

 NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک							  	
	MECHANICAL DATA SHEETS FOR 2nd 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 0004	نسخه D03	شماره صفحه: ۱ از ۸

طرح نگهداشت و افزایش تولید ۲۷ مخزن

MECHANICAL DATA SHEETS FOR 2nd STAGE G.C. SUCTION DRUMS

نگهداشت و افزایش تولید میدان نفتی بینک

D03	SEP.2022	IFA	H.Adineh	M.Fakharian	M.Mehrshad	
D02	MAY. 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	
Rev.	Date	Purpose of Issue / Status	Prepared by:	Checked by:	Approved by:	CLIENT Approval

Class: 2 CLIENT Doc. Number: F0Z-708835

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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نگهداشت و افزایش تولید میدان نفتی بینک
سطح الارض

احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک

MECHANICAL DATA SHEETS FOR 2nd STAGE G.C. SUCTION DRUMS



شماره پیمان:

۰۵۳ - ۰۷۳ - ۹۱۸۴


نسخه	سریال	نوع مدرک	رشته	تجهیزات	صادرکننده	بسته کاری	پروژه
D03	0004	DT	ME	120	PEDCO	GCS	BK

شماره صفحه: ۲ از ۸



REVISION RECORD SHEET

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 NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض						 شرکت توسعه پترو ایران		
	احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک MECHANICAL DATA SHEETS FOR 2nd STAGE G.C. SUCTION DRUMS								
شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴	پروژه BK	بسته کاری GCS	صادر کننده PEDCO	تسهیلات 120	رشته ME	نوع مدرک DT	سریال 0002	نسخه D03	شماره صفحه: ۸ از ۳

General Notes	
Rev	
	<ol style="list-style-type: none"> The Asterisk * denotes information and/or confirmation required from VENDOR. Deleted 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 (external) shall be as per project 'Specification for Painting', Doc. No. BK-GNRAL-PEDCO-000-PI-SP-0006. 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 . Deleted All material, corrosion allowance and their suitability for the process fluid at design pressure and temperature to be confirmed by vendor. Deleted All nozzle locations and orientations to 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. For instrument's connections please refer to project "Specification For Instrumentation", Doc. No. BK-GNRAL-PEDCO-000-IN-SP-0001 Doc. No. BK-GNRAL-PEDCO-000-IN-SP-0001 and Instrument Hook-up Diagram ,Doc.No.BK-PPL-PEDCO-320-IN-DG-0002 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" Insulation shall be as per project 'Specification for Insulation', Document No. BK-GNRAL-PEDCO-000-PI-SP-0019. Two M12 earthing lugs shall be provided on vessel support. Material of Earthing lugs shall be S.S. 316

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	احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک MECHANICAL DATA SHEETS FOR 2nd STAGE G.C. SUCTION DRUMS							
شماره پیمان:	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
۰۵۳ - ۰۷۳ - ۹۱۸۴	BK	GCS	PEDCO	120	ME	DT	0004	D03

General Notes (Cont'd)	
Rev	
	<p>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".</p> <p>31. Elliptical heads shall be Ultrasonic Tested for LAMINATION after forming.</p> <p>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.</p> <p>33. The elevation of equipment's nozzels should be specified as follows :</p> <p>I. For vertical vessels : from bottom T.L.</p> <p>II. For horizontal vessels : from Left T.L.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>39. VENDOR is to maximize shop fabrication based on the following transportation limits:</p> <ul style="list-style-type: none"> - 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 <p>For items with dimensions and weights greater than the road capacity specified above, VENDOR may be required to split the package into several components.</p> <p>40. All external attachments directly welded to the pressure part shall be the same material as vessel grade.</p> <p>41. The Vendor shall be fully responsible for the complete mechanical design, preparing calculation book and supply of the vessel.</p> <p>42. All dimensions shown are in mm unless otherwise indicated. All nozzle sizes are in inch.</p> <p>43. Deleted</p> <p>44. DEMISTER specification will be finalized later.</p> <p>45. 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.</p> <p>46. Welded carbon and carbon manganese steels for vessel shall comply with the following :</p> <p>Carbon content shall not exceed 0.23%.</p> <p>Based on the ladel analysis, below equation shall be satisfied.</p> <p>$Ceq. = C + \frac{Mn}{6} + \frac{(Cr + Mo + V)}{5} + \frac{(Cu + Ni)}{15} < 0.42 \%$</p> <p>47. All carbon steel material shall be fully killed, fine grain treated and supplied in the normalized condition.</p>



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MECHANICAL DATA SHEETS FOR 2nd STAGE G.C. SUCTION DRUMS



شماره صفحه: ۵ از ۸

شماره پیمان:

۰۵۳ - ۰۷۳ - ۹۱۸۴

نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادر کننده	بسته کاری	پروژه
D03	0004	DT	ME	120	PEDCO	GCS	BK

Mech. Data Sheet For 2nd Stage G.C. Suction Drums (V-2102 A/B/C) / sheet 3 of 4

Rev	DATA SHEET	Rev
1	Description : <i>2nd Stage G.C. Suction Drums</i>	
2	Tag No. : <i>V-2102 A/B/C</i> Quantity : <i>3 Set</i>	
3	Type : <i>Pressure Vessel</i>	
4	Process Design Data	
5	Contents	Corrosive / Erosive <i>CO₂, H₂S</i>
6	Operating Temp. (°C) <i>60</i>	Liquid Flow (kg/h)
7	Operating Press. (barg) <i>18.3</i>	Vap. Molec. Weight (kg/kmol)
8	Gas Flow (kg/h)	Liquid Sp. Gravity <i>0.01828</i>
9	Liquid Viscosity (cP)	Service: <i>Sour HC</i>
10	Mechanical Design Data	
11	Design Temp. (°C) <i>115.4</i>	Vessel Orientation <i>Vertical</i>
12	Design Press. (barg) <i>F.V / 22</i>	HHLL (mm) <i>950</i>
13	Test Press. (barg) <i>Per Code & Specification</i>	Nor. Liquid Vol. (m ³)
14	Internal Vacuum (barg) <i>Yes</i>	In. Dia. Of Boots (mm) <i>-</i>
15	In. Dia. of Shell (mm) <i>900</i>	Boot Length (mm) <i>-</i>
16	Tan/Tan Dim. (mm) <i>2840</i>	Boot Head Type <i>-</i>
17	Vessel Head Type <i>2:1 Elliptical</i>	Corr. Allowance (mm) <i>-</i>
18	Shell Wall Thk. (mm) <i>*</i>	Joint Efficiency <i>0.85 (Shell) / 1 (Head)</i>
19	Head Wall Thk. (mm) <i>*(After Forming)</i>	Ambient Temp. (°C)
20	Seismic Design <i>Site Class: D, Code: ASCE 7-10</i>	MDMT (°C) <i>5</i>
21	Wind Design <i>Speed: 120 Km/hr (Max.), Code: ASCE 7-10</i>	Insulation Required <i>Yes, PP</i>
22	Materials	
23	Code <i>ASME II / ASTM</i>	Nozzle Necks: <i>A 106 Gr.B + 3mm Clad SS 316L</i>
24	Shell / Heads <i>A 516 Gr. 70 N + 3mm Clad SS 316L</i>	Pipes <i>A 106 Gr.B + 3mm Clad SS 316L</i>
25	Heads <i>A 516 Gr. 70 N + 3mm Clad SS 316L</i>	Plates <i>A 516 Gr.70 N</i>
26	Lining / Cladding <i>- / 3mm SS 316L</i>	Forgings <i>A 105 N + 3mm Clad SS 316L</i>
27	Leg / Pad <i>A 283 Gr.C / A 516 Gr. 70</i>	Flanges <i>A 105 N+ 3mm Clad SS 316L</i>
28	Platform Gratings <i>Hot Dip Galvanized C.S.</i>	Fittings <i>A 234 Gr. WPB + Cladding</i>
29	Gaskets <i>Note 26</i>	External Bolts <i>A193 Gr B7M (Note 8)</i>
30	Lifting Lugs <i>A 516 Gr.70 N / A 283</i>	External Nuts <i>A194 Gr 2HM (Note 8)</i>
31	Reinforcing Pads <i>A 516 Gr.70 N</i>	Internal Bolts <i>A193 Gr B8M</i>
32	Ladder & Platform <i>C.S.</i>	Internal Nuts <i>A194 8M</i>
33	Internal welded Support <i>SS 316L</i>	Name Plate <i>S.S</i>
34		
35	REFERENCE STANDARDS & DOCUMENTS	
36	Mechanical Design Code <i>ASME Sec VIII Div 1, IPS-G-ME-150 (Latest Revision)</i>	
37	Specification for Pressure Vessels <i>BK-GNRAL-PEDCO-000-ME-SP-0001</i>	
38	Process Basis of Design <i>BK-GNRAL-PEDCO-000-PR-DB-0001</i>	
39	Piping & Instrument Diagram (P&ID) <i>BK-GCS-PEDCO-120-PR-PI-0009</i>	
40	Specification for Painting <i>BK-GNRAL-PEDCO-000-PI-SP-0006</i>	
41	Specification for Insulation <i>BK-GNRAL-PEDCO-000-PI-SP-0019</i>	
42	Specification For Material Requirements in Sour service <i>BK-GNRAL-PEDCO-000-PI-SP-0008 (Note 45)</i>	
43	Fabrication and Inspection Requirements	
44	Inspection Authority <i>TPI & Client</i>	
45	Material Certification <i>In Accordance with BS EN 10204:2004, Type 3.1, Minimum for Pressure Containing and Attachments</i>	
46	Hydro Test Medium <i>Water</i>	Hydro Test Procedure <i>Yes; Per Code & Spec. Requirements</i>
47	Post Weld Heat Treatment <i>Per Code & Spec. Requirements</i>	PT <i>100%</i>
48	MT <i>100 % on Lifting Lug Fillet Welds</i>	UT <i>Yes; Per Code & Spec. Requirements</i>
49	RT <i>100 % On T-Joints and Head Joints Butt-Welds,</i>	
50	<i>Spot On Shell Longitudinal and Circumferential Joints Butt-Welds,</i>	
51	<i>100 % On Nozzle Neck to Flange & Fabricated Nozzle Neck Longitudinal Butt-Welds,</i>	
52	RT Report <i>Yes; Per Code & Spec. Requir.</i>	PT Report <i>Yes; Per Code & Spec. Requirements</i>
53	MT Report <i>Yes; Per Code & Spec. Requir.</i>	UT Report <i>Yes; Per Code & Spec. Requirements</i>
54	Fabrication Quality Control Plan (With Offer)	<i>Yes</i>
55	Welding Procedure Review / Approval	<i>Yes</i>
56	Surface Preparation & Coating <i>Specification for Painting Doc. No.BK-GNRAL-PEDCO-000-PI-SP-0006</i>	
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سطح الارض

احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک

MECHANICAL DATA SHEETS FOR 2nd STAGE G.C. SUCTION DRUMS



شماره پیمان:

۰۵۳ - ۰۷۳ - ۹۱۸۴

پروژه

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بسته کاری

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صادر کننده

PEDCO

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شماره صفحه: ۸ از ۶

Mech. Data Sheet For 2nd Stage G.C. Suction Drums (V-2102 A/B/C) / sheet 3 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	Yes	Earthing Lug (Note 30)	Yes
4	Insulation	Yes	Tailing Lug	Yes
5	Insulation Cover	Yes	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 44)	Yes		

Nozzles List * (Note 1)

Mark	Qty.	Description	Pipe			Flange			Proj. (mm)	Reinforcement		Remarks
			Size	Thk.	Sch.	Type	Rate.	Face		Thk.	O.D.	
21	A	Inlet	6"			WN	#300	RF	727*	*	310*	Note 6
22	B1	Gas Outlet	6"			WN	#300	RF	493*	*	310*	Note 6
23	B2	Liquid Outlet	2"			WN	#300	RF	493*			
24	V	Vent	2"			WN	#300	RF	See DWG			
25	M	Manhole	20"			WN	#300	RF	827*	*	870*	Note 6
26	S	Utility Connection	2"			WN	#300	RF	659*			
27	L 1,2	Stand Pipe	3"			WN	#300	RF	718*	*	210*	Note 6
28	L 3,4	Level Transmitter	2"			WN	#300	RF	718*			
29	PSV	Pressure Safety Valve	2"			WN	#300	RF	718*			
30	P1	Pressure Gauge	2"			WN	#300	RF	718*			
31	T	Temperature Gauge	2"			WN	#300	RF	718*			
32	P 2,3	PDIT	2"			WN	#300	RF	718*			

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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سطح الارض

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MECHANICAL DATA SHEETS FOR 2nd STAGE G.C. SUCTION DRUMS



شماره پیمان:

۰۵۳ - ۰۷۳ - ۹۱۸۴

پروژه

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نسخه

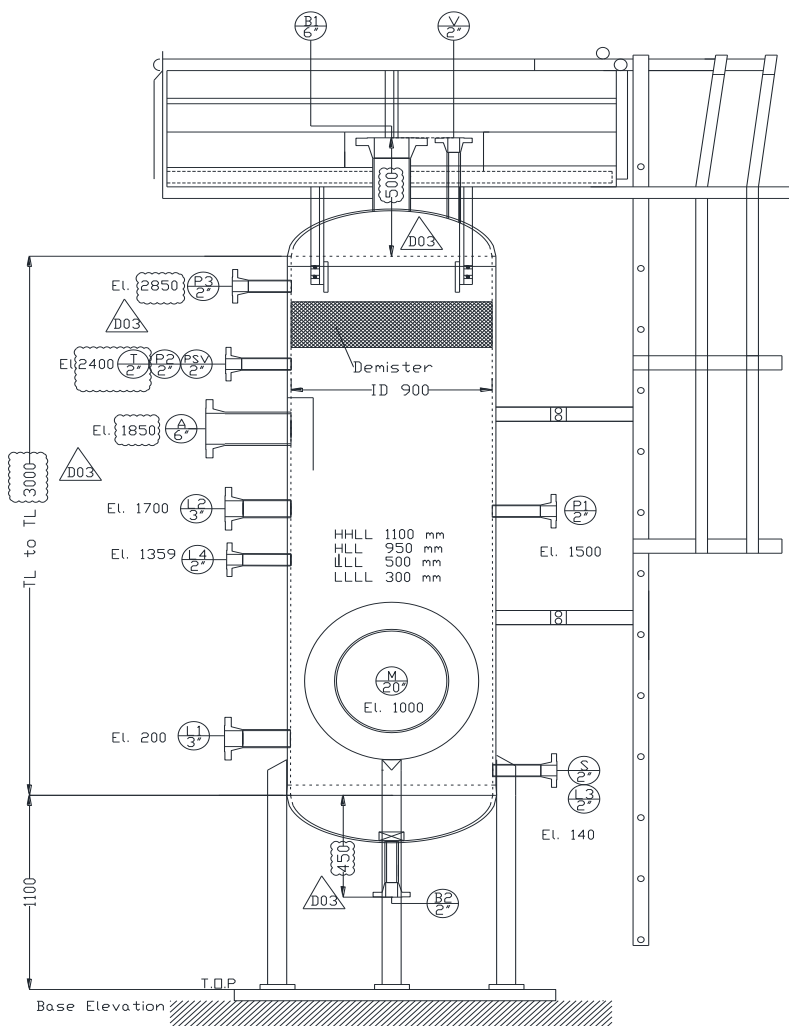
D03

شماره صفحه: ۸ از ۷

Mech. Data Sheet For 2nd Stage G.C. Suction Drums (V-2102 A/B/C) / sheet 3 of 4

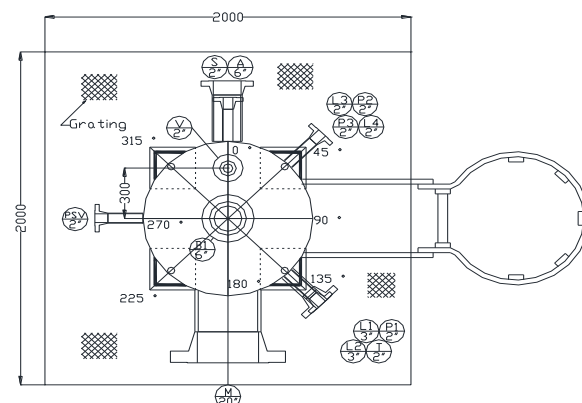
Sketch

D03



Elevation View

Elevation View will be finalized later by piping department



Orientation View

Orientation View will be finalized later by piping department

All dimensions are in mm.



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MECHANICAL DATA SHEETS FOR 2nd STAGE G.C. SUCTION DRUMS



شماره پیمان:

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پروژه

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شماره صفحه: ۸ از ۸

Mech. Data Sheet For 2nd Stage G.C. Suction Drums (V-2102 A/B/C) / sheet 3 of 4

Rev.	WEIGHT						Rev.
1	WEIGHT CONTROL DATA SHEET SI UNIT *					1/1	
2							
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5							
6	Service : <i>2nd 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							
14	Note: Information to be completed by equipment vendor.						
15							
16	Total weight (kg) *						
17	Fabrication	Erection	Operation	Hydrostatic Test	Removable internal	Ladder & Platform	
18							
19							
20							
21							
22							
23	WEIGHT AND C OF G DATA REQUIRED *						
24	CONDITION	WEIGHT ACCURACY %	WEIGHT (kg)	CENTER OF GRAVITY (mm)			
25				X	Y	Z	
26	Dry						
27							
28							
29							
30	SKETCH						
31							
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52	NOTES						
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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