

	<p>نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض</p> <p>خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (قرارداد BK-HD-GCS-CO-0008_03)</p>							 	
	INSPECTION & TEST PLAN (ITP)							شماره صفحه : ۱ از ۱۳	
	شماره پیمان:	نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادر کننده		
۰۵۳ - ۰۷۳ - ۹۱۸۴	00	0002	PR	QC	120	HY	GCS	BK	

طرح نگهداشت و افزایش تولید ۲۷ مخزن

INSPECTION & TEST PLAN (ITP)

نگهداشت و افزایش تولید میدان نفتی بینک

00	OCT. 2021	IFC	Havayar Co.	Havayar Co.	Havayar Co.	
Rev.	Date	Purpose of Issue/Status	Prepared by:	Checked by:	Approved by:	CLIENT Approval

Class: 1

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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	INSPECTION & TEST PLAN (ITP)						شماره صفحه: ۲ از ۱۳	
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک		
BK	GCS	HY	120	QC	PR	0002	00	

REVISION RECORD SHEET

PAGE	00	01	02	03	04
1	X				
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66					
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شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴	INSPECTION & TEST PLAN (ITP)							شماره صفحه : ۳ از ۱۳	
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال		نسخه
	BK	GCS	HY	120	QC	PR	0002	00	

CONTENTS

1.0	INTRODUCTION	4
2.0	SCOPE	5
3.0	ABBREVIATIONS	5
4.0	DESCRIPTIONS	6
5.0	ITP	7

 NISOC	<p>نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض</p> <p>خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (قرارداد BK-HD-GCS-CO-0008_03)</p>							 	
شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴	INSPECTION & TEST PLAN (ITP)							شماره صفحه : ۴ از ۱۳	
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال		نسخه
	BK	GCS	HY	120	QC	PR	0002		00

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.

GENERAL DEFINITION

The following terms shall be used in this document.

CLIENT:	National Iranian South Oilfields Company (NISOC)
PROJECT:	Binak Oilfield Development – General Facilities
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:	Havayar Company
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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شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴	INSPECTION & TEST PLAN (ITP)							شماره صفحه : ۵ از ۱۳	
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال		نسخه
	BK	GCS	HY	120	QC	PR	0002	00	

2.0 SCOPE

This document contains necessary inspection requirements for PROJECT Reciprocating Compressors.

3.0 ABBREVIATIONS

PIM	Pre Inspection Meeting
MOM	Minutes of Meeting
FAT	Factory Acceptance Test
SAT	Site Acceptance Test
MTC	Material Test Certificate
ITP	Inspection & Test Plan
NCR	Non Conformance Report
QC	Quality Control
MR	Material Requisition
VPIS	Vendor Print Index Schedule
DWG	Drawing
APP	Approved
Assy.	Assembly
MFG	Manufacturing
NDT	Non-Destructive Testing
WPS	Welding Procedure Specification
WQT	Welder Qualification Test Report
GA	General Arrangement
PQR	Procedure Qualification Report
Ref.	Reference
STD	Standard
THK.	Thickness
IRN:	Inspection Release Note

 NISOC	<p>نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض</p> <p>خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (قرارداد BK-HD-GCS-CO-0008_03)</p>							 	
شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴	INSPECTION & TEST PLAN (ITP)							شماره صفحه : ۶ از ۱۳	
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال		نسخه
	BK	GCS	HY	120	QC	PR	0002	00	

4.0 DESCRIPTIONS

H: (Hold Point)

Next operation is allowed only when test or inspection is accepted.

Vendor must notify contractor of the dedicated inspection activity at least 10 days in advance in accordance with IA. And the test must be performed in attendance of the inspectors; the vendor shall not depart from this role unless specifically approved by contractor in writing.

W: (Witness Point)

Inspector's presence required, the inspection activity proceed if the involved parties does not attend in accordance with IA.

The vendor must notify contractor of the dedicated inspection activity at least 10 days in advance if the inspection parties don't elect to be present, the vendor may proceed with his own inspection provide and test records are made available to contractor for review

SW: (Spot Witness Point)

Inspector's presence required, the inspection activity proceed if the involved parties does not attend, the ratio of witness point is minimum 20%.

The vendor must notify contractor of the dedicated inspection schedule at least 14 days in advance in accordance with IA. if the inspection parties don't elect to be present, the vendor may proceed with his own inspection provide and test records are made available to contractor for review

R: (Review of Documents)

Check of certificate and/or documents with approved procedures, specification and acceptance criteria.


R/A: (Review and Approved of Documents)

Check and approve of certificate and/or documents with approved procedures, specification and acceptance criteria.


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شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴	INSPECTION & TEST PLAN (ITP)								شماره صفحه: ۷ از ۱۳			
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه				
	BK	GCS	HY	120	QC	PR	0001	00				

5.0 ITP

ITP No.	Part Name / Activity	Characteristic to Be Verified	Acceptance Criteria	Reference Documents	Verifying Document	Extent of Check	Participation By				Remark
							HY	TPI	HE/DI	Owner	
1.A	PIM	---	Spec.	Spec.	ITP/MOM	---	H	H	H	H	
1- Initial Documentation											
1-1	Design & Drawing	---	Project SPEC	---	APP GA/P&ID	---	H	R	R	R	
1-2	WPS – PQR	---	ASME SEC. IX	---	WPS-PQR	---	H	R	R	R	
1-3	WQT	---	ASME SEC. IX	---	WQT	---	H	R	R	R	
1-4	NDT Procedures (VT-PT)	---	ASME SEC. V	---	NDT Procedure	---	H	R	R	R	
1-5	Other Vendor's Document (According to VPIS) Document Subject According to Client Approval	---	Project SPEC/MR/ STANDARD	According To Approved VPIS	---	---	H	R	R	R	
1-6	Consumable Material	---	STD.SPEC.	STD.SPEC.	REPORT	---	H	R	R	R	
2- Test and Inspection Activities											
2-1- Bare-Block (Including: Crank Case, Crank Shaft, Connecting Rod, Cylinder, Cylinder Liner, Cross Head, Piston Rod, Piston Body)											
2-1-1	Material Inspection	Chemical Comp. / Mechanical Prop.	ASTM Code	Mfg. Dwg.	MILL Certificate	---	R	R	R	R	
					EN10204, type 3.1						
2-1-2	NDE (P.T: All Machined Area)	Mechanical Integrity	ASTM E-165	App. Procedure	NDE Report	---	W	R	R	R	Cylinder
2-1-3	NDE (U.T / M.T: All Machined Area)	Mechanical Integrity	ASTM A-503	App. Procedure	NDE Report	---	W	R	R	R	Crank Shaft, Connecting Rod, Piston Rods
			ASTM E-709			---					
			ASME SA-388			---					

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شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴	INSPECTION & TEST PLAN (ITP)								شماره صفحه : ۹ از ۱۳			
	نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادر کننده	بسته کاری	پروژه				
	00	0001	PR	QC	120	HY	GCS	BK				

ITP No.	Part Name / Activity	Characteristic to Be Verified	Acceptance Criteria	Reference Documents	Verifying Document	Extent of Check	Participation By				Remark
							HY	TPI	HE/DI	Owner	
2-3-1	Material Inspection	Chemical Comp. / Mechanical Prop.	ASTM Code	App. Dwg.	Material Certificate EN10204, type 3.1, Inspection report	---	R	W	R	R	
2-3-2	Visual and Dimensional Inspection	Fidelity to Design/ Spec	App. Dwg.	App. Dwg.	QC Report, Inspection report	---	W	R	R	R	
2-3-3	Magnetic Particle / PT Examination	Mechanical Integrity	ASTM E709	NDE Procedure/Weld Map	NDE Report, Inspection report	---	W	W	R	R	
2-3-4	Radiographic Examination on Butt Weld	Mechanical Integrity	ASTM E94	NDE Procedure/Weld Map	NDE Report	---	W	R	R	R	
2-3-5	Hydrostatic Test	Mechanical Strength	API Code & App. Procedure	App. Procedure	QC Report, Inspection report	---	W	H	R	R	
2-3-6	Painting inspection	Fidelity to Design/ Spec	Project specification	App. Procedure	QC Report	---	W	R	R	R	
2-4- Suction/Discharge Snubber											
2-4-1	Material Inspection	Chemical Comp. / Mechanical Prop.	ASTM Code	App. Dwg.	Material Certificate	---	W	W	R	R	
2-4-2	Weld Inspection	Mechanical Integrity	Project specification and ASME Sec. VIII	WPS/PQR	QC Report	---	W	R	R	R	
2-4-3	Magnetic Particle /PT Examination	Mechanical Integrity	NDE Procedure + ASME Sec. VIII	NDE Procedure/Weld Map	NDE Report	---	W	W	R	R	

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شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴	INSPECTION & TEST PLAN (ITP)								شماره صفحه : ۱۰ از ۱۳			
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه				
	BK	GCS	HY	120	QC	PR	0001	00				

ITP No.	Part Name / Activity	Characteristic to Be Verified	Acceptance Criteria	Reference Documents	Verifying Document	Extent of Check	Participation By				Remark
							HY	TPI	HE/DI	Owner	
2-4-4	Radiographic Examination	Mechanical Integrity	ASTM E94 + ASME Sec. VIII	NDE Procedure/Weld Map	NDE Report	---	W	R	R	R	
2-4-5	Visual and Dimensional Inspection	Fidelity to Design/ Spec	App. Dwg.	App. Dwg.	QC Report	---	W	R	R	R	
2-4-6	Hydrostatic Test	Mechanical Strength	API Code & App. Procedure + ASME Sec. VIII	App. Procedure	QC Report	---	W	H	R	R	
2-4-7	Painting inspection	Fidelity to Design/ Spec	Project specification	App. Procedure	QC Report	---	W	R	R	R	
2-5- Instruments											
2-5-1	Material Inspection	Chemical Comp. / Mechanical Prop.	ASME or ASTM Code	App. Dwg.	Material Certificate	---	R	R	R	R	
2-5-2	Calibration Check	Adequate Performance	Project specification	Project specification	Calibration Certificate, Inspection report	---	W	R	R	R	
2-5-3	Tag & Model No & specification Check	Fidelity to Design/ Spec	App. Data Sheet & Dwg.	App. Data Sheet	QC Report, Inspection report	---	W	R	R	R	
2-6- Cables and Wires											
2-6-1	Visual Inspection	Fidelity to Design/ Spec	Project Spec.	App. Data sheet	QC Report	---	W	R	R	R	
2-6-2	Test report, Type test Certificate, Manufacturer Declaration review	Adequate Performance	IEC60502	App. Data sheet	Type Certificate/ test report	---	R	R	R	R	

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شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴	INSPECTION & TEST PLAN (ITP)								شماره صفحه: ۱۱ از ۱۳			
	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه				
	BK	GCS	HY	120	QC	PR	0001	00				

ITP No.	Part Name / Activity	Characteristic to Be Verified	Acceptance Criteria	Reference Documents	Verifying Document	Extent of Check	Participation By				Remark
							HY	TPI	HE/DI	Owner	
2-7- Junction Box											
2-7-1	Visual Inspection, accessories check	Fidelity to Design/ Spec	App. Dwg. + App. Data Sheet	App. Dwg. + App. Data Sheet	QC Report	---	W	R	R	R	
2-7-2	Tag & Model No. Check	Fidelity to Design/ Spec	App. Dwg. + App. Data Sheet	App. Dwg. + App. Data Sheet	QC Report	---	W	R	R	R	
2-7-3	Review IP, ATEX certificate	Fidelity to Design/ Spec	IEC60529, IEC60079	App. Dwg. + App. Data Sheet	QC Report	---	R	R	R	R	
2-8- Electromotor											
2-8-1	Visual Inspection	Fidelity to Design/ Spec	Manufacture Data Sheet	Manufacture Data Sheet and Drawing	QC Report	---	W	R	R	R	
2-8-2	Dimensional Check	Fidelity to Design/ Spec	Manufacture Drawing	Manufacture Drawing	QC Report	---	W	R	R	R	
2-8-3	Type test certificate, IP, ATEX certificate, Routine tests report Review	Adequate Performance	IEC60529, IEC60079, IEC60034	Project Specification and Manufacture standard	Certificate / Manufacturer test report	---	R	R	R	R	
2-8-4	Packing inspection and painting	Fidelity to Design/ Spec	Project Specification	Project Specification and Manufacture standard	QC Report	---	W	R	R	R	
2-9- Local Switch Panel											
2-9-1	Visual Inspection	Fidelity to Design/ Spec	Manufacture Data Sheet	Manufacture Data Sheet and Drawing	QC Report, Inspection report	---	W	W	R	R	

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شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴	INSPECTION & TEST PLAN (ITP)								شماره صفحه: ۱۲ از ۱۳			
	نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادر کننده	بسته کاری	پروژه				
	00	0001	PR	QC	120	HY	GCS	BK				

ITP No.	Part Name / Activity	Characteristic to Be Verified	Acceptance Criteria	Reference Documents	Verifying Document	Extent of Check	Participation By				Remark
							HY	TPI	HE/DI	Owner	
2-9-2	Dimensional Check	Fidelity to Design/ Spec	Manufacture Drawing	Manufacture Drawing	QC Report, Inspection report	---	W	R	R	R	
2-10- Control Panel (Indoor-Safe Area)											
2-10-1	Visual Inspection	Fidelity to Design/ Spec	Manufacture Data Sheet	Manufacture Data Sheet and Drawing	QC Report, Inspection report	---	W	W	R	R	
2-10-2	Function test (Power and start-up check, I/O check)	Adequate Performance	Project Spec	Project Spec.	QC Report, Inspection report	---	W	H	R	R	
2-10-3	Main equipment certificate, IP, ATEX, SIL certificate Review	Fidelity to Design/ Spec	IEC60529, IEC60079, IEC60034	Project Specification and Manufacture standard	QC Report, Inspection report	---	R	R	R	R	
2-11- Valves											
2-11-1	Material Inspection	Chemical Comp. / Mechanical Prop.	ASTM Code	App. Dwg. + App. Data Sheet	Material Certificate	---	R	R	R	R	
2-11-2	Visual and Dimensional Inspection	Fidelity to Design/ Spec	App. Dwg.	App. Dwg.	QC Report	---	W	R	R	R	
2-12- Strainers											
2-12-1	Material Inspection	Chemical Comp. / Mechanical Prop.	ASTM Code	App. Dwg. + App. Data Sheet	Material Certificate	---	R	R	R	R	
2-12-2	Hydro Test	Mechanical Strength	Project Spec.	Project Spec.	Test Report	---	W	R	R	R	

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شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴	INSPECTION & TEST PLAN (ITP)								شماره صفحه: ۱۳ از ۱۳			
	نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادر کننده	بسته کاری	پروژه				
	00	0001	PR	QC	120	HY	GCS	BK				

ITP No.	Part Name / Activity	Characteristic to Be Verified	Acceptance Criteria	Reference Documents	Verifying Document	Extent of Check	Participation By				Remark
							HY	TPI	HE/DI	Owner	
2-12-3	Visual and Dimensional Inspection	Fidelity to Design/ Spec	App. Dwg.	App. Dwg.	QC Report	---	W	R	R	R	
2-13- Piping Items											
2-13-1	Material Inspection	Chemical Comp. / Mechanical Prop.	ASTM Code	App. Procedure	Material Certificate	---	R	W	R	R	
2-13-2	NDTs	Mechanical Integrity	Approved Procedure	ASTM Code & Approved Procedure	NDE Report	---	W	R	R	R	
2-13-3	Hydrostatic Test	Mechanical Strength	Approved Procedure	Approved Procedure	Test Report	---	W	R	R	R	
2-13-4	Visual Inspection	Fidelity to Design/ Spec	App. Dwg.	App. Dwg.	QC Report	---	W	W	R	R	
2-14- Compressor assembly											
2-14-1	Assembly Inspection	Component Integrity	App. DWG	App. DWG	Inspection Report	---	W	W	W	R	
2-14-2	Final Visual and Dimensional Inspection	Fidelity to Design/ Spec	App. DWG	App. DWG	Inspection Report	---	W	W	W	R	
2-14-3	Painting Inspection	Fidelity to Design/ Spec	Project specification	App. Procedure	Test Report	---	W	R	R	R	