

 NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج کولرهای هوایی ایستگاه تقویت فشار گاز بینک (قرارداد /BK-HD-GCS-CO-0015_02)									
شماره پیمان: 053 – 073 – 9184	Process Data Sheet for AE-2101 (A/B/C)							شماره صفحه : 1 از 6		
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	BK	GCS	AA	120	PR	DS	0001			V02

طرح نگهداشت و افزایش تولید 27 مخزن

Process Data Sheet for AE-2101 (A/B/C)

نگهداشت و افزایش تولید میدان نفتی بینک

V02	Aug.2024	IFA	AAC	M.FAKHARIAN	M.SADEGHIAN	
V01	Mar.2024	IFA	AAC	M.FAKHARIAN	S.FRAMARZPOUR	
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Status:

IFA: Issued For Approval

IFI: Issued For Information

AFC: Approved For Construction

	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج کولرهای هوایی ایستگاه تقویت فشار گاز بینک (قرارداد BK-HD-GCS-CO-0015_02)																							
	Process Data Sheet for AE-2101 (A/B/C) <table border="1"> <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>V02</td> <td>0001</td> <td>DS</td> <td>PR</td> <td>120</td> <td>AA</td> <td>GCS</td> <td>BK</td> </tr> </table>							نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادرکننده	بسته کاری	پروژه	V02	0001	DS	PR	120	AA	GCS	BK	شماره صفحه : 2 از 6
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V02	0001	DS	PR	120	AA	GCS	BK																	
شماره پیمان: 053 - 073 - 9184																								

REVISION RECORD SHEET

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	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج کولرهای هوایی ایستگاه تقویت فشار گاز بینک (قرارداد BK-HD-GCS-CO-0015_02)									
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1. INTRODUCTION

Binak oilfield in Bushehr province is a part of the southern oilfields of Iran, is located 20 km northwest of Genaveh city.

With the aim of increasing production of oil from Binak oilfield, an EPC/EPD Project has been defined by NIOC/NISOC and awarded to Petro Iran Development Company (PEDCO). Also PEDCO (as General Contractor) has assigned the EPC-packages of the Project to "Hirgan Energy - Design and Inspection" JV.

GENERAL DEFINITION

The following terms shall be used in this document.

CLIENT:	National Iranian South Oilfields Company (NISOC)
PROJECT:	Binak Oilfield Development – Manufacturing (w/Engineering & Material Supply) of Air Coolers
EPD/EPC CONTRACTOR (GC):	Petro Iran Development Company (PEDCO)
OWNER:	OWNER is collectively refer to National Iranian South Oil Company (NISOC) and Petro Iran Development Company (PEDCO)
EPC CONTRACTOR:	Joint Venture of : Hirgan Energy – Design & Inspection(D&I) Companies
VENDOR:	Aban Air Cooler (AAC)
EXECUTOR:	Executor is the party which carries out all or part of construction and/or commissioning for the project.
THIRD PARTY INSPECTOR (TPI):	Third Party Inspector
SHALL:	Is used where a provision is mandatory.
SHOULD:	Is used where a provision is advisory only.
WILL:	Is normally used in connection with the action by CLIENT rather than by an EPC/EPD CONTRACTOR, supplier or VENDOR.
MAY:	Is used where a provision is completely discretionary.

 NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج کولرهای هوایی ایستگاه تقویت فشار گاز بینک (قرارداد BK-HD-GCS-CO-0015_02)							 
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	BK	GCS	AA	120	PR	DS	0001	V02

rev.	AAC	DATA SHEET	Date : 2024.Aug.05
		AIR COOLED HEAT EXCHANGER	Rev : 2-New design (Totally Revised)
		ABAN AIR COOLER CO	CASE: 00012-AC-3991
		Customer / Purch. (PEDCO) / (NISOC)	Item no.: AE-2101 (A/B/C)
		Plant location Binak oilfield	Winter case
		Service 1st Stage Gas Compression Cooler	No. Units: 3
		Plot size(W,L) [m] 1.90 x 3.8 (note2)	No.of bay: 1
		Surface / unit-Finned [m2] 721.45	[m2] 31.536
		Heat exchanged [KW] 283.1 (note 1)	[C] 26.1
		Transf. rate-finned [W/m2 .k] 18.47	[W/m2k] 472.89 / 422.49
		PRODUCT SIDE	
		Fluid Name Hydrocarbon	IN OUT
		IN OUT	Density (Liq) [kg/m3]
		Total Fluid [kg/h] 7585 x 1.1 (note 1)	Density (vap) 13.169 15.723 [kg/m3]
		Temperature [C] 116 60	Spec.Heat (Liq) [kJ/(kg.°C)]
		Vapor [kg/h] 8343.5 8343.5	Spec.Heat (vap) 2.249 2.1161 [kJ/(kg.°C)]
		Liquid [kg/h]	Conduct. (Liq) [W/Mk]
		N condensed [kg/h]	Conduct. (vap) 0.0428 0.0351 [W/Mk]
		Steam [kg/h]	Viscosity (Liq) [cp]
		Water [kg/h]	Viscosity (Vap) 0.0145 0.0127 [cp]
		Inlet pressure [barg] 18 (note 6)	Velocity 17.65 14.78 [m/s]
		Fouling resist.[m2.k/w] 0.0002	Allo/Calc. Press.Drop 0.700 / 0.4 [bar]
		AIR SIDE	
		AirQuantity, Total 23.88 [m3/s]	Face Velocity: 2.96 [m/s]
		AirQuant./Fan 11.94 [m3/s]	Altit. / Min. Des.Amb.: 12.5 / 5 [m]/[C]
		Static pressure 151.35 [Pa]	Temp.In / Out : 50.26 / 61.44 [C]
		DESIGN	
		Design pressure 22 [Barg]	Code Requirements ASME VIII DIV.1 ; API 661
		Design temperature 155 [C]	TUBE
		Test pressure 28.60 [Barg]	Material SA-213 TP316L
		BAY width [m] 1.9	Outside Diameter 25.4 [mm]
		Bundle Size 1.86 x 3.8	Wall Thickness 1.651 [mm]
		N .Bay 1	N .Bundle 104
		N .Bundles / Bay 1	Length 3.8 [m]
		N .Tube Rows 4	Pitch 61 [mm]
		N .Passes 4	FIN
		Tube slope 1% on Last pass	Type EXTRUDED
		HEADER	Material ALUMINIUM alloy 1060 - O
		Type Plug	Outside Diameter 57.15 [mm]
		Material SA-240 TP316L	Stock Thick. 0.48 [mm]
		Header Design / SPLIT Shoulder/No	FPM 433.1
		Plug Mat SA 182 F316L	MISCELLANEOUS
		Gasket Mat Solid Metal	Structural Mounting Ground
		Corrosion Allow. 0 [mm]	Bundle Frame H.D.G
		Qty / Size nozzle IN 1 X 6" (80S)	Louvers Yes, (Manual)
		Qty / Size nozzle OUT 1 X 6" (80S)	Vibration switches Yes, EExd, IIB T3 (IP 65)
		Rating & Facing (in/out) 300 RF	Steam Coil No
		TI/PI Yes (1") / Yes (3/4")	Recirculation System No
		Vent / Drain Yes (2") / Yes (2") LWN #300	Tube / Tubesheet Connection. Expanded + Strength weld
		MECH. EQUIPMENT	
		FAN	ELECTRIC MOTOR
		N .Bay 2	N .Bay 2
		N .autovvariable/bay 50%	KW / Driver 5.5
		rev / min 696	rev / min 1500
		Diameter 1372 mm	Enclosure EExd, IIB T3 (IP 55)
		N .Blades 4	Volt. Phase, Cycle 400-3-50
		Material, Blade AL	SPEED REDUCER
		Material, Hub Steel/Alu	Type V-Belt
		KW / Fan, Absorb. 3.4	N .Bay 2
		SPL@ 1m beside. fan ≤85 [dB(A)]	Service Factor 1.8
			Ratio 2.16
		NOTES:	
		1- 10% over design on duty / flow has been considered.	
		2- Plot size is without considering side walkways.	
		3- Air side fouling factor has been considered equal to 0.00035 m2.K/w.	
		4- Thechnical Bid is in compliance with NACE MR 0175/ISO 15156 and Technical Specification for Material Requirements in Sour service Doc. No. BK-GNRL-PEDCO-000-PI-SP-0008, IPS-MPM-200.	
		5- Maximum allowable nozzle load = 3 x API.	
		6-18 bar g considered as an inlet pressure based on PFD document .no:BK-GCS-HY-120-PR-PF-0001-V03	
		7-Deleted	