
 <b>NISOC</b>	<b>نگهداشت و افزایش تولید میدان نفتی بینک</b> <b>سطح الارض</b>  <b>احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک</b>								
شماره پیمان:  ۰۵۳-۰۷۳-۹۱۸۴	<b>MECHANICAL DATA SHEETS FOR GLYCOL MANUAL PUMPS</b>								شماره صفحه: ۱ از ۵
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	
	BK	GCS	PEDCO	120	ME	DT	0021	D05	

## طرح نگهداشت و افزایش تولید ۲۷ مخزن

### MECHANICAL DATA SHEETS FOR GLYCOL MANUAL PUMPS (P-2102)

نگهداشت و افزایش تولید میدان نفتی بینک

D05	MAY. 2023	IFA	H. Adineh	M.Fakharian	A.M.Mohseni	
D04	DEC. 2022	AFC	H. Adineh	M.Fakharian	M. Mehrshad	
D03	APR.2022	AFC	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-708851

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 پیمان:

۰۵۳-۰۷۳-۹۱۸۴

## MECHANICAL DATA SHEETS FOR GLYCOL MANUAL PUMPS



نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادر کننده	بسته کاری	پروژه
D05	0021	DT	ME	120	PEDCO	GCS	BK

شماره صفحه: ۲ از ۵

## REVISION RECORD SHEET

page	D00	D01	D02	D03	D04		page	D05	D06	D07	D08	D09
1			x	x	x		1	x				
2			x	x	x		2	x				
3			x	x			3	x				
4			x	x	x		4					
5			x				5					
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 <p><b>NISOC</b></p>	<p align="center"><b>نگهداشت و افزایش تولید میدان نفتی بینک</b>  <b>سطح الارض</b></p> <p align="center"><b>احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک</b></p>							 																								
شماره پیمان: ۰۵۳-۰۷۳-۹۱۸۴	<table border="1"> <thead> <tr> <th colspan="8">MECHANICAL DATA SHEETS FOR GLYCOL MANUAL PUMPS</th> </tr> <tr> <th>پروژه</th> <th>بسته کاری</th> <th>صادر کننده</th> <th>تجهیزات</th> <th>رشته</th> <th>نوع محرک</th> <th>سریال</th> <th>نسخه</th> </tr> </thead> <tbody> <tr> <td>BK</td> <td>GCS</td> <td>PEDCO</td> <td>120</td> <td>ME</td> <td>DT</td> <td>0021</td> <td>D05</td> </tr> </tbody> </table>							MECHANICAL DATA SHEETS FOR GLYCOL MANUAL PUMPS								پروژه	بسته کاری	صادر کننده	تجهیزات	رشته	نوع محرک	سریال	نسخه	BK	GCS	PEDCO	120	ME	DT	0021	D05	شماره صفحه: ۳ از ۵
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<p align="center"><b>GENERAL NOTES</b></p>																																
<ol style="list-style-type: none"> <li>For electrical motor descriptions, refer to 'Specification For LV Induction Motors' Doc. No. BK-GNRAL-PEDCO-000-EL-SP-0010.</li> <li>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.</li> <li>Vendor shall submit ITP (Inspection &amp; Testing Plan) with his proposal.</li> <li>The motors, pump mechanical seal, pump coupling and pump accessories shall be supplied from the project's approved vendor list (A.V.L.). Chinese &amp; Indian vendors are not acceptable for Mechanical seal, Electro motor and coupling subvendors.</li> <li>Vendor is requested to confirm the material, or propose appropriate alternative.</li> <li>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.</li> <li>NPSH test shall be done &amp; witnessed if the margin of NPSHr &amp; NPSHa is less than 1 m.</li> <li>The Tie-in flanges shall conform to ASME B-16.5.</li> <li>Vendor to indicate which minimum flow pumps can achieve.</li> <li>Pumps shall be designed, fabricated, tested, and inspected in accordance with the requirements of ISO 5199 latest edition.</li> <li>Pump starts with close delivery valve.</li> <li>Electrical motor shall be rated for site condition.</li> <li>The suction &amp; discharge line diameters are 2".</li> <li>Material class of 'I-1', 'I-2', 'S-1', 'S-2', 'S-3', 'S-4', 'S-5', 'S-6', 'C-6' 'A-7' and 'A-8', which is defined in API 610 table H.1, shall be provided with full chemical analysis and mechanical test certification to BS EN 10204:2004 "3.1". Material class of 'D-1' and 'D-2', which is defined in API 610 table H.1 and also titanium materials shall be provided with full chemical analysis and mechanical test certification to BS EN 10204:2004 "3.2".</li> <li>Based on project instrumentation specification, these equipments are classified as Type B (Connected to DCS/ESD): Centrifugal Pump Package</li> <li>Pump material shall be selected based on Annex H API 610 11th Edition. (Vendor to confirm)</li> <li>If pump is self venting there is no need for vent.</li> <li>Ultrasonic Test shall be performed for forged shaft.</li> <li>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.</li> <li>Couplings shall be dry, flexible and spacer type.</li> <li>Bearing temperature shall be measured during mechanical run test.</li> <li>Max. allow. sound press. level shall be 85 d BA.</li> <li>For site conditions refer to Process Basis of Design document. Doc.No. BK-GNRAL-PEDCO-000-PR-DB-0001.</li> <li>For electrical motor descriptions, refer to 'Specification For LV induction Motors' Doc. No.BK-GNRAL-PEDCO-000-EL-SP-0010.</li> <li>Power Factor, efficiency, frequent, voltage, frequent variation and voltage variation of motor shall be specified by vendor in data sheet.</li> <li>Allowable external forces and moments on nozzle should be conformed to Spec. No.: BK-GCS-PEDCO-120-ME-SP-0004.</li> <li>Min. / Max. pumping temperature(°c): 5 / 50</li> <li>Minimum design metal temperature (°c): 5</li> <li>Design Conditions: Min./Max. Design Temperature ( ): 5 / 85      Design Pressure (barg): 1.9</li> <li>Welding repair procedures shall be submitted for approval.</li> <li>Spare parts shall be supplied by vendor according to 'MR's appendix for Centrifugal Pumps; Doc. No.; BK-GCS-PEDCO-120-ME-MR-0010".</li> <li>The elevation of pump centerline from ground is 76 cm.</li> <li>Min./Max. suction pressure (barg): 0 / 0.10</li> <li>Max Allowable Pressure at Shut-Off at rated impeller(barg) (finalized by vendor): 1.9</li> <li>Hydraulic Power(kW): 0.1</li> <li>electrical motor shall be rated for the end of curve</li> </ol>																																
				 <p>D05</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:		MECHANICAL DATA SHEETS FOR GLYCOL MANUAL PUMPS						شماره صفحه: ۴ از ۵	
۰۵۳-۰۷۳-۹۱۸۴		پروژه	بسته کاری	صادر کننده	تهیهات	رشته	نوع مدرک	سریال	نسخه
		BK	GCS	PEDCO	120	ME	DT	0021	D05

ISO Std. 5199 CENTRIFUGAL PUMP DATA SHEET (SI UNIT)										
Corporate name		Centrifugal pump Data sheet							Rev.:	
NISOC									Date:	
Plant:		Service:							Name:	
BINAK Gas Compressor Station		Glycol Manual Pump								
		Ref. Standards:								
		ISO 5199, IPS-M-PM-115								
		Ref. Spec. No.:								
		BK-GCS-PEDCO-120-ME-SP-0004								
No. req.		Pump type	Eq. API-610 Type	Mfr. serial No.	Kind of driver	Drive, type, size	Item No.			
1		Horizontal	OH2		Motor	LV Induction Electric Motor	P-2102			
Operation										
Standby										
Drawings		Installation dimension			Pump weight		Pump Content			
		Assembly pump								
		Assembly shaft seal			Customer		Enquiry No.			
		Auxiliary system					Order No.			
		Piping			Supplier		Proposal No.			
		Shaft seal					Contract No.			
Test (3)		Material (16)	Hydrostatic	Inspection	Perform.	NPSH (7)	Sound Level	Final inspection	Approved documents	
Refer.		ISO 5199	ISO 5199	ISO 5199	ISO 5199	ISO 5199	ISO 5199	ISO 5199	ISO 5199	
Witn. by		Certified	Witnessed	Witnessed	Witnessed	Witnessed	Witnessed	Certified	Certified	

Operating Condition (11)										
Liquid	Type	Glycol (TEG)	Flow	rated	3.30	m³/h	NPSH at rated flow	Plant- NPSHA	9.2	m
Solids	%of mass			normal	3.00	m³/h		Pump- NPSH3		m
				min.		m³/h				rpm
Corrosion by			Minimum flow required			m³/h				%
Op. Temp. (Min/Max)		5 / 50	°C	Inlet gauge pressure	rated	barg	Pump power input rated			kW
pH-value at T <sub>op</sub>		ISO 5199			max.	0.10	barg	Pump power input	rated impeller dia.	kW
Density at T <sub>nom</sub>		1115	kg/m³	Outlet gage pressure rated		1.50	barg		max. impeller dia.	kW
Vapour press. at T <sub>max</sub>		0	bara	Differential pressure rated		1.50	bar	Electric. Driver power output rated (Note 25)		kW
Kinematic vis. at T <sub>min</sub>		85.86	cP	Total head rated		13.70	m	Steam turbine power output rated		kW
Specific heat at T <sub>op</sub>			J/Kg.K	Shut-off head	(Note 34)		m	Performance curve No.		

Construction Features									
Design	(Note 29)	barg	Max. allowable work press	By vendor	barg	Cooling water condition	N.A.		
Number of Stages	1		Test pressure	1.5 x MAWP	barg	Cooling (C) Series (s)	N.A.		
Self priming	NO		Inlet Flange	Size/Position	2" / End	Heating (H), Parallel (p)	C	H	S
Impeller diameter	max	mm		Rating/facing (13)	-/150# / RF	Bearing			
	rated	mm	Outlet Flange	Size/Position	2" / Top	Seal Chamber			
	min	mm		Rating/facing (13)	-/150# / RF	Cooler for seal flush			
Pump length vertical pumps		mm	Vent connection (17)			Oil cooler			
Barrel dia. vertical pumps		mm	Drain connection	-/150# / RF		Flush			Quantity
Casing split			Shaft seal manufacture			Lantern ring			
Casing seal type			Type, size (6)	Mechanical Seal		Mechanical ring			
Impeller type			Flush plan (VTC)	11		Gland/Seal plate			
Casing support			Material code						
Rotation (looking from driver)			Soft packing ring dimension			Coupling (20)	Manufacture		
Axial thrust reduction by			Rad. Bearing				Type, Size		
Total clearance	Impeller	mm	Axial. Bearing	Size			Diameter max		mm
	Bal. Drum	mm	Line shaft bearing				Spacer length		mm
	Shaft bushes	mm	Bearing bracket No.			Baseplate			
	Wear plate	mm	Lubrication			Anchor bolts supplied by	Vendor		
Wall thickness rot sheath / stat. cas			Lubrication device			Driver	Supplied by	Vendor	
						Mounted by	Vendor		

Site and Utility Data (Notes 23,25)										
Location	Partial sides		Outdoor		Unheated		Site data:	Elevation	m	Barometer
Winterization REQ'D	Tropicalization REQ'D						Range of ambient temps: MIN/MAX			5/50 °C
Unusual condition	Dust	Fumes	Others				Relative humidity: MIN/MAX			0/100 %
Driver	Volt.	400	Hertz	50	Phase	3	Max Voltage Variation			± 10%
Type of protection							Max Frequency Variation			± 5%
Temperature rise class / Insulation class							Max Volt. and Frequency Variation together			± 10%
Electric Area Classification	ZONE 2		GROUP II A		TEMP CLASS T4		Starting Method			D.O.L./Close Discharge valve

