



نگهداشت و افزایش تولید میدان نفتی بینک  
 فعالیت های رو زمینی در بسته های کاری تحت الارض  
 ساخت موقعیت چاه، تاسیسات سرچاهی، خطوط جریانی،  
 تسهیلات برق رسانی مربوط به موقعیت W007S و توسعه  
 چندراهه کلاستر بینک



شماره پیمان:

053 - 073 - 9184

Process Description - Extension of Binak B/C Manifold

نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادرکننده	بسته کاری	پروژه
D01	0001	RT	PR	110	PEDCO	W007S	BK

شماره صفحه: 1 از 8

## طرح نگهداشت و افزایش تولید 27 مخزن

### Process Description - Extension of Binak B/C Manifold

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- IDC: Inter-Discipline Check
- IFC: Issued For Comment
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- 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 صفحه: 2 از 8

REVISION RECORD SHEET

PAGE	D00	D01	D02	D03	D04
1	X	X			
2	X	X			
3	X				
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52					
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55					
56					
57					
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59					
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62					
63					
64					
65					

PAGE	D00	D01	D02	D03	D04
66					
67					
68					
69					
70					
71					
72					
73					
74					
75					
76					
77					
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128					
129					
130					

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<p>شماره پیمان: 053 - 073 - 9184</p>	<p>Process Description - Extension of Binak B/C Manifold</p> <table border="1"> <thead> <tr> <th>نسخه</th> <th>سریال</th> <th>نوع مدرک</th> <th>رشته</th> <th>تسهیلات</th> <th>صادرکننده</th> <th>بسته کاری</th> <th>پروژه</th> </tr> </thead> <tbody> <tr> <td>D01</td> <td>0001</td> <td>RT</td> <td>PR</td> <td>110</td> <td>PEDCO</td> <td>W007S</td> <td>BK</td> </tr> </tbody> </table>	نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادرکننده	بسته کاری	پروژه	D01	0001	RT	PR	110	PEDCO	W007S	BK	<p>شماره صفحه : 3 از 8</p>
نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادرکننده	بسته کاری	پروژه											
D01	0001	RT	PR	110	PEDCO	W007S	BK											

## CONTENTS

<b>1.0</b>	<b>INTRODUCTION .....</b>	<b>4</b>
<b>2.0</b>	<b>SCOPE .....</b>	<b>5</b>
<b>3.0</b>	<b>NORMATIVE REFERENCES.....</b>	<b>5</b>
3.1	THE PROJECT DOCUMENTS.....	5
3.2	ENVIRONMENTAL DATA .....	5
3.3	ORDER OF PRECEDENCE.....	5
<b>4.0</b>	<b>PROCESS DESCRIPTION.....</b>	<b>5</b>
4.1	WELLHEAD AREA.....	5
4.2	MANIFOLD AREA.....	6
<b>5.0</b>	<b>UTILITY DESCRIPTION.....</b>	<b>7</b>
5.1	DIESEL OIL SUPPLY SYSTEM .....	7
5.2	POTABLE WATER SYSTEM .....	8
5.3	OIL SUMP PUMP (P-100) .....	8
<b>6.0</b>	<b>GAS TRANSMISSION PIPELINE FROM BINAK NEW GCS TO SIAHMAKAN G.I STATION .....</b>	<b>8</b>

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<p>شماره پیمان: 053 - 073 - 9184</p>	<p>Process Description - Extension of Binak B/C Manifold</p> <table border="1"> <thead> <tr> <th>پروژه</th> <th>بسته کاری</th> <th>صادرکننده</th> <th>تسهیلات</th> <th>رشته</th> <th>نوع مدرک</th> <th>سریال</th> <th>نسخه</th> </tr> </thead> <tbody> <tr> <td>BK</td> <td>W007S</td> <td>PEDCO</td> <td>110</td> <td>PR</td> <td>RT</td> <td>0001</td> <td>D01</td> </tr> </tbody> </table>	پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	BK	W007S	PEDCO	110	PR	RT	0001	D01	<p>شماره صفحه: 4 از 8</p>
پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه											
BK	W007S	PEDCO	110	PR	RT	0001	D01											

## 1.0 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.

As a part of the Project, construction of well location, access road, wellhead facilities (with electric power supply) for W007S shall be done. In addition, construction of new flowline from aforementioned well location to Binak B/C unit (with extension of relevant manifold) are in the Project scope of work

### GENERAL DEFINITION

The following terms shall be used in this document.

CLIENT:	National Iranian South Oilfields Company (NISOC)
PROJECT:	Binak Oilfield Development – Construction of Well Location, Wellhead Facilities, Electrification Facilities, Flowlines for W007S and Extension of Binak B/C Manifold
EPD/EPC CONTRACTOR (GC):	Petro Iran Development Company (PEDCO)
EPC CONTRACTOR:	Joint Venture of : Hirgan Energy – Design & Inspection(D&I) Companies
VENDOR:	The firm or person who will fabricate the equipment or material.
EXECUTOR:	Executor is the party which carries out all or part of construction and/or commissioning for the project.
THIRD PARTY INSPECTOR (TPI):	The firm appointed by EPD/EPC CONTRACTOR (GC) and approved by CLIENT (in writing) for the inspection of goods.
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.

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نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادرکننده	بسته کاری	پروژه											
D01	0001	RT	PR	110	PEDCO	W007S	BK											

## 2.0 SCOPE

In this document, Purpose of the facilities is to construction of wellhead Facilities and extension of manifold for BINAK Oil Field.

## 3.0 NORMATIVE REFERENCES

### 3.1 THE PROJECT DOCUMENTS

- BK-GNRAL-PEDCO-000-PR-DB-0001      Process Basis of Design
- BK-GNRAL-PEDCO-000-PR-DC-0001      Process Design Criteria
- BK-W007S-PEDCO-110-PR-PF-0001      Process Flow Diagram - Extension Of Binak B/C Manifold
- BK-W007S-PEDCO-110-PR-PI-0001      P&ID - Extension of Binak B/C Manifold

### 3.2 ENVIRONMENTAL DATA

Refer to "Process Basis of Design; Doc. No. BK-GNRAL-PEDCO-000-PR-DB-0001".

### 3.3 ORDER OF PRECEDENCE

In case of any conflict between the contents of this document or any discrepancy between this document and other project documents or reference standards, this issue must be reported to the CLIENT. The final decision in this situation will be made by CLIENT

## 4.0 PROCESS DESCRIPTION

### 4.1 WELLHEAD AREA

Wellhead facilities for wells consist of the following utilities and equipment:

- Wellhead control system
- Wellhead valves and choke valve
- Stone trap

Each well is provided with a stone trap upstream of the choke valve. In order to avoid any sand carry overs, a stone trap is designed to eliminate sands that may have produced from well, the accumulated liquid in stone trap will be routed into the burn pit for emergency condition.

The well head burn pit is not equipped with ignition facilities and shall be ignited manually.

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	شماره پیمان: 053 - 073 - 9184	<b>Process Description - Extension of Binak B/C Manifold</b>							شماره صفحه: 6 از 8
	پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	
	BK	W007S	PEDCO	110	PR	RT	0001	D01	

The produced fluid from each well enters to the relevant stone trap firstly and then is routed through the choke valve in order to decrease pressure. The production flow from the crude wells is determined by choke valve at each well.

The wellheads are normally unmanned. Each wellhead has been furnished with a control system for controlling the surface safety valves (SSV) and subsurface safety valves (SSSV).

The produced oil from BANGESTAN and ASMARI wells are transferred to the BINK manifold as following:

**Table No.4-4.1: Asmari and Bangestan Wellhead Condition**

WELL NO.	Minimum flow rate for well (bbl/day)	Maximum flow rate for well (bbl/day)	Wellhead Pressure (before Choke valve) (Barg)	Wellhead Shut-in Pressure (Barg)	Wellhead Temperature (before Choke valve) (°C)
W018S (AS)	500	1500	43.81	193.79	75
W008N (AS)	500	1500	43.81	193.79	75
W028	1500	2500	43.81	310.34	80
W035	1500	2500	43.81	310.34	80
W046S	1000	1500	43.81	310.34	80
W007S	500	1000	43.81	310.34	80
BINK 5	500	1000	43.81	-	-
BINK 12	500	1000	43.81	-	-
BINK 14	500	1000	43.81	-	-
BINK 15	500	1000	43.81	-	-

Note: Pressure at the flow line destination is considered 12.78 Barg



## 4.2 MANIFOLD AREA

ESDV at inlet of each Flow line is provided to isolate the manifold during emergency condition. Shut down command will be incorporated via new ESD system and valve status will be sent to new DCS system installed on existing control room of manifold area.

Flow control valve shall be supplied to regular flow in each flow line via flow control signal coming from FT located at each flow line.

ESDVs and FCVs are Air operated and required air shall be supplied from existing Air system

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	<p>Process Description - Extension of Binak B/C Manifold</p>							
شماره پیمان:	شماره صفحه: 7 از 8							
053 - 073 - 9184	پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه
	BK	W007S	PEDCO	110	PR	RT	0001	D01

facilities

PT for ESD action, PT, PG, TG, CC and CP for line monitoring shall be considered. TRVs are installed near inlet ESDV of each flow line.

There are test header and closed drain header in manifold.

The flow from any one well is switched from the production manifold to the test header using the manual valves provided.

Flow lines from wellhead area are transferred to Manifold area as below:



**Table No.4-2.1: Asmari and Bangestan Wellhead Condition**

WELL NO.	WELL SITUATION	RESERVOIR	UTM COORDINATION	
			NORTHING	EASTING
W-018S	New	ASMARI	3291914	437440
W-008N	New	ASMARI	3291837	438713
W-028	New	BANGESTAN	3293091	437126
W-035	New	BANGESTAN	3293648	436604
W-046S	New	BANGESTAN	3294379	435604
W-007S	New	BANGESTAN	3290543	437425
BK-5	Exist	-	3286512	41725
BK-12	Exist	-	3288580	440692
BK-14	Exist	-	3295176	437805
BK-15	Exist	-	3287973	442385



## 5.0 UTILITY DESCRIPTION

Wellhead area and manifold to be mechanized by utility and supporting systems as following:

- Oil sump pump (P-100)
- Diesel Oil Supply System
- Potable Water System
- Instrument air( Existing facility in manifold)

### 5.1 DIESEL OIL SUPPLY SYSTEM

Diesel oil is used as fuel for Emergency diesel power generators in the Binak Field. A diesel supply system consists of manifold daily diesel drum and Emergency diesel generator package is provided.

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	<b>Process Description - Extension of Binak B/C Manifold</b>							
شماره پیمان:								شماره صفحه: 8 از 8
053 - 073 - 9184	پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	
	BK	W007S	PEDCO	110	PR	RT	0001	D01

## 5.2 POTABLE WATER SYSTEM

The Potable Water System consists of elevated potable water storage tank. Potable water will be filled by truck.

The potable water is distributed from the elevated storage tank to the users.

## 5.3 OIL SUMP PUMP (P-100)

The oil from oil sump is routed to header A/B of manifold via oil sump pump (P-100).



## 6.0 Gas transmission pipeline from BINAK new GCS to SIAHMAKAN G.I Station

With the aim of increasing the oil production rate from BINAK field, the construction of 8 inch gas transmission pipeline from new BINAK Compressor Station to SIAHMAKAN Gas Injection Station and 4 inch gas condensate transmission pipeline from new BINAK Compressor Station to BINAK Cluster, has been on the agenda. The flow rate, pressure and temperature of inlet gas to pipeline are 15 MMSCFD respectively.

Generally in order to cleaning and testing transferring pipeline, pig launching and receiving facilities are considered. Pig will launch from pig launcher located at BINAK new GCS (PL-3201) and will received in pig receiver located at SIAHMAKAN G.I (PR-3201).

(PL-3201) and (PR-3201) are provided with relief valves (PSV-3201) on (PL-3201) and (PSV-3202) on (PR-3201) in order to protect them at over pressure condition. For supervision, sufficient pressure instrument is considered. After launching or receiving the pig, the remained liquid in the equipment will be discharge to close drain system.

(ZS-3201) and (ZI-3202 & ZI-3203) are considered to confirm that the pig has been passing through the pipe at the beginning of the launch.

LBV-3201/ LBV-3202 shall be installed at distance 28.4 km and 28.6 km respectively because of river crossing. In order to isolating pipeline form BINAK new GCS and SIAHMAKAN G.I, ESDV-3201 and ESDV-3202 will be considered at the beginning and end of the pipeline ( using air service of inlet and out let plant). Corrosion inhibitor and methanol will be injected at the beginning of the pipeline in BINAK new GCS.

According to the P&ID-0001(BK-PPL-PEDCO-320-PR-PI-0001), there are three PT-3201A, B, C (VOTING 2003) on the GAS-111-0072-FN05-6"-PT line to close ESDV-3201 during pipeline low, low pressure.