with his proposal.</p> <p>5 The motors, pump mechanical seal, pump coupling and pump accessories shall be supplied from the project's approved vendor list (A.V.L.). Chinese & Indian vendors are not acceptable for Mechanical seal , Electro motor and coupling subvendors.</p> <p>6 Vendor is requested to confirm the material, or propose appropriate alternative.</p> <p>7 For Instrumentation, Project specification 'Specification For Instrument and Control of package Unit System (PU)' Doc. No. BK-GNRL-PEDCO-000-IN-SP-0004 and other instrument specification which to be attached to MR shall be followed.</p> <p>8 Mechanical seal data sheet shall fill in by vendor as per API 682. Pump Manufacturer shall supply all instrumentation for mechanical seals as per API 682 4th Edition and project requirements.</p> <p>9 NPSH test shall be done & witnessed if the margin of NPSHr & NPSHa is less than 1.</p> <p>10 The Tie-in flanges shall conform to ASME B-16.5</p> <p>11 Valves in the piping system shall be Welded Flanged type.</p> <p>12 Supplier to indicate which minimum flow pumps can achieve.</p> <p>13 Pumps shall be designed, fabricated, tested, and inspected in accordance with the requirements of API 610 11th & IPS-G-PM-105(3).</p> <p>14 Nozzle loads shall be 2 times the loads shown in API 610 11th Edition.</p> <p>15 Pump starts Automatically with open delivery valve.</p> <p>16 Electrical motor shall be rated for the end of curve.</p> <p>17 The Suction line size is 4" and discharge line size is 3".</p> <p>18 The Material shall be followed in accordance with NACE MR0175/ISO15156 and Technical Specification for Material Requirements in sour service. Doc.No: BK-GNRL-PEDCO-000-PI-SP-0008.</p> <p>19 H2S content is 6707.6 ppmw.</p> <p>20 Pump Manufacturer shall supply all instrumentation for mechanical seals as per API 682 4th Edition and project requirements.</p> <p>21 Based on project instrumentation specification, these equipments are classified as Type B (Connected to DCS/ESD): Centrifugal Pump Package.</p> <p>22 Welding repair procedures shall be submitted for approval.</p> <p>23 Refer to hazardous area classification layout Doc. No.: BK-GCS-PEDCO-120-SA-PY-0002 , all instrumentation and electrical devices shall be suitable for: ZONE 2 & Gas group IIA, Temperature class T3.</p> <p>24 Ultrasonic Test shall be performed for forged shaft.</p> <p>25 For pumps with vacuum suction pressure the minimum NPSH margin shall be 2 m. for other pumps the minimum NPSH margin shall be 1 m.</p> <p>26 Spare parts shall be supplied by vendor according to 'MR's appendix for Centrifugal Pumps ' Doc. No. BK-GCS-PEDCO-120-ME-MR-0009.</p> <p>27 Couplings shall be dry, flexible and spacer type and coupling guards shall be of Non-Spark type.</p> <p>28 Bearing temperature shall be measured during mechanical run test.</p> <p>29 For electrical motor descriptions, refer to 'Specification For LV & MV Induction Motors' Doc. No.BK-GNRL-PEDCO-000-EL-SP-0010 & 0017 .</p> <p>30 Minimum Design Metal Tem (MDMT)= 5 °C</p> <p>31 Turn down and design (rated) flow rates are 30% and 110 % of normal flow rate respectively.</p> <p>32 API Plan 31+53B shall be considered.</p> <p>33 PMI Testing For Alloy Steel Shall be Done.</p> <p>34 Power Factor, efficiency, frequent, voltage, frequent variation and voltage variation of motor shall be specified by vendor in data sheet.</p> <p>35 All drain and vents (If any) to be manifolded, valved and routed to the skid edge. a drain line to be considered in barrel and to be pipe up to mounted skid.</p> <p>36 Range of ambient temperature: Min. ambient temperature: 5 °C , Max. ambient temperature: 50 °C</p> <p>37 Pump is not installed directly on the ground and at least 20~30 cm height for pedestal is considered.</p> <p>38 Max Allowable Pressure at Shut-Off (barg): 23.3</p> <p>39 Barrel and pump shall have the same MAWP and to be hydrotest in same value with pump.</p>										<u>Min./Max. Design Temperature(°C)</u>	<u>Max. Design Pressure(barg)</u>	5 / 85	23.3
<u>Min./Max. Design Temperature(°C)</u>	<u>Max. Design Pressure(barg)</u>												
5 / 85	23.3												

 NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک	
شماره پیمان: ۰۵۳-۰۷۳-۹۱۸۴	MECHANICAL DATA SHEETS FOR SLUG PUMPS	شماره صفحه: ۱۰ از ۱۵
پروژه BK بسته کاری GCS صادر کننده PEDCO تسهیلات 120 رشته ME نوع مدرک DT سریال 0019 نسخه D03		



طرح نگهداشت و افزایش تولید 27 مخزن	
APPLICABLE TO: PROPOSAL FOR: NISOC SITE: BINAK Gas Compressor Station NO. REQ: 2 (1+1) MANUFACTURER:	APPLICABLE NTL/INTNL STANDARD: API 610-11th Ed.& IPS-G-PM-105(3) UNIT: SERVICE: SLUG PUMP TYPE: VS6 (V.T.A) No. STAGES MODEL: V.T.A. SERIAL NO. V.T.A.

LIQUID TYPE OR NAME : VAPOR PRESSURE : DENSITY : (NOTE 1) SPECIFIC HEAT : VISCOSITY : (NOTE 1)	Units bara kg/m³ kJ/kgC cP	water+hydrocarbon 6.50
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NPSH _A Datum: PUMPING TEMPERATURE : FLOW : MECHANICAL SUCTION PRESSURE : DIFFERENTIAL PRESSURE : DIFFERENTIAL HEAD : NPSH _A : HYDRAULIC POWER:	barg bar m m KW	5.75 14.0 199.5 0.9 4.30
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LOCATION: MOUNTED AT : ELECTRIC AREA CLASSIFICATION: GROUP SITE DATA : ELEVATION (MSL) : RANGE OF DESIGN TEMPS:MIN / MAX RELATIVE HUMIDITY: MIN / MAX UNUSUAL CONDITIONS: UTILITY CONDITIONS : ELECTRICITY : VOLTAGE PHASE HERTZ	OUTDOOR UNHEATED II/A m °C % DRIVERS HEATING CONTROL SHUTDOWN 400 3 50
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PERFORMANCE PROPOSAL CURVE NO. _____ RPM _____ As Tested Curve No. _____ IMPELLER DIA.: RATED _____ MAX. _____ MIN. _____ mm RATED POWER _____ Kw EFFICIENCY _____ (%) RATED CURVE BEP FLOW (at rated impeller dia) _____ m³/hr MIN FLOW : _____ kJ/Nm³ m³/hr PREFERRED OPERATING REGION (6.1.11) _____ to _____ m³/hr ALLOWABLE OPERATING REGION _____ to _____ m³/hr MAX HEAD @ RATED IMPELLER _____ m MAX POWER @ RATED IMPELLER _____ kW NPSH3 AT RATED FLOW : _____ m CL PUMP TO U/S BASEPLATE _____ m NPSH MARGIN AT RATED FLOW : _____ m SPECIFIC SPEED (6.1.9) _____ SUCTION SPECIFIC SPEED LIMIT _____ SUCTION SPECIFIC SPEED _____ MAX. ALLOW. SOUND PRESS. LEVEL REQ'D (6.1.14) 85 (dBA) @ 1 m EST MAX SOUND PRESS. LEVEL _____ (dBA) MAX. SOUND POWER LEVEL REQ'D (6.1.14) _____ EST MAX SOUND POWER LEVEL _____	DRIVER (7.1.5) (NOTES 3,16,29,34) Driver Type MOTOR GEAR NO VARIABLE SPEED REQUIRED NO SOURCE OF VARIABLE SPEED _____ OTHER _____ MANUFACTURER _____ NAMEPLATE POWER AND POWER FACTOR @Site Condition _____ KW Nominal RPM _____ RATED LOAD RPM _____ FRAME OR MODEL _____ ORIENTATION VERTICAL LUBE _____ BEARING TYPE: _____ RADIAL _____ THRUST _____ STARTING METHOD D.O.I (OPEN DISCHARGE VALVE) INSULATION/TEMP. RISE F/B Max Voltage Variation ±10% Max Frequency Variation ±5% Max Voltage and Frequency Variation together ±10%
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		پروژه	بسته کاری	صادر کننده	تجهیزات	رشته	نوع مدرک	سریال	نسخه
		BK	GCS	PEDCO	120	ME	DT	0019	D03
طرح نگهداشت و افزایش تولید 27 مخزن									
INSTRUMENTATION					SEAL SUPPORT SYSTEM MOUNTING				
SEE ATTACHED API-670 DATA SHEET ACCELEROMETER (7.4.2.1) Number of Accelerometers Mounting Location of Accelerometers PROVISION FOR MTG ONLY (6.10.2.10) Number of Accelerometers Mounting Location of Accelerometers (6.10.2.11) YES					SEAL SUPPORT SYSTEM MOUNTED ON PUMP BASEPLATE (7.5.1.4) YES IDENTIFY LOCATION ON BASEPLATE INTERCONNECTING PIPING BY SUPPLIER				
					MECHANICAL SEAL (6.8.1) NOTE 5.8 (VTS) SEE ATTACHED ISO 21049/API 682 DATA SHEET NOTE 8 ADDITIONAL CENTRAL FLUSH PORT (6.8.9) HEATING JACKET REQ'D. (6.8.11) FLUSH PLAN 31+53B				
					HEATING AND COOLING (6.1.17) (VTS) COOLING REQ'D COOLING WATER PIPING PLAN COOLING WATER PIPING COOLING WATER PIPING MATERIALS COOLING WATER REQUIREMENTS: TOTAL COOLING WATER HEATING MEDIUM OTHER HEATING PIPING				
VIBRATION PROBES (7.4.2.2) PROVISIONS FOR VIB. PROBES NUMBER PER RADIAL BEARING NUMBER PER AXIAL BEARING MONITORS AND CABLES SUPPLIED BY (7.4.2.4) TEMPERATURE (7.4.2.3) PROVISIONS FOR TEMP PROBES RADIAL BEARING TEMP. NUMBER PER RADIAL BEARING THRUST BEARING TEMP. NUMBER PER THRUST BEARING ACTIVE SIDE NUMBER PER THRUST BEARING INACTIVE SIDE TEMP. GAUGES (WITH THERMOWELLS) (9.1.3.6) PRESSURE GAUGE TYPE Remarks					PIPING & APPURTENANCES MANIFOLD PIPING FOR PURCHASER CONNECTION (7.5.1.6) VENT DRAIN VALVES COOLING WATER TAG ALL ORIFICES (7.5.2.4) YES SOCKET WELD CONN ON SEAL GLAND (7.5.2.8)				

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احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک



MECHANICAL DATA SHEETS FOR SLUG PUMPS

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طرح نگهداشت و افزایش تولید 27 مخزن

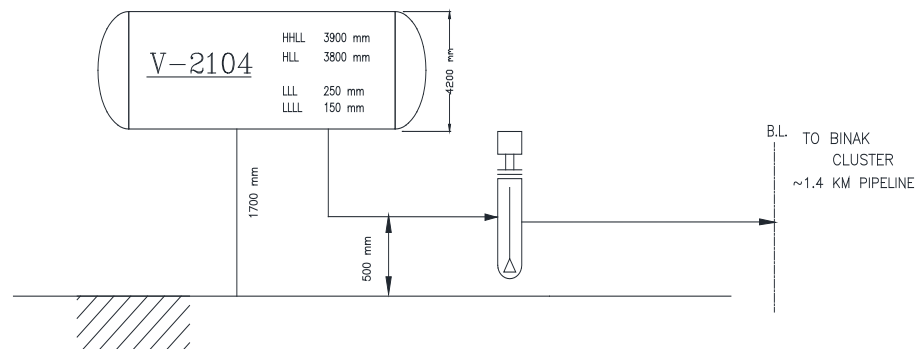
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 NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک								
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	پروژه	بسته کاری	صادر کننده	تجهیزات	رشته	نوع مدرک	سریال		نسخه
	BK	GCS	PEDCO	120	ME	DT	0019	D03	
طرح نگهداشت و افزایش تولید 27 مخزن									
PRESSURE VESSEL DESIGN CODE REFERENCES									
THESE REFERENCES MUST BE LISTED BY THE MANUFACTURER CASTING FACTORS USED IN DESIGN (TABLE 3) SOURCE OF MATERIAL PROPERTIES									
WELDING AND REPAIRS (NOTE 22)									
THESE REFERENCES MUST BE LISTED BY THE PURCHASER. (DEFAULT TO TABLE 11 IF NO PURCHASER PREFERENCE IS STATED)									
ALTERNATE WELDING CODES AND STANDARDS									
WELDING REQUIREMENT (APPLICABLE CODE OR STANDARD)									
WELDER/OPERATOR QUALIFICATION									
WELDING PROCEDURE QUALIFICATION									
NON-PRESSURE RETAINING STRUCTURAL WELDING SUCH AS BASEPLATES OR SUPPORTS									
MAGNETIC PARTICLE OR LIQUID PENETRANT EXAMINATION OF PLATE EDGES									
POSTWELD HEAT TREATMENT									
POSTWELD HEAT TREATMENT ON WELDS									
MATERIAL INSPECTION									
ALTERNATIVE MATERIAL INSPECTIONS AND ACCEPTANCE CRITERIA (SEE TABLE 15) (8.2.2.5)									
REMARKS :									

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ANICAL DATA SHEET



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