

 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 CLOSED DRAIN PUMPS (API 610)								شماره صفحه: ۱ از ۱۰
	پروژه	بسته کاری	صادر کننده	تجهیزات	رشته	نوع مدرک	سریال	نسخه	
	BK	GCS	PEDCO	120	ME	DT	0022	D06	

طرح نگهداشت و افزایش تولید ۲۷ مخزن

MECHANICAL DATA SHEETS FOR CLOSED DRAIN PUMPS (P-2202 A/B)

نگهداشت و افزایش تولید میدان نفتی بینک

D06	SEP. 2022	IFA	H.Ghadyani	M.Fakharian	S.Faramarzpour	
D05	MAY. 2023	IFA	H. Adineh	M.Fakharian	A.M.Mohseni	
D04	SEP. 2022	IFA	H. Adineh	M.Fakharian	M. Mehrshad	
D03	APR. 2022	IFA	H. Adineh	M.Fakharian	M. Mehrshad	
D02	MAR. 2022	IFA	H. Adineh	M.Fakharian	M. Mehrshad	
D01	JAN. 2022	IFA	H. Adineh	M.Fakharian	M. Mehrshad	
D00	NOV.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-708853
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

 NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض							
	احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک						شماره صفحه: ۲ از ۱۰	
	MECHANICAL DATA SHEETS FOR CLOSED DRAIN PUMPS (API 610)							
شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴	پروژه BK	بسته کاری GCS	صادرکننده PEDCO	تسهیلات 120	رشته ME	نوع مدرک DT	سریال 0022	نسخه D06

REVISION RECORD SHEET

page	D00	D01	D02	D03	D04	page	D05	D06	D07	D08	D09
1	x	x	x	x	x	1	x	x			
2	x	x	x	x	x	2	x	x			
3	x	x		x	x	3	x	x			
4	x					4					
5	x	x	x	x	x	5	x				
6	x	x	x	x	x	6	x				
7	x					7					
8	x	x			x	8	x				
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 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 CLOSED DRAIN PUMPS (API 610) <table border="1"> <tr> <td>پروژه</td> <td>بسته کاری</td> <td>صادر کننده</td> <td>تسهیلات</td> <td>رشته</td> <td>نوع مدرک</td> <td>سریال</td> <td>نسخه</td> </tr> <tr> <td>BK</td> <td>GCS</td> <td>PEDCO</td> <td>120</td> <td>ME</td> <td>DT</td> <td>0022</td> <td>D06</td> </tr> </table>	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	BK	GCS	PEDCO	120	ME	DT	0022	D06	شماره صفحه: ۳ از ۱۰
پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه											
BK	GCS	PEDCO	120	ME	DT	0022	D06											
GENERAL NOTES																		
1 Pumping fluid might be hydrocarbon, water or a mixture of both and also is corrosive / erosive / hazardous agents / flammable and its contamination is allowed.																		
2 Mass Density [kg/m3] at Min. / Norm / Max. Temp: 829/980/1023																		
3 Viscosity [cP] At Min. / Normal / Max. Temp: 0.443/0.46/1.37																		
4 Mechanical seal shall be as per API 682, 4th edition Data Sheet.																		
5 PMI Testing For Alloy Steel Shall be Done.																		
6 If NPSH margine be less than 1m, NPSH Test Shall be Done.																		
7 Pump drain shall be terminated at skid edge with flange connection and valved. Valves in the piping system shall be Welded Flanged type.																		
8 Design Condition: Min./Max. Design Temperature: 5 / 85 °C Max. Design Pressure: 14.5 barg																		
9 API Seal Plan 31-53B shall be considred.(vendor to confirm)																		
10 Vendor shall submit ITP (Inspection & Testing Plan) with his proposal.																		
11 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.																		
12 Vendor is requested to confirm the material, or propose appropriate alternative.																		
13 The Tie-in flanges shall conform to ASME B-16.5																		
14 Ultrasonic Test shall be performed for forged shaft.																		
15 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.																		
16 Spare parts shall be supplied by vendor according to 'MR's appendix for Centrifugal Pumps; Doc. No.; BK-GCS-PEDCO-120-ME-MR-0009"																		
17 Bearing temperature shall be measured during mechanical run test.																		
18 For electrical motor descriptions, refer to 'Specification For LV induction Motors' Doc. No.BK-GNRAL-PEDCO-000-EL-SP-0010. and Specification for MV induction motors' Doc.No. BK-GNRAL-PEDCO-000-EL-SP-0017.																		
19 Electrical motor shall be rated for the end of curve.																		
20 For site conditions refer to Process Basis of Design Document. Doc.No. BK-GNRAL-PEDCO-000-PR-DB-0001.																		
21 Suction & Discharge line Size is 2".																		
22 Power Factor, efficiency, frequent, voltage, frequent variation and voltage variation of motor shall be specified by vendor in data sheet.																		
23 Allowable external forces and moments on nozzle equal to two times of table 5 of API 610-11th edition.																		
24 The material shall be in compliance with NACE MR0175/ISO15156 and Specification For Material Requirements in Sour service Document No. BK-GNRAL-PEDCO-000-PI-SP-0008																		
25 Range of ambient design temperature: Min. ambient design temperature: 5 °C , Max. ambient design temperature: 50 °C																		
26 Coupling shall be flexible with spacer and coupling guard shall be of Non-Spark type.																		
27 The elevation of pump centerline from ground is 76 cm.																		
28 Max allowable pressure at shut-off: 14.5 barg																		
29 Barometric pressure in Binak new GCS; winter: 14.37 psia summer: 13.26 psia																		
30 Barrel and pump shall have the same MAWP and to be hydrotest in same value with pump.																		
31 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.																		
32 vendor shall fill in the blanks and return the complete data sheet along with motor data sheet, Doc.No:BK-GCS-PEDCO-120-EL-DT-0008, With his proposal																		

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	MECHANICAL DATA SHEETS FOR CLOSED DRAIN PUMPS (API 610)						شماره صفحه: ۴ از ۱۰	
شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴	پروژه BK	بسته کاری GCS	صادر کننده PEDCO	تسهیلات 120	رشته ME	نوع مدرک DT	سریال 0022	نسخه D06

طرح نگهداشت و افزایش تولید 27 مخزن

CLIENT: <u>National Iranian South Oil Company (NISOC)</u>					
PROJECT TITLE: <u>BINAK New Compressor Gas Station</u>					
JOB NUMBER: _____					
EQUIPMENT NUMBER: <u>P-2202 A/B</u>					
EQUIPMENT SERVICE: <u>CLOSED DRAIN PUMPS</u>					
SERIAL NUMBER: _____					
REQ. / SPEC NO. : <u>BK-GCS-PEDCO-120-ME-SP-0003</u>					
PURCH ORDER NO. _____					

Cells coloured thus

	contain drop-down options
	contain calculated values based on input data; do not change.
	identify a cross referenced paragraph in the document note, and may also contain a drop down list

When you have completed the DS, highlight the whole page format cells pattern none
Delete these notes on completion

COMMENTS:

DATA SHEETS					
ITEM No.	ATT	ITEM No.	ATT	ITEM No.	ATT
P-2202 A		P-2202 B			

PUMP
MOTOR
GEAR
TURBINE

 NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک																																																			
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طرح نگهداشت و افزایش تولید 27 مخزن																																																				
APPLICABLE TO: PROPOSAL FOR NISOC SITE BINAK Gas Compressor Station NO. REQ 2(1+1) PUMP SIZE MANUFACTURER																																																				
APPLICABLE NTL/INTNTL STANDARD: API 610 - 11th Edition, IPS-G-PM-105 UNIT SERVICE Closed Drain Pump TYPE Centrifugal No. STAGES MODEL VS6 (VTA) SERIAL NO.																																																				
LIQUID CHARACTERISTICS																																																				
<table><tr><td></td><td>Units</td><td>Maximum</td><td>Minimum</td><td>Note</td></tr><tr><td>LIQUID TYPE OR NAME</td><td></td><td colspan="2">Hydrocarbon Drain(HC)(NOTE 1)</td><td>Max & min values refer</td></tr><tr><td>VAPOR PRESSURE</td><td>bara</td><td>1</td><td></td><td>only to the property</td></tr><tr><td>DENSITY (NOTE 2)</td><td>kg/m³</td><td>1023</td><td>829</td><td>listed</td></tr><tr><td>SPECIFIC HEAT</td><td>kJ/kgC</td><td></td><td></td><td></td></tr><tr><td>VISCOSITY (NOTE 3)</td><td>cP</td><td>1.37</td><td>0.443</td><td></td></tr></table>		Units	Maximum	Minimum	Note	LIQUID TYPE OR NAME		Hydrocarbon Drain(HC)(NOTE 1)		Max & min values refer	VAPOR PRESSURE	bara	1		only to the property	DENSITY (NOTE 2)	kg/m ³	1023	829	listed	SPECIFIC HEAT	kJ/kgC				VISCOSITY (NOTE 3)	cP	1.37	0.443		SERVICE : INTERMITTENT • IF INTERMITTENT NO. OF STARTS : PUMPS OPERATE IN: CORROSION DUE TO : (6.12.1.9) EROSION DUE TO : (6.12.1.9) H2S CONCENTRATION (ppm) : (6.12.1.12) CHLORIDE CONCENTRATION (ppm) : PARTICULATE SIZE (DIA IN MICRONS) PARTICULATE CONCENTRATION (PPM)																					
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OPERATING CONDITIONS (6.1.2)																																																				
	Units	Maximum	Rated	Normal	Min																																															
NPSH _A Datum:		C.L. Impeller																																																		
PUMPING TEMPERATURE :	°C			5 (worse case)																																																
FLOW :	m ³ /hr		3.30	3.0																																																
DISCHARGE PRESSURE:	barg		7.0																																																	
SUCTION PRESSURE :	barg	0.800			0.0																																															
DIFFERENTIAL PRESSURE :	bar		7.0																																																	
DIFFERENTIAL HEAD :	m		72.80																																																	
NPSH _A :	m		0.3																																																	
HYDRAULIC POWER:	KW		0.60																																																	
SITE AND UTILITY DATA																																																				
LOCATION: OUTDOOR UNHEATED MOUNTED AT: ELECTRIC AREA CLASSIFICATION: (6.1.22) ZONE 1 GROUP II B TEMP CLASS T3 SITE DATA : ELEVATION (MSL) : 12.5 m BAROMETER : (NOTE 28) mBar RANGE OF DESIGN TEMPS:MIN / MAX 5 85 °C RELATIVE HUMIDITY: MIN / MAX 0 100 % (@ 25.6 °C) UNUSUAL CONDITIONS: UTILITY CONDITIONS : <table><tr><td>ELECTRICITY :</td><td>DRIVERS</td><td>HEATING</td><td>CONTROL</td><td>SHUTDOWN</td></tr><tr><td>VOLTAGE</td><td>400</td><td></td><td></td><td></td></tr><tr><td>PHASE</td><td>3</td><td></td><td></td><td></td></tr><tr><td>HERTZ</td><td>50</td><td></td><td></td><td></td></tr></table>			ELECTRICITY :	DRIVERS	HEATING	CONTROL	SHUTDOWN	VOLTAGE	400				PHASE	3				HERTZ	50				COOLING WATER : <table><tr><td></td><td>RETURN</td><td>DESIGN</td></tr><tr><td>TEMP</td><td></td><td></td></tr><tr><td>PRESS.</td><td></td><td></td></tr><tr><td>SOURCE</td><td></td><td></td></tr><tr><td colspan="3">COOLING WATER CHLORIDE CONCENTRATION:</td></tr><tr><td>INSTRUMENT AIR :</td><td>kg</td><td>MIN kg</td></tr><tr><td>STEAM</td><td></td><td></td></tr><tr><td>TEMP</td><td></td><td></td></tr><tr><td>PRESS.</td><td></td><td></td></tr></table>				RETURN	DESIGN	TEMP			PRESS.			SOURCE			COOLING WATER CHLORIDE CONCENTRATION:			INSTRUMENT AIR :	kg	MIN kg	STEAM			TEMP			PRESS.		
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PRESS.																																																				
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) _____ m ³ /hr MIN. FLOW: _____ kJ/Nm ³ m ³ /hr PREFERRED OPERATING REGION (6.1.11) _____ to _____ m ³ /hr ALLOWABLE OPERATING REGION _____ to _____ m ³ /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 REQD (6.1.14) 85.00 (dBA) EST MAX SOUND PRESS. LEVEL _____ (dBA) MAX. SOUND POWER LEVEL REQD (6.1.14) _____ EST MAX SOUND POWER LEVEL _____			DRIVER (7.1.5) (NOTE 22) 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 OPEN DISCHARGE VALVE INSULATION/TEMP. RISE F/B Max Voltage Variation ±10% Max Frequency Variation ±5% Max Voltage and Frequency Variation together ±10%																																																	



NISOC

نگهداشت و افزایش تولید میدان نفتی بینک
سطح الارض
احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک



شماره صفحه: ۱۰ از ۱۶

شماره پیمان:

MECHANICAL DATA SHEETS FOR CLOSED DRAIN PUMPS (API 610)

۰۵۳ - ۰۷۳ - ۹۱۸۴

نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادرکننده	بسته کاری	پروژه
D06	0022	DT	ME	120	PEDCO	GCS	BK

طرح نگهداشت و افزایش تولید 27 مخزن

CONSTRUCTION

API PUMP TYPE: VS6 [Based on API 610 definitions]
SEE ALSO PAGE 6
NOZZLE CONNECTIONS: (6.5.5)

	Size	Facing	Rating	Position
SUCTION	Note 21	RF	300	
DISCHARGE	Note 21	RF	300	

PRESSURE CASING AUX. CONNECTIONS: (6.4.3.2)

No.	Size	Type	Facing	Rating	Posn.
BAL./LEAK OFF					
DRAIN			RF	300	
VENT			RF	300	
PRESSURE GAGE					
TEMP GAGE					
WARM-UP LINE					

Drain Valve Supplied By
DRAINS MANIFOLDED
VENT Valve Supplied By
VENTS MANIFOLDED
THREAD, CONS FOR PIPELINE SERVICE & < 50°C (6.4.3.2)
SPECIAL FITTINGS FOR TRANSITIONING (6.4.3.3)
CYLINDRICAL THREADS REQUIRED (6.4.3.8)
GUSSET SUPPORT REQUIRED
MACHINED AND STUDDED CONNECTIONS (6.4.3.12)
VS 6 DRAIN
DRAIN TO SKID EDGE

Supplier

BY SUPPLIER

SUPPLIER

If Needed

YES

MATERIAL (6.12.1.1) (VTA)
APPENDIX H CLASS S-6
MIN DESIGN METAL TEMP (6.12.4.1) 5 °C
REDUCED-HARDNESS MATERIALS REQ'D (6.12.1.12.1) YES (Note 24)
Applicable Hardness Standard (6.12.1.12.3)
BARREL :
CASE :
DIFFUSERS
IMPELLER :
IMPELLER WEAR RING :
CASE WEAR RING :
SHAFT:
Bowl (if VS-type)
Inspection Class Level 2
BEARINGS AND LUBRICATION (6.10.1.1)
BEARING (TYPE / NUMBER): (6.11.4)
RADIAL /
THRUST /
LUBRICATION : (6.10.2.2) (6.11.3) (9.2.6) FLOOD
PRESSURE LUBE SYSTEM TO ISO 10438- (9.2.6.5)
ISO 10438 DATA SHEETS ATTACHED
Pressurized Lube Oil System mtd on pump baseplate
Location of Pressurized Lube Oil System mounted on baseplate :
INTERCONNECTING PIPING PROVIDED BY Supplier
OIL VISC. ISO GRADE VG
CONSTANT LEVEL OILER : REQUIRED

CASING MOUNTING:
CASING TYPE: (6.3.10)
OH3 BACKPULLOUT LIFTING DEVICE REQD. (9.1.2.6)
CASE PRESSURE RATING: Note 30
MAWP : (6.3.5) By Vendor barg @ °C
HYDROTEST : 1.5*MAWP barg @ °C
HYDROTEST OH PUMP AS ASSEMBLY
SUCTION PRESS. REGIONS DESIGNED FOR MAWP YES
ROTATION: (VIEWED FROM COUPLING END)
• IMPELLERS INDIVIDUALLY SECURED : YES
• BOLT OH 3/4/5 PUMP TO PAD / FOUNDATION :
• PROVIDE SOLEPLATE FOR OH 3/4/5 PUMPS
ROTOR:
SHAFT FLEXIBILITY INDEX (SFI) (9.1.1.3)
First Critical Speed Wet (Multi stage pumps only)
COMPONENT BALANCE TO ISO 1940 G1.0
SHRINK FIT -LIMITED MOVEMENT IMPELLERS (9.2.2.3)
COUPLING:(7.2.3) (7.2.13.f)
MANUFACTURER
MODEL
RATING (POWER/100 RPM)
SPACER LENGTH mm
SERVICE FACTOR min 1.5
RIGID (Note 26) NO
COUPLING WITH HYDRAULIC FIT (7.2.10)
COUPLING BALANCED TO ISO 1940-1 G6.3 (7.2.3)
COUPLING WITH PROPRIETARY CLAMPING DEVICE (7.2.11)
COUPLING IN COMPLIANCE WITH (7.2.4) API 610 compliant
COUPLING GUARD STANDARD PER (7.2.13.a) ISO 14120
Window on Coupling Guard
BASEPLATE
API BASEPLATE NUMBER :
BASEPLATE CONSTRUCTION (7.3.14)
BASEPLATE DRAINAGE (7.3.1) Entire Baseplate Drain Pan
MOUNTING :
NON-GROUT CONSTRUCTION : (7.3.13)
VERTICAL LEVELING SCREWS : REQUIRED
LONGITUDINAL DRIVER POSITIONING SCREWS : REQUIRED
SUPPLIED WITH :
• GROUT AND VENT HOLES YES
• DRAIN CONNECTION YES
MOUNTING PADS SIZED FOR BASEPLATE LEVELING (7.3.5)
MOUNTING PADS TO BE MACHINED (7.3.6)
PROVIDE SPACER PLATE UNDER ALL EQUIPMENT FEET
OTHER
REMARKS :

 NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک							 	
	MECHANICAL DATA SHEETS FOR CLOSED DRAIN PUMPS (API 610)								شماره صفحه: ۷ از ۱۰
	شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴	پروژه BK	بسته کاری GCS	صادر کننده PEDCO	تسهیلات 120	رشته ME	نوع مدرک DT		

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INSTRUMENTATION	SEAL SUPPORT SYSTEM MOUNTING
SEE ATTACHED API-670 DATA SHEET	SEAL SUPPORT SYSTEM MOUNTED ON PUMP BASEPLATE
ACCELEROMETER (7.4.2.1)	(7.5.1.4)
Number of Accelerometers	IDENTIFY LOCATION ON BASEPLATE
Mounting Location of Accelerometers	INTERCONNECTING PIPING BY Supplier
PROVISION FOR MTG ONLY (6.10.2.10)	MECHANICAL SEAL (6.8.1) (VTS)
Number of Accelerometers	SEE ATTACHED ISO 21049/API 682 DATA SHEET (NOTE 4)
Mounting Location of Accelerometers	ADDITIONAL CENTRAL FLUSH PORT (6.8.9)
FLAT SURFACE REQUIRED (6.10.2.11) YES	HEATING JACKET REQ'D. (6.8.11)
Number of Accelerometers	FLUSH PLAN 31+53B (NOTE 9.1)
Mounting Location of Accelerometers	
VIBRATION PROBES (7.4.2.2)	HEATING AND COOLING (6.1.17) (VTS)
PROVISIONS FOR VIB. PROBES	COOLING REQ'D
NUMBER PER RADIAL BEARING	COOLING WATER PIPING PLAN
NUMBER PER AXIAL BEARING	COOLING WATER PIPING
MONITORS AND CABLES SUPPLIED BY (7.4.2.4)	FITTINGS
TEMPERATURE (7.4.2.3)	COOLING WATER PIPING MATERIALS
PROVISIONS FOR TEMP PROBES	COOLING WATER REQUIREMENTS:
RADIAL BEARING TEMP.	TOTAL COOLING WATER
NUMBER PER RADIAL BEARING	HEATING MEDIUM
THRUST BEARING TEMP.	OTHER
NUMBER PER THRUST BEARING ACTIVE SIDE	HEATING PIPING
NUMBER PER THRUST BEARING INACTIVE SIDE	
TEMP. GAUGES (WITH THERMOWELLS) (9.1.3.6)	PIPING & APPURTENANCES
PRESSURE GAUGE TYPE	MANIFOLD PIPING FOR PURCHASER CONNECTION (7.5.1.6)
Remarks	VENT YES
	DRAIN YES
	VALVES YES (NOTE 7)
	COOLING WATER YES
	TAG ALL ORIFICES (7.5.2.4) YES
	SOCKET WELD CONN ON SEAL GLAND (7.5.2.8)

 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 CLOSED DRAIN PUMPS (API 610) <table><tr><td>نسخه</td><td>سریال</td><td>نوع مدرک</td><td>رشته</td><td>تسهیلات</td><td>صادرکننده</td><td>بسته کاری</td><td>پروژه</td></tr><tr><td>D06</td><td>0022</td><td>DT</td><td>ME</td><td>120</td><td>PEDCO</td><td>GCS</td><td>BK</td></tr></table>	نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادرکننده	بسته کاری	پروژه	D06	0022	DT	ME	120	PEDCO	GCS	BK	شماره صفحه: ۱۰ از ۸
نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادرکننده	بسته کاری	پروژه											
D06	0022	DT	ME	120	PEDCO	GCS	BK											

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SURFACE PREPARATION AND PAINT						TEST				
MANUFACTURER'S STANDARD OTHER (SEE BELOW) <u>YES</u> SPECIFICATION NO. <u>As per Project Specification.</u> "Specification for Painting; BK-GNRL-PEDCO-000-PI-SP-0006" PUMP: PUMP SURFACE PREPARATION <u>BY VENDOR</u> PRIMER <u>BY VENDOR</u> FINISH COAT <u>BY VENDOR</u> BASEPLATE: BASEPLATE SURFACE PREPARATION <u>BY VENDOR</u> PRIMER: <u>BY VENDOR</u> FINISH COAT <u>BY VENDOR</u> DETAILS OF LIFTING DEVICES SHIPMENT: (8.4.1) <u>EXPORT</u> EXPORT BOXING REQUIRED <u>YES</u> OUTDOOR STORAGE MORE THAN 6 MONTHS <u>YES</u> ROTOR STORAGE ORIENTATION (9.2.8.2) _____ SHIPPING & STORAGE CONTAINER FOR VERT STORAGE (9.2.8.3) _____ N ₂ PURGE (9.2.8.4) _____ SPARE PARTS START-UP <u>YES</u> NORMAL MAINTENANCE <u>YES</u>						SHOP INSPECTION (8.1.1) _____ PERFORMANCE CURVE _____ & DATA APPROVAL PRIOR TO SHIPMENT. <u>YES</u> TEST WITH SUBSTITUTE SEAL (8.3.3.2.b) <u>NO</u> MATERIAL CERTIFICATION REQUIRED CASING <u>YES</u> SHAFT <u>YES</u> (6.12.1.8) IMPELLER <u>YES</u> OTHER <u>YES</u> CASTING REPAIR WELD PROCEDURE APPR REQD <u>YES</u> INSPECTION REQUIRED FOR CONNECTION WELDS (6.12.3.4.d) LIQUID PENETRANT <u>YES</u> MAG PARTICLE <u>YES</u> ULTRASONIC _____ RADIOGRAPHY _____ INSPECTION REQUIRED FOR CASTINGS LIQUID PENETRANT <u>YES</u> MAG PARTICLE <u>YES</u> ULTRASONIC (NOTE 14) _____ RADIOGRAPHY _____ HARDNESS TEST REQUIRED (8.2.2.7) _____ ADDNL SUBSURFACE EXAMINATION (6.12.1.5) (8.2.1.3) _____ FOR _____ METHOD _____ PMI TESTING REQUIRED (8.2.2.8) (NOTE 5) <u>YES</u> COMPONENTS TO BE TESTED RESIDUAL UNBALANCE TEST (J.4.1.2) _____ NOTIFICATION OF SUCCESSFUL SHOP PERFORMANCE TEST (8.1.1.c) (8.3.3.5) (WIT) <u>YES</u> BASEPLATE TEST (7.3.21) _____ HYDROSTATIC _____ <u>WIT</u> HYDROSTATIC TEST OF BOWLS & COLUMN (9.3.13.2) _____ <u>WIT</u> PERFORMANCE TEST _____ <u>WIT</u> TEST IN COMPLIANCE WITH (8.3.3.2) <u>8.3.3.2</u> TEST DATA POINTS TO (8.3.3.3) <u>8.3.3.3</u> TEST TOLERANCES TO (8.3.3.4) _____ NPSH (8.3.4.3.1) (8.3.4.3.4) (NOTE 6) <u>WIT</u> NPSH-1ST STG ONLY (8.3.4.3.2) _____ NPSH TESTING TO HI 1.6 OR ISO 9906 (8.3.4.3.3) _____ TEST NPSHA LIMITED TO 110% SITE NPSHA (8.3.3.6) _____ RETEST ON SEAL LEAKAGE (8.3.3.2.d) _____ RETEST REQUIRED AFTER FINAL HEAD ADJ (8.3.3.7.b) _____ COMPLETE UNIT TEST (8.3.4.4.1) _____ SOUND LEVEL TEST (8.3.4.5) _____ <u>WIT</u> CLEANLINESS PRIOR TO FINAL ASSEMBLY (8.2.2.6) _____ <u>NON-WIT</u> LOCATION OF CLEANLINESS INSPECTION _____ NOZZLE LOAD TEST _____ CHECK FOR CO-PLANAR MOUNTING PAD SURFACES _____ MECHANICAL RUN TEST UNTIL OIL TEMP STABLE _____ <u>WIT</u> 4 HR. MECH RUN AFTER OIL TEMP STABLE (8.3.4.2.1) _____ <u>WIT</u> 4 HR. MECH RUN TEST (8.3.4.2.2) _____ BRG HSG RESONANCE TEST (8.3.4.7) _____ STRUCTURAL RESONANCE TEST (9.3.9.2) _____ REMOVE / INSPECT HYDRODYNAMIC BEARINGS AFTER TEST (9.2.7.5) _____ AUXILIARY EQUIPMENT TEST (8.3.4.6) _____ EQUIPMENT TO BE INCLUDED IN AUXILIARY TESTS _____ LOCATION OF AUXILIARY EQUIPMENT TEST _____ IMPACT TEST PER EN 13445 _____ PER ASME SECTION VIII _____ REMOVE CASING AFTER TEST _____				
ITEM No						PUMP	DRIVER	GEAR	BASE	TOTAL
OTHER PURCHASER REQUIREMENTS										
COORDINATION MEETING REQUIRED (10.1.3) <u>YES</u>										
MAXIMUM DISCHARGE PRESSURE TO INCLUDE										
MAX RELATIVE DENSITY <u>YES</u>						1023 kg/m ³				
OPERATION TO TRIP SPEED										
MAX DIA. IMPELLERS AND/OR NO OF STAGES <u>YES</u>										
CONNECTION DESIGN APPROVAL (9.2.1.4) _____										
TORSIONAL ANALYSIS / REPORT (6.9.2.10) _____										
PROGRESS REPORTS _____										
OUTLINE OF PROC FOR OPTIONAL TESTS (10.2.5) _____										
ADDITIONAL DATA REQUIRING 20 YEARS RETENTION (8.2.1.1) _____										
LATERAL ANALYSIS REQUIRED (9.1.3.4) (9.2.4.1.3) _____										
MODAL ANALYSIS REQUIRED (9.3.9.2) _____										
DYNAMIC BALANCE ROTOR (6.9.4.4) _____										
INSTALLATION LIST IN PROPOSAL (10.2.3.1) <u>YES</u>										
VFD STEADY STATE DAMPED RESPONSE ANALYSIS (6.9.2.3) _____										
TRANSIENT TORSIONAL RESPONSE _____										
BEARING LIFE CALCULATIONS REQUIRED (6.10.1.6) <u>YES</u>										
IGNITION HAZARD ASSMT TO EN 13463-1 (7.2.13.e) _____										
CASING RETIREMENT THICKNESS DRAWING (10.3.2.3) _____										
FLANGES RQD IN PLACE OF SKT WELD UNIONS (7.5.2.8) <u>YES</u>										
INCLUDE PLOTTED VIBRATION SPECTRA (6.9.3.3) _____										
CONNECTION BOLTING (7.5.1.7) <u>SS</u>										
CADMIUM PLATED BOLTS PROHIBITED _____										
VENDOR TO KEEP REPAIR AND HT RCDS (8.2.1.1.c) <u>YES</u>										
VENDOR SUBMIT TEST PROCEDURES (8.3.1.1) <u>YES</u>										
SUBMIT INSPECTION CHECK LIST (8.1.5) <u>YES</u>										



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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 CLOSED DRAIN PUMPS (API 610)

پروژه	بسته کاری	صادر کننده	تهیهات	رشته	نوع مدرک	سریال	نسخه
BK	GCS	PEDCO	120	ME	DT	0022	D06

شماره صفحه: ۱۰ از ۹

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1	Note	VERTICAL TYPE (FIG 1.1)	VS6	Rev
2	REMARKS	For P&ID refer to BK-GCS-PEDCO-120-PR-PI-0017		
3				
4				
5		VERTICAL PUMPS		VERTICAL PUMPS (CONT'D)
6	PUMP THRUST:	(+) UP	(-) DOWN	LINE SHAFT:
7	STATIC THRUST	N	N	LINE SHAFT DIAMETER
8	AT MIN FLOW	N	N	TUBE DIAMETER
9	AT RATED FLOW	N	N	LINE SHAFT COUPLING:
10	AT MAX FLOW	N	N	LINESHAFT CONNECTION
11	MAX THRUST	N	N	
12	SOLEPLATE REQUIRED			• SUCTION STRAINER TYPE
13	SOLEPLATE Length x Width	m	X	• LEVEL CONTROL
14	SOLEPLATE THICKNESS		mm	IMPELLER COLLETS ACCEPTABLE
15	MOUNTING FLANGE REQUIRED			HARDENED SLEEVES UNDER BEARINGS (9.3.10.5)
16	COLUMN PIPE:			RESONANCE TEST
17	DIAMETER		mm	STRUCTURAL ANALYSIS (9.3.5)
18	LENGTH		m	
19	NUMBER			DRIVER ALIGNMENT SCREWS
20	SPACING		m	SUCTION CAN
21	GUIDE BUSHINGS:			SUCTION CAN
22	NUMBER			THICKNESS
23	LINE SHAFT BEARING SPACING		mm	LENGTH
24	GUIDE BUSHING LUBE:			DIAMETER
25				SEPARTATE MOUNTING PLATE (9.3.8.3.1)
26				PROVIDE SEPARATE SOLEPLATE (9.3.8.3.3)
27				DRAIN PIPED TO SURFACE (9.3.13.5)
28				BOWL HEAD CALCULATION REQUIRED
29	MATERIALS (additional)			
30	SUCTION CAN / BARREL:			LINESHAFT SLEEVES :
31	DISCHARGE HEAD :			BEARING RETAINER :
32	BOWL SHAFT :			SHAFT ENCLOSING TUBE :
33	LINESHAFT :			DISCHARGE COLUMN :
34	LINESHAFT HARDFACING :			PRESSURE RATING:
35	BELLMOUTH :			HEAD
36	BOWL BEARING :			COLUMN PIPE
37	LINESHAFT BEARING :			BOWL
38	SUMP ARRANGEMENT			
39	SUMP DIMENSIONS :			
40	GRADE ELEVATION	1	m	
41	LOW LIQUID LEVEL	2	m	
42	C.L. OF DISCHARGE	3	m	
43	SUMP DEPTH	l_1	m	
44	PUMP LENGTH	l_2	m	
45	GRADE TO DISCH.	l_3	m	
46	GRADE TO LOW LIQUID LVL	l_4	m	
47	GRADE TO 1ST STG IMPL'R.	l_5	m	
48	SUBMERGENCE REQ'D	l_6	m	
49	SUMP DIAMETER	Φd	m	
50				
51				
52				
53				
54				
55				
56				

 NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک							 شرکت توسعه و بهره‌برداری HIRGAN ENERGY
شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴	MECHANICAL DATA SHEETS FOR CLOSED DRAIN PUMPS (API 610)							شماره صفحه: ۱۰ از ۱۰
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	
	BK	GCS	PEDCO	120	ME	DT	0022	D06

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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			
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 OF CASING FABRICATION WELDS			

MATERIAL INSPECTION			
THESE REFERENCES MUST BE LISTED BY THE PURCHASER			
ALTERNATIVE MATERIAL INSPECTIONS AND ACCEPTANCE CRITERIA (SEE TABLE 15) (8.2.2.5)			
DEFAULT TO TABLE 14			
YES			
TYPE OF INSPECTION	METHOD	FOR FABRICATIONS	FOR CASTINGS
RADIOGRAPHY			
ULTRASONIC INSPECTION			
MAGNETIC PARTICLE INSPECTION			
LIQUID PENETRANT INSPECTION			
VISUAL INSPECTION (all surfaces)			

REMARKS :

