



NISOC

نگهداشت و افزایش تولید میدان نفتی بینک  
سطح الارض

احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک

MECHANICAL DATA SHEETS FOR 1st STAGE G.C. SUCTION DRUMS



شماره پیمان:

۰۵۳ - ۰۷۳ - ۹۱۸۴

پروژه

BK

بسته کاری

GCS

صادرکننده

PEDCO

تسهیلات

120

رشته

ME

نوع مدرک

DT

سریال

0002

نسخه

D04

شماره صفحه: ۱ از ۸

## طرح نگهداشت و افزایش تولید ۲۷ مخزن

## MECHANICAL DATA SHEETS FOR 1st STAGE G.C. SUCTION DRUMS

## نگهداشت و افزایش تولید میدان نفتی بینک

Rev.	Date	Purpose of Issue / Status	Prepared by:	Checked by:	Approved by:	CLIENT Approval
D04	JUL.2023	IFA	H.Adineh	M.Fakharian	A.M.Mohseni	
D03	SEP.2022	IFA	H.Adineh	M.Fakharian	M.Mehrshad	
D02	JUL.2022	IFA	H.Adineh	M.Fakharian	M.Mehrshad	
D01	JAN. 2022	IFA	H.Adineh	M.Fakharian	M.Mehrshad	
D00	SEP.2021	IFC	H.Adineh	M.Fakharian	Sh.Ghalikar	

Class: 1

CLIENT Doc. Number: F0Z-708833

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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شماره پیمان:

۰۵۳ - ۰۷۳ - ۹۱۸۴

نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادرکننده	بسته کاری	پروژه
D04	0002	DT	ME	120	PEDCO	GCS	BK

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REVISION RECORD SHEET

Page	D00	D01	D02	D03	D04
1	X	X	X	X	X
2	X	X	X	X	X
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شماره پیمان:

۰۵۳ - ۰۷۳ - ۹۱۸۴

پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
BK	GCS	PEDCO	120	ME	DT	0002	D04

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### General Notes

Rev

- The Asterisk \* denotes information and/or confirmation required from VENDOR.
- The Vendor shall be fully responsible for the complete mechanical design, preparing calculation book and supply of the vessel.
- VENDOR shall include for the services of a independent verification body for mechanical design, stage inspection, testing and stamping of the equipment (if possible).
- Painting and coating (internal & external) shall be as per project 'Specification for Painting', Doc. No. BK-GNRAL-PEDCO-000-PI-SP-0006 and Specification for Lining', Doc. No. BK-GNRAL-PEDCO-000-PI-SP-0007.
- Flanges shall comply with ASME B16.5. Nozzle bolt holes shall straddle the natural centrelines for horizontal nozzles. VENDOR to confirm maximum allowable nozzle loads and moments (RF: Raised Face, WN: Welding Neck)
- All reinforcement pads shall have 1/4" (6mm) tell-tale hole and 1/8" (3mm) vent hole as per Standard Detail Drawing For Pressure Vessels and Heat Exchangers', Doc. No. BK-GNRAL-PEDCO-000-ME-DW-0001".
- Manways shall be supplied complete with blind flange, external grab handles, internal grab handle and ladder rungs, nuts, bolting, gasket and proof load test davits. Davits shall be proof load tested on the vessels to 1.5 x Safe Working Load (SWL) and shall be marked accordingly.
- All external bolts and nuts shall be hot dip galvanized. Internal bolts and nuts shall be stainless steel.
- Loads at support base, Shall be calculated and determined by vendor.
- Access Ladder & Platform to be considered .
- All dimensions shown are in mm unless otherwise indicated. All nozzle sizes are in inch.
- All material, corrosion allowance and their suitability for the process fluid at design pressure and temperature to be confirmed by vendor.
- DEMISTER specification will be finalized later.
- All nozzle locations and orientations will be finalized later.
- Instrumentation items are excluded from vendor's scope of supply.
- Any changes in material of construction, location & orientation of the nozzles shall be confirmed by client.
- All materials shall be new and unused.
- Fabrication tolerances for vessel shall be in accordance with requirement of ASME code.
- Location and number of lifting lugs on vessels shall be specified on VENDOR drawing.
- All items shall be clearly match marked against vessel drawings to facilitate erection.
- All external attachments directly welded to the pressure part shall be the same material as vessel grade.
- Vendor shall supply details of all welding connections and give general specification of used materials.
- For equipment requiring PWHT, final inspection and acceptance by the CLIENT or its nominated representative shall only be undertaken against NDE after PWHT. All weldings shall be made before vessel heat treatment (if any).
- Equipment packaging, preparation for shipment and delivery shall be in accordance with the project Packing, Marking, Transportation Procedure Doc. No. "BK-GNRAL-PEDCO-000-QC-PR-0045".
- Specified accessories and attachments shall be supplied by vendor.
- Gasket shall be spiral wound type, graphite filled with inner ring and outer ring S.S.316.
- Fire proofing requirement will be specified as per result of fire proofing zone layout. "Area Classification: Zone 2, IIB, T3"
- 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.
- Two M12 earthing lugs shall be provided on vessel support. Material of Earthing lugs shall be S.S. 316.



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General Notes (Cont'd)

D04

Rev

30. For standard detail of Earth lug execution refer to the Project "Standard Detail Drawing For Pressure Vessels and Heat Exchangers Doc. No. BK-GNRAL-PEDCO-000-ME-DW-0001".
31. Elliptical heads shall be Ultrasonic Tested for LAMINATION after forming.
32. The projection of equipment's nozzles should be considered as per 'Standard Detail Drawing For Pressure Vessels and Heat Exchangers', Doc. No. BK-GNRAL-PEDCO-000-ME-DW-0001". Projection of Horizontal & Vertical nozzles is from tangent line and centerline respectively.
33. The elevation of equipment's nozzels should be specified as follows :  
I. For vertical vessels : from bottom T.L.  
II. For horizontal vessels : from Left T.L.
34. Nozzles and flanges shall be suitably supported and reinforced based on nozzle loads provided in project Specification for Pressure Vessels, Document No. BK-GNRAL-PEDCO-000-ME-SP-0001.
35. Prior to sealing the vessel for shipping and storage, the inside surface of the equipment shall be 100% visually inspected. Internal surfaces shall be clean and thoroughly dried. The CLIENT or its nominated representative shall witness the cleanliness of internal surfaces. Flange faces shall be protected by wooden or plastic dummy flanges.
36. Minimum requirement for pre-commissioning, commissioning, start up and two years operation and spare parts shall be in accordance with document E&C-QC-SP-1.
37. Lifting Lugs / trunnions shall be provided to facilitate a single point lift. If a single point lift cannot be achieved without the use of a lifting beam, then VENDOR shall provide a suitable, certified, lifting beam.
38. Design pressure specified is at top of vessels. VENDOR design shall include static head for vessels flooded with specific gravity of the handled liquid.
39. VENDOR is to maximize shop fabrication based on the following transportation limits:  
- Maximum weight: 96 tonnes  
- Maximum load per axle: 12 tonnes  
- Maximum length: 50.0 m  
- Maximum width: 5.0 m  
- Maximum height: 5.2 m  
For items with dimensions and weights greater than the road capacity specified above, VENDOR may be required to split the package into several components.
40. Welded carbon and carbon manganese steels for vessel shall comply with the following :  
Carbon content shall not exceed 0.23%.  
Based on the ladel analysis, below equation shall be satisfied.  
 $C_{eq} = C + \frac{Mn}{6} + \frac{(Cr + Mo + V)}{5} + \frac{(Cu + Ni)}{15} < 0.42 \%$
41. All carbon steel material shall be fully killed, fine grain treated and supplied in the normalized condition.
42. VENDOR to advise (VTA) internal for inlet nozzle.

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BK	GCS	PEDCO	120	ME	DT	0002	D04

شماره صفحه: ۵ از ۸

Mech. Data Sheet For 1st Stage G.C. Suction Drums (V-2101 A/B/C) / sheet 1 of 4

Rev	DATA SHEET				Rev
1	Description	: 1st Stage G.C. Suction Drums	Quantity	: 3 Set	
2	Tag No.	: V-2101 A/B/C			
3	Type	: Pressure Vessel			
4	Process Design Data				
5	Contents		Corrosive / Erosive		CO2, H2S
6	Operating Temp. (°C)	19.02 ~ 36.92	Liquid Flow (kg/h)		
7	Operating Press. (barg)	5.1	Vap. Molec. Weight (kg/kmol)		
8	Gas Flow (kg/h)		Liquid Sp. Gravity		0.005969
9	Liquid Viscosity (cP)		Service		Sour HC
10	Mechanical Design Data				
11	Design Temp. (°C)	85	Vessel Orientation		Vertical
12	Design Press. (barg)	F.V / 22	HHLL (mm)		1100
13	Test Press. (barg)	Per Code & Specification	Nor. Liquid Vol. (m³)		
14	Internal Vacuum (barg)	-	In. Dia. Of Boots (mm)		-
15	In. Dia. of Shell (mm)	900	Boot Length (mm)		-
16	Tan/Tan Dim. (mm)	3000	Boot Head Type		-
17	Vessel Head Type	2:1 Elliptical	Corr. Allowance (mm)		6
18	Shell Wall Thk. (mm)	*	Joint Efficiency		0.85 (Shell) / 1 (Head)
19	Head Wall Thk. (mm)	*(After Forming)	Ambient Temp. (°C)		
20	Seismic Design	Site Clas: D, Code: ASCE 7-10	MDMT (°C)		5
21	Wind Design	Speed: 120 Km/hr (Max.), Code: ASCE 7-10	Insulation Required		NO
22	Materials				
23	Code	ASME II / ASTM	Nozzle Necks:		A 106B
24	Shell / Heads	A 516 Gr. 60 N	Pipes		A 106B
25	Internal Welded Parts	A 516 Gr. 60 N	Plates		A 516 Gr.60 N
26	Lining / Cladding	P3	Forgings		A 105 N
27	Leg / Pad	A 283 Gr. C / A 516 Gr. 60 N	Flanges		A 105 N
28	Platform Gratings	Hot Dip Galvanized C.S.	Fittings		A 234 Gr. WPB
29	Gaskets	Note 26	External Bolts		A193 Gr B7M (Note 8)
30	Lifting Lugs	A 516 Gr.60 N / A 283 Gr. C	External Nuts		A194 Gr 2HM (Note 8)
31	Reinforcing Pads	A 516 Gr.60 N	Internal Bolts		A193 Gr B8M (Note 8)
32	Ladder & Platform	C.S.	Internal Nuts		A194 8M (Note 8)
33	Internal Removable Parts	S.S	Name Plate		S.S
34	REFERENCE STANDARDS & DOCUMENTS				
35	Mechanical Design Code		ASME Sec VIII Div 1, IPS-G-ME-150		
36	Specification for Pressure Vessels		BK-GNRAL-PEDCO-000-ME-SP-0001		
37	Process Basis of Design		BK-GNRAL-PEDCO-000-PR-DB-0001		
38	Piping & Instrument Diagram (P&ID)		BK-GCS-PEDCO-120-PR-PI-0006		
39	Specification for Painting		BK-GNRAL-PEDCO-000-PI-SP-0006		
40	Specification for Lining		BK-GNRAL-PEDCO-000-PI-SP-0007		
41	Specification for Insulation		BK-GNRAL-PEDCO-000-PI-SP-0019		
42	Specification For Material Requirements in Sour service		BK-GNRAL-PEDCO-000-PI-SP-0008 (Note 28)		
43	Fabrication and Inspection Requirements				
44	Inspection Authority	TPI & Client			
45	Material Certification	In Accordance with BS EN 10204:2004, Type 3.1, Minimum for Pressure Containing and Attachments			
46	Hydro Test Medium	Water	Hydro Test Procedure		Yes; Per Code & Spec. Requirements
47	Post Weld Heat Treatment	Yes, Process Reason	PT		100%
48	MT	100 % on Lifting Lug Fillet Welds	UT		Yes; Per Code & Spec. Requirements
49	RT	100 % On T-Joints and Head Joints Butt-Welds, Spot On Shell Longitudinal and Circumferential Joints Butt-Welds, 100 % On Nozzle Neck to Flange & Fabricated Nozzle Neck Longitudinal Butt-Welds,			
50	RT Report	Yes; Per Code & Spec. Requir.	PT Report		Yes; Per Code & Spec. Requirements
51	MT Report	Yes; Per Code & Spec. Requir.	UT Report		Yes; Per Code & Spec. Requirements
52	Fabrication Quality Control Plan (With Offer)				Yes
53	Welding Procedure Review / Approval				Yes
54	Surface Preparation & Coating	Specification for Painting Doc. No.BK-GNRAL-PEDCO-000-PI-SP-0006			
55		Specification for Lining Doc. No.BK-GNRAL-PEDCO-000-PI-SP-0007			
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BK	GCS	PEDCO	120	ME	DT	0002	D04

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Mech. Data Sheet For 1st Stage G.C. Suction Drums (V-2101 A/B/C) / sheet 2 of 4

ACCESSORIES , NOZZLES LIST & LOADS @ BASE

Accessories & Attachments (Note 25)

1	Supporting Saddles	No	Name Plate Bracket	Yes
2	Access Ladder & Platform (Note 10)	Yes	Name Plate	Yes
3	Insulation Support	No	Earthing Lug (Note 30)	Yes
4	Insulation	No	Tailing Lug	Yes
5	Insulation Cover	No	Cathodic Protection (Sacrificial Anodes)	No
6	Fireproofing Support (Note 27)	No	Anchor Bolts	No
7	Lifting Lugs	Yes	Instrumentations	No
8	Internal/ External Clips	Yes	Skid	No
9	Template	No	Support Clips	Yes
10	Boot	No	Vortex Breaker	Yes
11	Davit for Manhole	Yes	Rung & Grip	No
12	Internal Lining (By Painting)	Yes	Heating Coil	No
13	Internal Demister Pad (Note 13)	Yes		

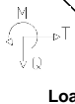
Nozzles List \* (Note 1)



Mark	Qty.	Description	Pipe			Flange			Proj. (mm) (Note 32)	Reinforcement		Remarks
			Size	Thk.	Sch.	Type	Rate.	Face		Thk.	O.D.	
A	1	Inlet	8"			WN	#300	RF	720*	*	380*	Note 6
B1	1	Gas Outlet	8"			WN	#300	RF	500*	*	380*	Note 6
B2	1	Liquid Outlet	2"			WN	#300	RF	450*			
V	1	Vent	2"			WN	#300	RF	See DWG			
M	1	Manhole	20"			WN	#300	RF	820*	*	870*	Note 6
S	1	Utility Connection	2"			WN	#300	RF	660*			
Deleted												
L 1,2	2	Stand Pipe	3"			WN	#300	RF	670*	*	210*	Note 6
L 3,4	2	Level Transmitter	2"			WN	#300	RF	660*			
PSV	1	Pressure Safety Valve	2"			WN	#300	RF	660*			
PI	1	Pressure Gauge	2"			WN	#300	RF	660*			
T	1	Temperature Gauge	2"			WN	#300	RF	660*			
P 2,3	2	PDIT	2"			WN	#300	RF	660*			

Wind and Seismic Loads at Base \* Note(9)

Load Condition	Empty Condition			Operating Condition			Testing Condition		
	Max. Shear @ Base (Kg)	Max. Moment @ Base (Kg.m)	Weight (Kg)	Max. Shear @ Base (Kg)	Max. Moment @ Base (Kg.m)	Weight (Kg)	Max. Shear @ Base (Kg)	Max. Moment @ Base (Kg.m)	Weight (Kg)
WIND									
SEISMIC									



Load Type



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MECHANICAL DATA SHEETS FOR 1st STAGE G.C. SUCTION DRUMS



شماره پیمان:

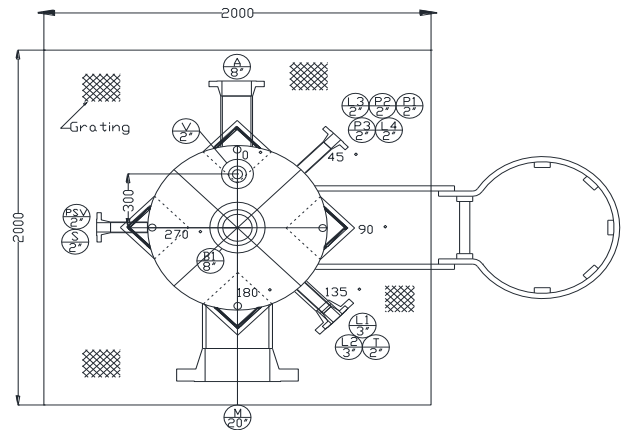
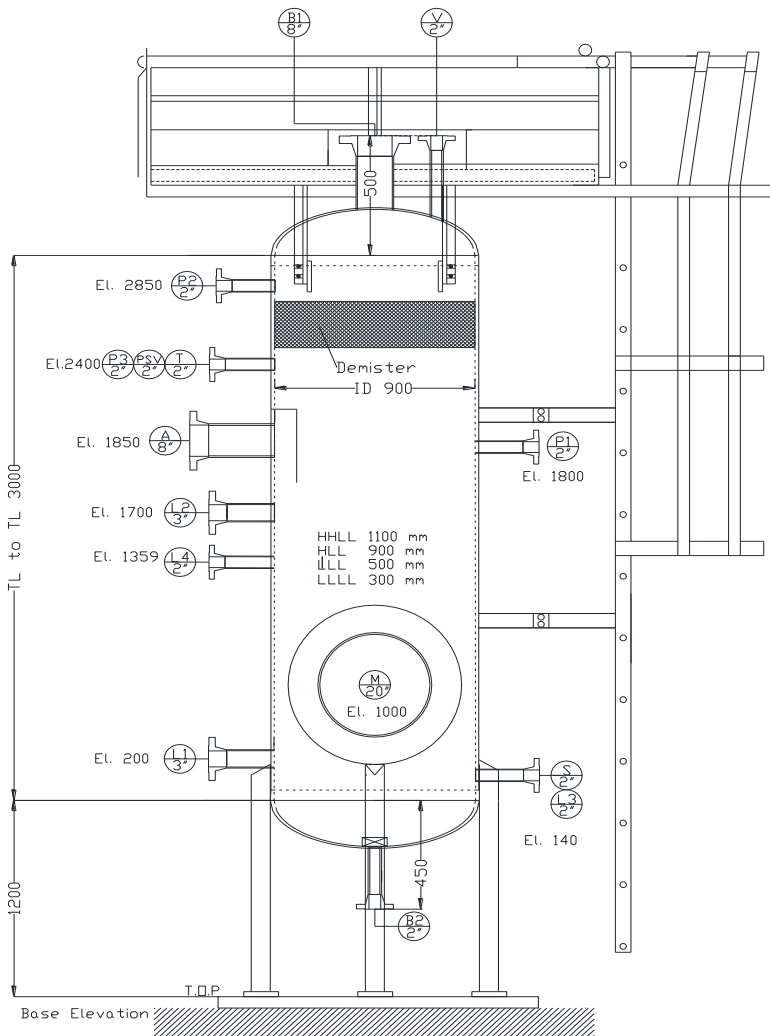
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پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
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Mech. Data Sheet For 1st Stage G.C. Suction Drums (V-2101 A/B/C) / sheet 3 of 4

Sketch



Orientation View  
Orientation View will be finalized later by piping department

Elevation View  
Elevation View will be finalized later by piping department

All dimensions are in mm.



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نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادر کننده	بسته کاری	پروژه
D04	0002	DT	ME	120	PEDCO	GCS	BK

شماره صفحه: ۸ از ۸

Mech. Data Sheet For 1st Stage G.C. Suction Drums (V-2101 A/B/C) / sheet 4 of 4

Rev.	WEIGHT						Rev.
1	<b>WEIGHT CONTROL DATA SHEET</b> <b>SI UNIT *</b>			<b>1/1</b>			
2							
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5							
6	Service :	<i>1st Stage G.C. Suction Drums</i>			Location :	<i>Bushehr (Binak Oilfield)</i>	
7	Type :				Quotation No. :		
8	No. trains :				Serial No. :		
9	No. stages :						
10	Supplier :						
11	Manufacturer :						
12	Model :						
13	Note: Information to be completed by equipment vendor.						
14							
15							
16	<b>Total weight (kg) *</b>						
17	Fabrication	Erection	Operation	Hydrostatic Test	Removable internal	Ladder & Platform	
18							
19							
20							
21							
22							
23	<b>WEIGHT AND C OF G DATA REQUIRED *</b>						
24	CONDITION	WEIGHT ACCURACY %	WEIGHT (kg)	CENTER OF GRAVITY (mm)			
25				X	Y	Z	
26	Dry						
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30	<b>SKETCH</b>						
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52	<b>NOTES</b>						
53	1) All lifting points to be load tested and certified.						
54	2) Any spreader beam to be load tested and certified.						
55	3) Lifting / rigging plan for skid mounted equipment to be provided by the Vendor.						
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