



نگهداشت و افزایش تولید میدان نفتی بینک
سطح الارض



احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک

NISOC

شماره پیمان:

MECHANICAL DATA SHEETS FOR POTABLE WATER PUMP

053-073-9184

پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
BK	GCS	PEDCO	120	ME	DT	0025	D03

شماره صفحه: 1 از 5

طرح نگهداشت و افزایش تولید 27 مخزن

MECHANICAL DATA SHEETS FOR POTABLE WATER PUMP (P-2209)

نگهداشت و افزایش تولید میدان نفتی بینک

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

Class: 2 CLIENT Doc. Number: F0Z-708856

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



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053-073-9184

شماره صفحه: 2 از 5

نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادر کننده	بسته کاری	پروژه
D03	0025	DT	ME	120	PEDCO	GCS	BK

REVISION RECORD SHEET

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تکهداشت و افزایش تولید میدان نفتی بینک
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شماره پیمان:
053-073-9184

MECHANICAL DATA SHEETS FOR POTABLE WATER PUMP

پروژه	بسته کاری	صادر کننده	تهیهات	رشته	نوع مدرک	سریال	نسخه
BK	GCS	PEDCO	120	ME	DT	0025	D03

شماره صفحه: 3 از 5

GENERAL NOTES

1. Min. / Max. Design temperature (°c): 5 / 85
2. For electrical motor descriptions, refer to 'Specification For LV Induction Motors' Doc. No. BK-GNRAL-PEDCO-000-EL-SP-0010.
3. 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.
4. Vendor shall submit ITP (Inspection & Testing Plan) with his proposal.
5. The motors, 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.
6. Vendor is requested to confirm the material, or propose appropriate alternative.
7. 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.
8. NPSH test shall be done & witnessed if the margin of NPSHr & NPSHa is less than 1.
9. The Tie-in flanges shall conform to ASME B-16.5.
10. Supplier to indicate which minimum flow pumps can achieve.
11. Pumps shall be designed, fabricated, tested, and inspected in accordance with the requirements of ISO 5199 latest edition.
12. Pump starts with close discharge valve.
13. Electrical motor shall be rated for site condition.
14. The suction & discharge line sizes are 2".
15. 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".
16. Based on project instrumentation specification, these equipments are classified as Type B (Connected to DCS/ESD): Centrifugal Pump Package
17. Pump material shall be selected based on Annex H API 610 11th Edition. (Vendor to confirm)
18. If pump is self venting there is no need for vent.
19. Ultrasonic Test shall be performed for forged shaft.
20. 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.
21. Couplings shall be dry, flexible and spacer type.
22. Bearing temperature shall be measured during mechanical run test.
23. Max. allow. sound press. level shall be 85 d BA.
24. For site conditions refer to Process Basis of Design document. Doc.No. BK-GNRAL-PEDCO-000-PR-DB-0001.
25. For electrical motor descriptions, refer to 'Specification For LV induction Motors' 'Doc. No. BK-GNRAL-PEDCO-000-EL-SP-0010.
26. Power Factor, efficiency, frequent, voltage, frequent variation and voltage variation of motor shall be specified by vendor in data sheet.
27. Max Allowable Pressure at Shut-Off at rated impeller (barg): 2.6
28. Minimum Design Metal Tem (MDMT) = 5 °C.
29. Vendor to provide the pump with mentioned flow rate or minimum available flow rate at market.
30. Allowable external forces and moments on nozzle should be conformed to Spec. No.: BK-GCS-PEDCO-120-ME-SP-0004.
31. All drain and vents (If any) to be manifolded, valved and routed to the skid edge.
32. Range of ambient temperature: Min. ambient temperature: 5 °C, Max. ambient temperature: 50 °C
33. Pumping Temp. (Min. / Max.) (°C): 5 / 50
34. Hydraulic power (Kw): 0.3
35. Min./Max. suction pressure (barg) : -0.05 / 0.15
36. For Instrumentation, Project specification 'Specification For Instrument and Control of package Unit System (PU)' Doc. No. BK-GNRAL-PEDCO-000-IN-SP-0004 and hazardous area classification and other instrument specification which to be attached to MR shall be followed.



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شماره پیمان:

MECHANICAL DATA SHEETS FOR POTABLE WATER PUMP

شماره صفحه: 4 از 5

053-073-9184

نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادرکننده	بسته کاری	پروژه
D03	0025	DT	ME	120	PEDCO	GCS	BK

ISO Std. 5199 CENTRIFUGAL PUMP DATA SHEET (SI UNIT)

Corporate name NISOC		Centrifugal pump Data sheet							Rev.:	
Plant: BINAK Gas Compressor Station		Service: Potable Water Pump							Data:	
		Ref. Standards: ISO 5199, IPS-M-PM-115							Name:	
		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(VTC)		Motor	LV Induction Electric Motor	P-2209				
Standby										
Drawings	Installation dimension		Pump weight		Pump Content					
	Assembly pump		Customer		Enquiry No.		Date			
	Assembly shaft seal		Supplier		Order No.		Date			
	Piping	Auxiliary system		Contract No.		Proposal No.		Date		
	Shaft seal									
Test (4)	Material (17)	Hydrostatic	Inspection	Perform.	NPSH (8)	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 (12)										
Liquid	Potable Water		rated	5.50	m ³ /h	NPSH at rated flow	Plant- NPSHA	8.7 m		
Solids	Type	Flow	normal	5.00	m ³ /h	Pump speed rated	Pump- NPSH3	m		
	%of mass		min.			m ³ /h	Pump efficiency rated	rpm		
Corrosion by			Minimum flow required		m ³ /h	Pump power input rated	%			
Op. Temp. (Min./Max.)	5 / 50	°C	Inlet gauge pressure	rated		barg	Pump power	rated impeller dia.	kW	
pH-value at T _{op}			max.	0.15	barg	input	max. impeller dia.	kW		
Density at T _{norm}	1024	kg/m ³	Outlet gage pressure rated	1.95	barg	Electric. Driver power output rated (25)	kW			
Vapour press. at Max.T	0.1	bara	Differential pressure rated	2.00	bar	Steam turbine power output rated	kW			
Kinematic vis. at T _{norm}	1.6	cP	Total head rated	19.90	m	Performance curve No.				
Specific heat at T _{op}	J/Kg.K		Shut-off head (Note 27)		m					
Construction Features										
Design	barg		Max. allowable work press	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	Outlet Flange	Rating/facing (14)	-150# / RF	Bearing				
	rated	mm		Size/Position	2" / Top	Seal Chamber				
	min	mm		Rating/facing (14)	-150# / RF	Cooler for seal flush				
Pump length vertical pumps	mm		Vent connection (18)			Oil cooler				
Barrel dia. vertical pumps	mm		Drain connection	-150# / RF		Flush	Liquid	Quantity		
Casing split			Shaft seal manufacture			Lantern ring				
Casing seal type			Type, size (7)	Mechanical Seal		Mechanical ring				
Impeller type			Flush plan (VTA)	11		Gland/Seal plate				
Casing support			Material code			Coupling (21)	Manufacture			
Rotation(looking from driver)			Soft packing ring dimension				Type, Size			
Axial thrust reduction by			Rad. Bearing	Type			Diameter max	mm		
Total clearance	Impeller	mm	Axial. Bearing	Size		Spacer length	mm			
	Bal. Drum	mm	Line shaft bearing			Baseplate				
	Shaft bushes	mm	Bearing bracket No.			Anchor bolts supplied by	Vendor			
Wear plate	mm	Lubrication			Driver	Supplied by	Vendor			
Wall thickness rot sheath / stat. cas			Lubrication device			Mounted by	Vendor			
Site and Utility Data (24,26)										
Location	<input type="radio"/> Partial sides <input checked="" type="radio"/> Outdoor		<input checked="" type="radio"/> Unheated		Site data:	Elevation	m	Barometer	mbar	
<input type="radio"/> Winterization REQ'D		<input type="radio"/> Tropicalization REQ'D		Range of ambient temps: MIN/MAX		°C				
Unusual condition		<input type="radio"/> Dust	<input type="radio"/> Fumes	<input type="radio"/> Others		Relative humidity: MIN/MAX		0/100 %		
Driver	Volt.	400	Hertz	50	Phase	3	Max Voltage Variation	± 5%		
Type of protection						Max Frequency Variation		± 2%		
Temperature rise class / Insulation class						Max Volt. and Frequency Variation together		± 5%		
Electric Area Classification	Safe area		D03		Starting Method		D.O.L./Close Discharge valve			



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شماره صفحه: 5 از 5

ISO Std. 5199 CENTRIFUGAL PUMP DATA SHEET (SI UNIT)

Material (VTA)

API class	I-2 (According to API-610)	(6, 17)			
Casing		Bearing bush			Mecan. Seal
Discharge casing		Balance disc-drum			
Suction casing		Bal. counter disc-drum bus.			
Stage casing		Contrain.shell / Stat.casing			
Suction impeller		Rotor sheath / can			
Impeller		Magnet material			Stuffing box
Diffuser	N.A.	Barrel			
Wear ring casing		Column pipe			
Wear ring impeller		Bearing bracket			
Wear plate / lining		Motor stool			Shaft sleeve
Case bush		Coupling			Throat bush
Casing gaskets		Coupling guard			Paint
Shaft		Base plate			

According to " Specification for Painting:
Doc.No: BK-GNRL-PEDCO-000-PI-SP-0006.

Remarks

For P&ID refer to BK-GCS-PEDCO-120-PR-PI-0024

Customer		Supplier	
Prepared (Data / Dep/ Signature)	Checked (Data / Dep/ Sign.)	Prepared (Data / Dep/ Signature)	Checked (Data / Dep/ Sign.)