

	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک							  
	MECHANICAL DATA SHEETS FOR SLUG CATCHER							
شماره پیمان:	پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
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طرح نگهداشت و افزایش تولید 27 مخزن

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نگهداشت و افزایش تولید میدان نفتی بینک

D02	SEP.2023	IFA	H.Ghadyani	M.Fakharian	M.Mehrshad	
D01	SEP.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: 1

CLIENT Doc. Number: F0Z-708845

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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General Notes

Rev.

1. 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.
2. Deleted
3. VENDOR shall include for the services of a independent verification body for mechanical design, stage inspection, testing and stamping of the equipment (if possible).
4. Painting and coating (internal & external) shall be as per project 'Specification for Painting', Doc. No. BK-GNRL-PEDCO-000-PI-SP-0006 and 'Specification for Lining', Doc. No. BK-GNRL-PEDCO-000-PI-SP-0007.
5. 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)
6. 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-GNRL-PEDCO-000-ME-DW-0001".
7. 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.
8. All external bolts and nuts shall be hot dip galvanized. Internal bolts and nuts shall be stainless steel.
9. Loads at support base, Shall be calculated and determined by vendor.
10. Access Ladder & Platform to be considered .
11. Deleted
12. All material, corrosion allowance and their suitability for the process fluid at design pressure and temperature to be confirmed by vendor.
13. Deleted
14. All nozzle locations and orientations will be finalized later.
15. Instrumentation items are excluded from vendor's scope of supply.
16. Any changes in material of construction, location & orientation of the nozzles shall be confirmed by client.
17. All materials shall be new and unused.
18. Fabrication tolerances for vessel shall be in accordance with requirement of ASME code.
19. Location and number of lifting lugs on vessels shall be specified on VENDOR drawing.
20. All items shall be clearly match marked against vessel drawings to facilitate erection.
21. Deleted
22. Vendor shall supply details of all welding connections and give general specification of used materials.
23. 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).
24. Equipment packaging, preparation for shipment and delivery shall be in accordance with the project Packing, Marking, Transportation Procedure Doc. No. "BK-GNRL-PEDCO-000-QC-PR-0045".
25. Specified accessories and attachments shall be supplied by vendor.
26. Gasket shall be spiral wound type, graphite filled with inner ring and outer ring S.S.316.
27. Deleted
28. Deleted
29. Two M12 earthing bosses shall be provided on vessel support. Material of Earthing Bosses shall be S.S. 316



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General Notes (Cont'd)

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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".
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 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. All external attachments directly welded to the pressure part shall be the same material as vessel grade.
41. All dimensions are in "mm" unless otherwise specified.
42. 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.
43. Deleted
44. DEMISTER specification will be finalized latter.
45. 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.
$$Ceq. = C + Mn/6 + (Cr + Mo + V)/5 + (Cu + Ni)/15 < 0.42 \%$$
46. All carbon steel material shall be fully killed, fine grain treated and supplied in the normalized condition.
47. Sacrificial Anode is required for the equipment.



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1	Description : <i>Inlet Gas K.O. Drum</i>	
2	Tag No. : <i>V-2104</i> Quantity : <i>1 Set</i>	
3	Type : <i>Pressure Vessel</i>	
4	Process Design Data	
5	Contents <i>H2O-HC</i> Corrosive / Erosive <i>CO2,H2S</i>	
6	Operating Temp. (°C) <i>15.5~32</i> Liquid Flow (kg/h) <i>360078</i>	
7	Operating Press. (barg) <i>5.5</i> Vap. Molec. Weight (kg/kmol) <i>33.2</i>	
8	Gas Flow (kg/h) <i>12223</i> Liquid Sp. Gravity <i>0.85</i>	
9	Liquid Viscosity (cP) <i>0.4207</i> Lethal / SOUR : <i>SOUR</i>	
10	Mechanical Design Data (Note 1)	
11	Design Temp. (°C) <i>85</i> Vessel Orientation <i>Horizontal</i>	
12	Design Press. (barg) <i>9</i> LLLL / HHLL (mm) <i>150 / 3414</i>	
13	Test Press. (barg) <i>Per Code & Spec Requirements.</i> Nor. Liquid Vol. (m³) <i>48 (Vol. from Bottom to NLL)</i>	
14	Internal Vacuum (barg) <i>F.V.</i> In. Dia. Of Boots (mm) <i>-</i>	
15	In. Dia. of Shell (mm) <i>4200</i> Boot Length (mm) <i>-</i>	
16	Tan/Tan Dim. (mm) <i>12600</i> Boot Head Type <i>-</i>	
17	Vessel Head Type <i>2:1 Elliptical (Note 23)</i> Corr. Allowance (mm) <i>6</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> MDMT (°C) <i>5</i>	
20	Seismic Design <i>Site Class : D, Code: ASCE 7-10, Fa= 1, Fv= 1.33, S1= 0.46, Ss= 1.125, I= 1.25</i>	D02
21	Wind Design <i>Speed: 120 Km/hr (Max.), Code: ASCE 7-10</i> Insulation Required <i>NO</i>	D02
22	Materials (Note 45, 46)	
23	Code <i>ASME II / ASTM</i> Internal Welded Supports <i>A 516 Gr. 60 N</i>	
24	Shell <i>A 516 Gr. 60 N</i> Nozzle Necks <i>A 106 Gr.B N</i>	
25	Heads <i>A 516 Gr. 60 N</i> Pipes <i>A 106 Gr.B N</i>	
26	Lining <i>P3</i> Plates <i>A 516 Gr. 60 N</i>	
27	Saddles <i>A 283 Gr. C</i> Forgings <i>A 105 N</i>	
28	Wear Plate <i>A 516 Gr. 60 N</i> Flanges <i>A 105 N</i>	
29	Stiffening Rings <i>A 516 Gr. 60 N</i> Fittings <i>A 234 Gr. WPB</i>	
30	Gaskets <i>Note 26</i> Welded Internals <i>A 516 Gr. 60 N</i>	
31	Lifting Lugs <i>A 516 Gr.60 N / A 283 Gr. C</i> External Bolts <i>A 193 Gr. B7 (8)</i>	
32	Reinforcing Pads <i>A 516 Gr. 60N</i> Nuts <i>A 194 Gr. 2H (8)</i>	
33	Ladder & Platform <i>C.S.</i> Internal Bolts <i>A193 Gr. B8M (8)</i>	
34	Gratings <i>Hot Dip Galvanized C.S.</i> Nuts <i>A194 Gr. 8M (8)</i>	
35	External Welded Clips <i>A 516 Gr. 60 N</i> Name Plate <i>S.S. 316</i>	
36		
37	REFERENCE STANDARDS & DOCUMENTS	
38	Mechanical Design Code <i>ASME SEC. VIII, DIV. 1, IPS-D-ME-140</i>	
39	Specification for Pressure Vessels <i>BK-GNRAL-PEDCO-000-ME-SP-0001</i>	
40	Process Basis of Design <i>BK-GNRAL-PEDCO-000-PR-DB-0001</i>	
41	Piping & Instrument Diagram (P&ID) <i>BK-GCS-PEDCO-120-PR-PI-0004</i>	
42	Specification for Painting <i>BK-GNRAL-PEDCO-000-PI-SP-0006</i>	
43	Specification for Insulation <i>BK-GNRAL-PEDCO-000-PI-SP-0019</i>	
44	Specification For Material Requirements in Sour service <i>BK-GNRAL-PEDCO-000-PI-SP-0008</i>	
45	Fabrication and Inspection Requirements	
46	Inspection Authority <i>TPI & Client</i>	
47	Material Certification <i>In Accordance with BS EN 10204:2004, Type 3.1, Minimum for Pressure Containing and Attachments</i>	
48	Hydro Test Medium <i>Water</i> Hydro Test Procedure <i>Yes;Per Code & Spec. Requirements</i>	
49	Post Weld Heat Treatment <i>YES(PROCESS REASON)</i> PT <i>100%</i>	
50	MT <i>100 % on Lifting Lug Fillet Welds</i> UT <i>Yes;Per Code & Spec. Requirements</i>	
51	RT <i>100 % On T-Joints and Head Joints Butt-Welds,</i>	
52	<i>Spot On Shell Longitudinal and Circumferential Joints Butt-Welds,</i>	
53	<i>100 % On Nozzle Neck to Flange & Fabricated Nozzle Neck Longitudinal Butt-Welds,</i>	
54	RT Report <i>Yes; Per Code & Spec. Requir.</i> PT Report <i>Yes;Per Code & Spec. Requirements</i>	
55	MT Report <i>Yes; Per Code & Spec. Requir.</i> UT Report <i>Yes;Per Code & Spec. Requirements</i>	
56	Fabrication Quality Control Plan (With Offer) <i>Yes</i>	
57	Welding Procedure Review / Approval <i>Yes</i>	
58	Surface Preparation & Coating <i>Per Specification for Painting: Doc. No. "BK-GNRAL-PEDCO-PI-SP-0006"</i>	
59	<i>Per specification For Lining: Doc. No.: BK-GNRAL-PEDCO-000-PI-SP-0007</i>	
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ACCESSORIES , NOZZLES LIST & LOADS @ BASE

Accessories & Attachments (Note 25, 40)

Supporting Saddles	YES	Name Plate Bracket	YES
Access Ladder & Platform	YES	Name Plate	YES
Insulation Support	NO	Earthing Lug (Note 29, 30)	YES
Insulation	NO	Tailing Lug	N/A
Insulation Cover	NO	Cathodic Protection (Sacrificial Anodes)	YES
Fireproofing Support	NO	Anchor Bolts	NO
Lifting Lugs	YES	Instrumentations	NO
Internal/ External Clips	YES	Skid	N/A
Template	NO	Support Clips	YES
Boot	NO	Vortex Breaker	YES
Davit for Manhole	YES	Rung & Grip	NO
Internal Lining (By Painting)	YES	Heating Coil	NO

Nozzles List (Note 1,5,6,14,32,33)

D02

Mark	Qty.	Description	Pipe			Flange			Proj. (mm)	Reinforcement		Remarks
			Size	Thk.	Sch.	Type	Rate.	Face		Thk.	O.D.	
A	1	Inlet	10"			WN	#150	RF	SEE DWG	*	*	
B1	1	Gas Outlet	8"			WN	#150	RF	SEE DWG	*	*	
B2	1	Liquid Outlet	4"			WN	#150	RF	SEE DWG	*	*	
V1	1	Vent	4"			WN	#150	RF	SEE DWG	*	*	
V2	1	Ventilation	8"			WN	#150	RF	SEE DWG	*	*	
M1,2	2	Manhole	24"			WN	#150	RF	2350	*	*	
S	1	Utility Connection	3"			WN	#300	RF	SEE DWG	*	*	
D 1,2	2	Drain	3"			WN	#150	RF	SEE DWG	*	*	
L 1,2	2	Stand Pipe	3"			WN	#150	RF	SEE DWG	*	*	
L 3,4	2	Level transmitter	2"			WN	#300	RF	SEE DWG			
PSV	1	Pressure Safety Valve	8"			WN	#150	RF	SEE DWG			
P1	1	Pressure Gauge	2"			WN	#300	RF	SEE DWG			
P2	1	Pressure transmitter	2"			WN	#300	RF	SEE DWG			
T	1	Temperature gauge	2"			WN	#300	RF	SEE DWG			
P3	1	PDIT	2"			WN	#300	RF	SEE DWG			

Wind and Seismic Loads at Base * Note(9)

M T Q Load Type	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									

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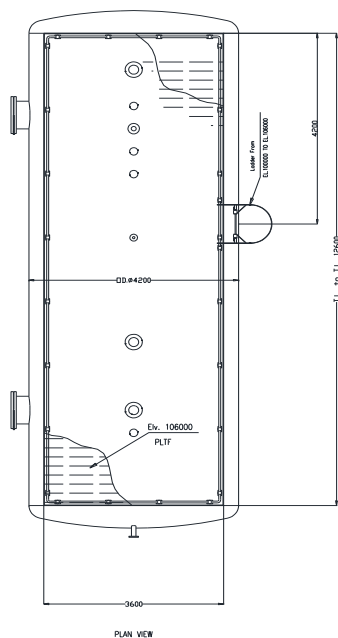
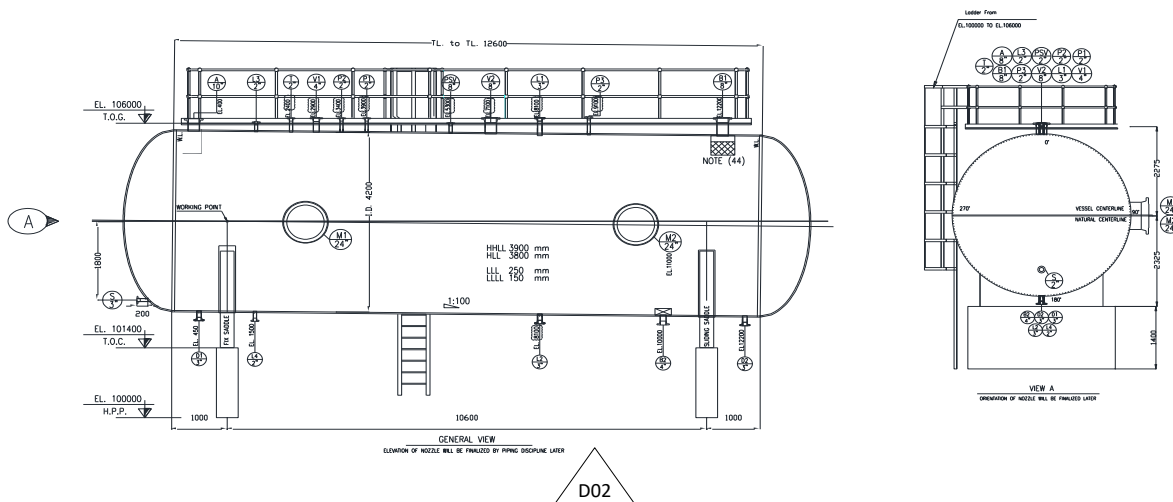
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Sketch





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Mech. Data Sheet For Slug Catcher (V-2104) / sheet 4 of 4

Rev.	WEIGHT						Rev.
1	WEIGHT CONTROL DATA SHEET SI UNIT (1)					1/1	
2							
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5							
6	Service : <i>Slug Catcher</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)(1,2)						
17	Fabrication	Erection	Operation	Hydrostatic Test	Removable internal	Ladder & Platform	
18							
19							
20							
21							
22							
23	WEIGHT AND C OF G DATA REQUIRED (9)						
24	CONDITION	WEIGHT ACCURACY %	WEIGHT (kg)	CENTER OF GRAVITY (mm)			
25				X	Y	Z	
26	Dry						
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30	SKETCH						
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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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