طرح نگهداشت و افزایش تولید 27 مخزن

MECHANICAL DATA SHEETS FOR GLYCOL DRAIN PUMP
(P-2104)
نگهداشت و افزایش تولید میدان نفتی بینک

Rev.	Date	Purpose of Issue / Status	Prepared by:	Checked by:	Approved by:	CLIENT Approval
D03	SEP. 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	DEC. 2021	IFC	H. Adineh	M. Fakharian	M. Mehrshad	

Class: 2

CLIENT Doc. Number: F0Z-708863

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

REVISION RECORD SHEET

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1	x	x	x	x	
2	x	x	x	x	
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GENERAL NOTES

1 Min. / Max. Design temperature (°c): 5 / 85

2 For electrical motor descriptions, refer to 'Specification For LV and MV induction Motors' Doc. No. BK-GNRAL-PEDCO-000-EL-SP-0010 & 0017 .

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 & 0009 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.).

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 automatically with open delivery valve.

13 The discharge line size is 2".

14 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".

15 Based on project instrumentation specification, these equipments are classified as Type B (Connected to DCS/ESD): Centrifugal Pump Package

16 Pump material shall be selected based on Annex H API 610 11th Edition. (Vendor to confirm)

17 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.

18 Couplings shall be dry, flexible and spacer type.

19 Bearing temperature shall be measured during mechanical run test.

20 Vendor to provide the pump with mentioned flow rate or minimum available flow rate at market.

21 Vapour pressure at max. pumping temperature is 0 bara.

22 Max Allowable Pressure at Shut-Off at rated impeller (barg): 2.6

23 For site conditions refer to process basis of design document; Doc.No: BK-GNRAL-PEDCO-000-PR-DB-0001.

24 Minimum Design Metal Tem (MDMT)= 5 (°c)

25 MAX. allow. sound press. level shall be 85 dBA.

26 Allowable external forces and moments on nozzle should be conformed to Spec. No.: BK-GCS-PEDCO-120-ME-SP-0004.

27 All drain and vents (If any) to be manifolded, valved and routed to the skid edge.

28 Min./Max. pumping temperature (℃): 5 / 50

29 Viscosity At Min. / Max. Temp.(cP): 85.86 / 25.06

30 Suction Pressure (Min. / Max.) (barg): 0.11 / 0.2

31 Hydraulic Power (kw): 0.18

32 Glycol drain pump is installed on Glycol sump drum. for further data refer to related P&ID; BK-GCS-PEDCO-120-PR-PI-0025 and Calculation Note For Pumps ; BK-GCS-PEDCO-120-PR-CN-0001.

33 Minimum flow shall be specified by vendor.

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

شماره پیمان:	MECHANICAL DATA SHEETS FOR GLYCOL DRAIN PUMP								شماره صفحه: 4 از 5
053-073-9184	پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	
	BK	GCS	PEDCO	120	ME	DT	0035	D03	

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

Corporate name: NISOC	Centrifugal pump Data sheet	Rev.:
		Data:
		Name:

Plant: BINAK GCS

Service: GLYCOL DRAIN PUMP
Ref. Standards: ISO 5199
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.
Operation	1	Vertical	VS4 (VTC)		Motor	LV Induction Electric Motor	P-2104
Standby							

Drawings			Pump weight		Pump Content	
	Installation dimension		Customer	Enquiry No.		Date
	Assembly pump			Order No.		Date
	Assembly shaft seal		Supplier	Proposal No.		Date
	Piping: Auxiliary system			Contract No.		Date
	Piping: Shaft seal					

Test (4)	Material (16)	Hydrostatic	Inspection	Perform.	NPSH (8)	Sound Level	Final inspection	Approved documents
Refer.	ISO 5199	ISO 5199	ISO 5199	ISO 5199	ISO 5199	(26)	ISO 5199	ISO 5199
Witn. by	Certified	Witnessed	Witnessed	Witnessed	Witnessed	Witnessed	Certified	Certified

Operating Condition (12)

Liquid	TEG		Flow (Note 33)	rated	3.30	m³/h	NPSH at rated flow	Plant- NPSHA	10.4 m
Solids: Type				normal	3.00	m³/h		Pump- NPSH3	m
Solids: %of mass				min.		m³/h	Pump speed rated		rpm
Corrosion by			Minimum flow required			m³/h	Pump efficiency rated		%
Op. Temp. (Min./Max.)	5 / 50	°C	Inlet gauge pressure (30)	rated		barg	Pump power input rated (2)		kW
pH-value at T_{op}				max.	0.20	barg	Pump power input	rated impeller dia.	kW
Density at T_{op}	1115	kg/m³	Outlet gage pressure rated		2.10	barg		max. impeller dia.	kW
Vapour press. at T_{op}	(21)	bara	Differential pressure rated		2.00	bar	Electric. Driver power output rated		kW
Kinematic vis. at T_{op}	(29)	cP	Total head rated		18.30	m	Steam turbine power output rated		kW
Specific heat at T_{op}		J/Kg.K	Shut-off head		(22)	m	Performance curve No.		

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Construction Features

Design		barg	Max. allowable work press		By vendor	barg	Cooling water condition		N.A.			
Number of Stages			Test pressure		1.5 x MAWP	barg	Cooling (C) Series (s)		N.A.			
Self priming			Inlet Flange	Size/Position			Heating (H), Parallel (p)	C	H	S	P	Quantity
Impeller diameter: max		mm		Rating/facing			Bearing					
Impeller diameter: rated		mm	Outlet Flange	Size/Position	2" / Up		Seal Chamber					
Impeller diameter: min		mm		Rating/facing (13)	150# / RF		Cooler for seal flush					
Pump length vertical pumps		mm	Vent connection				Oil cooler					
Barrel dia. vertical pumps		mm	Drain connection				Flush		Liquid			Quantity
Casing split			Shaft seal manufacture				Lantern ring					
Casing seal type			Type, size (7)		Mech. Seal		Mechanical ring					
Impeller type			Flush plan		11 (VTC)		Gland/Seal plate					
Casing support			Material code				Coupling (18): Manufacture					
Rotation(looking from driver)			Soft packing ring dimension				Coupling (18): Type, Size					
Axial thrust reduction by			Rad. Bearing	Type			Coupling (18): Diameter max					mm
Total clearance: Impeller		mm	Axial. Bearing	Size			Coupling (18): Spacer length					mm
Total clearance: Bal. Drum		mm	Line shaft bearing				Baseplate					
Total clearance: Shaft bushes		mm	Bearing bracket No.				Anchor bolts supplied by		Vendor			
Total clearance: Wear plate		mm	Lubrication				Driver: Supplied by		Vendor			
Wall thickness rot sheath / stat. cas			Lubrication device				Driver: Mounted by		Vendor			

Site and Utility Data (23)

Location	❍ Partial sides	● Outdoor	● Unheated	Site data:	Elevation	m	Barometer		mbar
❍ Winterization REQ'D		❍ Tropicalization REQ'D		Range of ambient temps: MIN/MAX					`C
Unusual condition	❍ Dust	❍ Fumes	❍ Others	Relative humidity: MIN/MAX					%
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	Zone 1 , IIB , T3					Starting Method		D.O.L.(Open Discharge Valve)	

NISOC

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

شماره پیمان:

MECHANICAL DATA SHEETS FOR GLYCOL DRAIN PUMP

053-073-9184

پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
BK	GCS	PEDCO	120	ME	DT	0035	D03

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

Material (VTC)

API class S-8 (According to API-610) (6, 16)

Casing		Bearing bush		Mecan. Seal	Gland plate & gasket	
Discharge casing		Balance disc-drum			Rotor ring / Inner/outer	
Suction casing		Bal. counter disc-drum bus.			Static ring / Inner/outer	
Stage casing		Contrain.shell / Stat.casing			Spring or bellow	
Suction impeller		Rotor sheath / can			Seal metal parts	
Impeller		Magnet material			Rotary & Static ring seats	
Diffuser		Barrel		Stuffing box	Gland Plate	
Wear ring casing		Column pipe			Soft packing ring	
Wear ring impeller		Bearing bracket			Lantern ring	
Wear plate / lining		Motor stool		Shaft sleeve		
Case bush		Coupling		Throat bush		
Casing gaskets		Coupling guard		Paint	According to "Specification for Painting"; Doc. No. BK-GNRAL-PEDCO-000-PI-SP-0006.	
Shaft		Base plate				

Sump Arrangement (Note 32)

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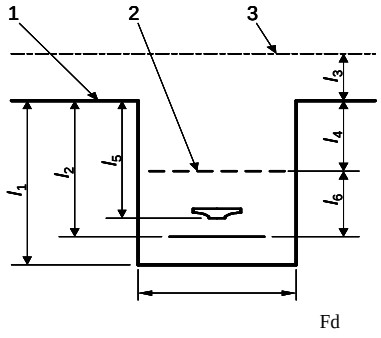
Sump Dimensions:

Grade Elevation	1		m
Low Liquid Level	2	0.3	m
C.L. Of Discharge	3		m
Sump Depth	l_1	1.1	m
Pump Length	l_2		m
Grade to Disch.	l_3		m
Grade to Low Liquid Level	l_4		m
Grade to 1st Stg Impl'r.	l_5		m
Submergence Req'd	l_6		m
Sump Diameter	Fd		m



Remarks

For Pump schematic and P&ID refer to BK-GCS-PEDCO-120-PR-PI-0025. and calculation note for pumps; BK-GCS-PEDCO-120-PR-CN-0001.

AUG. 2022

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