

	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض و ابنیه تحت الارض خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک (قرارداد 03 BK-HD-GCS-CO-0008)								
	WORK BREAKDOWN STRUCTURE (WBS)								
شماره پیمان: ۰۵۳ - ۰۷۳ - ۹۱۸۴	پروژه BK	بسته کاری GCS	صادر کننده HY	تسهیلات 120	رشته PM	نوع مدرک WB	سریال 0001	نسخه V02	شماره صفحه: ۱ از ۷

طرح نگهداشت و افزایش تولید ۲۷ مخزن

WORK BREAKDOWN STRUCTURE (WBS)

نگهداشت و افزایش تولید میدان نفتی بینک

V02	MAR.2023	AFC	Havayar Co.	M.Fakharian	A.M.Mohseni	
V01	MAR.2023	AFC	Havayar Co.	M.Fakharian	M.Mehrshad	
V00	JAN.2023	IFR	Havayar Co.	M.Fakharian	M.Mehrshad	
Rev.	Date	Purpose of Issue / Status	Prepared by:	Checked by:	Approved by:	CLIENT Approval

status:

IFA: Issued For Approval

IFR: Issued For Review

IFI: Issued For Information

AFC: Approved For Construction



نگهداشت و افزایش تولید میدان نفتی بینک
سطح الارض و ابنیه تحت الارض

خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک
(قرارداد BK-HD-GCS-CO-0008_03)



WORK BREAKDOWN STRUCTURE (WBS)

شماره پیمان:	پروژه	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	شماره صفحه: ۲ از ۲
۰۵۳ - ۰۷۳ - ۹۱۸۴	BK	GCS	HY	120	PM	WB	0001	V02	

REVISION RECORD SHEET

Page	V00	V01	V02	V03	V04	Page	V00	V01	V02	V03	V04
1	X	X	X			65					
2	X	X	X			66					
3	X	X	X			67					
4			X			68					
5			X			69					
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نگهداشت و افزایش تولید میدان نفتی بینک
سطح الارض و اینیه تحت الارض

خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک
(قرارداد BK-HD-GCS-CO-0008_03)



WORK BREAKDOWN STRUCTURE (WBS)

شماره پیمان:	پروژه	کار	بسته کاری	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	شماره صفحه: از ۷
۰۵۳ - ۰۷۳ - ۹۱۸۴	BK	GCS	HY	120	PM	WB	0001	V02		

#	Description	Doc. No.	W.F. (Disc)	W.F. (Total)	Remarks
	GAS COMPRESSOR		100.00%	100.00%	
1	ENGINEERING		3.00%	3.00%	
1.1	General/ Management		20.00%	0.60%	
1.1.1	List		80.00%	0.48%	
1.1.1.1	VENDOR PRINT INDEX & SCHEDULE (VPIS)	BK-GCS-HY-120-GE-LI-0001	20.00%	0.10%	
1.1.1.2	WORK BREAKDOWN STRUCTURE	BK-GCS-HY-120-GE-WB-0001	30.00%	0.14%	
1.1.1.3	SUB VENDOR LIST	BK-GCS-HY-120-GE-VL-0001	10.00%	0.05%	
1.1.1.4	TIME SCHEDULE	BK-GCS-HY-120-GE-SH-0001	10.00%	0.05%	
1.1.1.5	SPARE PART LIST	BK-GCS-HY-120-GE-LI-0002	10.00%	0.05%	
1.1.1.6	FINAL DATA BOOK INDEX	BK-GCS-HY-120-GE-LI-0003	10.00%	0.05%	
1.1.1.7	PACKING LIST	BK-GCS-HY-120-GE-LI-0004	10.00%	0.05%	
1.1.2	Drawing/Diagram		10.00%	0.06%	
1.1.2.1	NAME PLATE DRAWING	BK-GCS-HY-120-GE-DW-0001	100.00%	0.06%	
1.1.3	Reports		10.00%	0.06%	
1.1.3.1	FINAL DATA BOOK	BK-GCS-HY-120-GE-DO-0001	100.00%	0.06%	
1.2	QA/QC		15.00%	0.45%	
1.2.1	Procedure/Plan		90.00%	0.41%	
1.2.1.1	INSPECTION & TEST PLAN (ITP)	BK-GCS-HY-120-QC-PR-0001	30.00%	0.12%	
1.2.1.2	W.P.S & P.Q.R	BK-GCS-HY-120-QC-PR-0002	10.00%	0.04%	
1.2.1.3	SURFACE PREPARATION AND PAINTING PROCEDURE	BK-GCS-HY-120-QC-PR-0003	10.00%	0.04%	
1.2.1.4	NDE PROCEDURE	BK-GCS-HY-120-QC-PR-0004	10.00%	0.04%	
1.2.1.5	HYDROSTATIC/ PNEUMATIC TEST PROCEDURE	BK-GCS-HY-120-QC-PR-0005	10.00%	0.04%	
1.2.1.6	FAT PROCEDURE	BK-GCS-HY-120-QC-PR-0006	15.00%	0.06%	
1.2.1.7	SAT (PERFORMANCE TEST) PROCEDURE	BK-GCS-HY-120-QC-PR-0007	15.00%	0.06%	
1.2.2	Manual		10.00%	0.05%	
1.2.2.1	INSTALLATION, OPERATION & MAINTENANCE MANUAL (Including As-Built Docs)	BK-GCS-HY-120-QC-ML-0001	100.00%	0.05%	
1.3	Process		15.00%	0.45%	
1.3.1	Calculation		10.00%	0.05%	
1.3.1.1	CALCULATION NOTE FOR PSV SIZING	BK-GCS-HY-120-PR-CN-0001	50.00%	0.02%	
1.3.1.2	CALCULATION NOTE FOR CONTROL VALVE SIZING	BK-GCS-HY-120-PR-CN-0002	50.00%	0.02%	
1.3.2	Philosophy		10.00%	0.05%	
1.3.2.1	CONTROL PHILOSOPHY	BK-GCS-HY-120-PR-PH-0001	100.00%	0.05%	
1.3.3	Drawing/Diagram		50.00%	0.23%	
1.3.3.1	PFD	BK-GCS-HY-120-PR-PF-0001	10.00%	0.02%	
1.3.3.2	P&I DIAGRAMS	BK-GCS-HY-120-PR-PI-0001	90.00%	0.20%	
1.3.4	List		30.00%	0.14%	
1.3.4.1	UTILITY CONSUMPTION LIST	BK-GCS-HY-120-PR-LI-0001	30.00%	0.04%	



نگهداشت و افزایش تولید میدان نفتی بینک
سطح الارض و اینیه تحت الارض

خرید پکیج های کمپرسور گاز (رفت و برگشتی) بینک
(قرارداد BK-HD-GCS-CO-0008_03)



WORK BREAKDOWN STRUCTURE (WBS)

نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادرکننده	بسته کاری	پروژه	شماره پیمان:
V02	0001	WB	PM	120	HY	GCS	BK	۰۵۳ - ۰۷۳ - ۹۱۸۴

شماره صفحه: ۷ از ۷

#	Description	Doc. No.	W.F. (Disc)	W.F. (Total)	Remarks
1.3.4.2	EQUIPMENT LIST	BK-GCS-HY-120-PR-LI-0002	50.00%	0.07%	
1.3.4.3	RELEIF LOAD SUMMERY	BK-GCS-HY-120-PR-LI-0003	20.00%	0.03%	
1.4	Mechanical		25.00%	0.75%	
1.4.1	Drawing/Diagram		60.00%	0.45%	
1.4.1.1	COMPRESSOR PACKAGE GENERAL ARRANGEMENT DRAWING	BK-GCS-HY-120-ME-DW-0001	50.00%	0.23%	
1.4.1.2	CROSS SECTIONAL DRAWING	BK-GCS-HY-120-ME-DW-0002	30.00%	0.14%	
1.4.1.3	Shaft coupling assembly drawing and bill of material	BK-GCS-HY-120-ME-DW-0003	20.00%	0.09%	
1.4.2	Datasheet		40.00%	0.30%	
1.4.2.1	DETAILED D/SH FOR COMPRESSOR (API-618) WITH PERFORMANCE CURVES	BK-GCS-HY-120-ME-DS-0001	100.00%	0.30%	
1.5	Instrument		15.00%	0.45%	
1.5.1	DATASHEETs		25.00%	0.11%	
1.5.1.1	INSTRUMENT DATASHEETS / CERTIFICATES	BK-GCS-HY-120-IN-DS-0001	20.00%	0.02%	
1.5.1.2	DATASHEET FOR CONTROL/REGULATOR VALVES	BK-GCS-HY-120-IN-DS-0002	20.00%	0.02%	
1.5.1.3	DATASHEET FOR ON/OFF VALVES (IF ANY)	BK-GCS-HY-120-IN-DS-0003	20.00%	0.02%	
1.5.1.4	DATASHEET FOR SAFETY VALVES	BK-GCS-HY-120-IN-DS-0004	20.00%	0.02%	
1.5.1.5	CONTROL PANEL PARTS DATA SHEET/LICENCE LIST/ CERTIFICATES	BK-GCS-HY-120-IN-DS-0005	20.00%	0.02%	
1.5.2	List		20.00%	0.09%	
1.5.2.1	CAUSE & EFFECT CHARTS LIST	BK-GCS-HY-120-IN-LI-0001	20.00%	0.02%	
1.5.2.2	INSTRUMENT/F&G LIST	BK-GCS-HY-120-IN-LI-0002	20.00%	0.02%	
1.5.2.3	INSTRUMENT CABLE LIST	BK-GCS-HY-120-IN-LI-0003	20.00%	0.02%	
1.5.2.4	ALARM & SET POINT LIST	BK-GCS-HY-120-IN-LI-0004	20.00%	0.02%	
1.5.2.5	I/O List	BK-GCS-HY-120-IN-LI-0005	20.00%	0.02%	
1.5.3	Drawing/Diagram		50.00%	0.23%	
1.5.3.1	HMI AND GRAPHICS PRINTOUT	BK-GCS-HY-120-IN-DW-0001	10.00%	0.02%	
1.5.3.2	CONTROL SYSTEM CABINETS AND CONSOLES LAYOUT DRAWING	BK-GCS-HY-120-IN-DW-0002	10.00%	0.02%	
1.5.3.3	JB TERMINATION DRAWING	BK-GCS-HY-120-IN-DW-0003	5.00%	0.01%	
1.5.3.4	INSTRUMENT EARTH DISTRIBUTION DIAGRAM	BK-GCS-HY-120-IN-DW-0004	5.00%	0.01%	
1.5.3.5	UCP CONTROL AND SAFETY LOOP DIAGRAM	BK-GCS-HY-120-IN-DW-0005	10.00%	0.02%	
1.5.3.6	UCP CONTROL AND SAFETY LOGIC DIAGRAM	BK-GCS-HY-120-IN-DW-0006	10.00%	0.02%	
1.5.3.7	HOOK UP DRAWING	BK-GCS-HY-120-IN-DW-0007	5.00%	0.01%	
1.5.3.8	PLC WIRING DIAGRAM & TERMINAL DETAILS	BK-GCS-HY-120-IN-DG-0001	15.00%	0.03%	
1.5.3.9	OVERAL CONTROL/SAFETY SYSTEM CONFIGURATION DIAGRAM	BK-GCS-HY-120-IN-DG-0002	10.00%	0.02%	
1.5.3.10	LCP AND GAUGE BOARD LAYOUT	BK-GCS-HY-120-IN-PY-0001	10.00%	0.02%	
1.5.3.11	INSTRUMENT CABLE ROUTE/ MAIN TUBING LAYOUT DRAWING	BK-GCS-HY-120-IN-PY-0002	10.00%	0.02%	
1.5.4	Procedure/Plan		5.00%	0.02%	
1.5.4.1	SAT PROCEDURE FOR CONTROL SYSTEM	BK-GCS-HY-120-IN-PR-0001	50.00%	0.01%	
1.5.4.2	FAT PROCEDURE FOR CONTROL SYSTEM	BK-GCS-HY-120-IN-PR-0002	50.00%	0.01%	
1.6	Electrical		10.00%	0.30%	



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(قرارداد BK-HD-GCS-CO-0008_03)



WORK BREAKDOWN STRUCTURE (WBS)

نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادرکننده	بسته کاری	پروژه	شماره پیمان:
V02	0001	WB	PM	120	HY	GCS	BK	۰۵۳ - ۰۷۳ - ۹۱۸۴

شماره صفحه: ۷ از ۷

#	Description	Doc. No.	W.F. (Disc)	W.F. (Total)	Remarks
1.6.1	DATASHEETs		50.00%	0.15%	
1.6.1.1	D/SH (W/CURVE, DRAWING & CERTIFICATE) FOR COMPRESSOR MAIN MOTOR	BK-GCS-HY-120-EL-DS-0001	80.00%	0.12%	
1.6.1.2	DATASHEET (W/DRAWING) FOR AUXILIARY MOTORS	BK-GCS-HY-120-EL-DS-0002	20.00%	0.03%	
1.6.2	Drawing/Diagram		20.00%	0.06%	
1.6.2.1	ELECTRICAL WIRING DIAGRAM AND CABLE LIST	BK-GCS-HY-120-EL-DW-0001	100.00%	0.06%	
1.6.3	List		30.00%	0.09%	
1.6.3.1	ELECTRICAL LOAD LIST	BK-GCS-HY-120-EL-LI-0001	100.00%	0.09%	
2	SUPPLY OF MATERIAL & FABRICATION/CONSTRUCTION		94.00%	94.00%	
2.1	Bare Block		57.84%	54.37%	
2.1.1	Crank Case		10.74%	5.84%	
2.1.1.1	Supply of Material		70.00%	4.09%	
2.1.1.2	Fabrication (w/Inspections)		30.00%	1.75%	
2.1.2	Crank Shaft		12.90%	7.01%	
2.1.2.1	Supply of Material		70.00%	4.91%	
2.1.2.2	Fabrication (w/Inspections)		30.00%	2.10%	
2.1.3	Connecting Rod		10.74%	5.84%	
2.1.3.1	Supply of Material		70.00%	4.09%	
2.1.3.2	Fabrication (w/Inspections)		30.00%	1.75%	
2.1.4	Cylinder		12.90%	7.01%	
2.1.4.1	Supply of Material		70.00%	4.91%	
2.1.4.2	Fabrication (w/Inspections)		30.00%	2.10%	
2.1.5	Piston Rod		8.90%	4.84%	
2.1.5.1	Supply of Material		70.00%	3.39%	
2.1.5.2	Fabrication (w/Inspections)		30.00%	1.45%	
2.1.6	Piston Body		8.59%	4.67%	
2.1.6.1	Supply of Material		70.00%	3.27%	
2.1.6.2	Fabrication (w/Inspections)		30.00%	1.40%	
2.1.7	Ring & Packing		8.59%	4.67%	
2.1.7.1	Supply of Material		70.00%	3.27%	
2.1.7.2	Fabrication (w/Inspections)		30.00%	1.40%	
2.1.8	Cylinder Valve		9.68%	5.26%	
2.1.8.1	Supply of Material		70.00%	3.68%	
2.1.8.2	Fabrication (w/Inspections)		30.00%	1.58%	
2.1.9	Coupling		2.98%	1.62%	
2.1.9.1	Supply of Material		70.00%	1.13%	
2.1.9.2	Fabrication (w/Inspections)		30.00%	0.49%	
2.1.10	Cross Head		6.46%	3.51%	
2.1.10.1	Supply of Material		70.00%	2.46%	
2.1.10.2	Fabrication (w/Inspections)		30.00%	1.05%	
2.1.11	Accessory & Miscellaneous		7.52%	4.09%	
2.1.11.1	Supply of Material		70.00%	2.86%	
2.1.11.2	Fabrication (w/Inspections) + Bare Block Shipment to Iran		30.00%	1.23%	



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(قرارداد BK-HD-GCS-CO-0008_03)



WORK BREAKDOWN STRUCTURE (WBS)

شماره پیمان:	پروژه	کار	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	شماره صفحه: از ۷
۰۵۳ - ۰۷۳ - ۹۱۸۴	BK	GCS	HY	120	PM	WB	0001	V02		

#	Description	Doc. No.	W.F. (Disc)	W.F. (Total)	Remarks
2.2	Main Motors		10.64%	10.00%	
2.2.1	Supply of Material		70.00%	7.00%	
2.2.2	Fabrication (w/Inspections & FAT)		30.00%	3.00%	
2.3	Lube Oil System		4.51%	4.24%	
2.3.1	Supply of Material		70.00%	2.97%	
2.3.2	Fabrication (w/Inspections)		30.00%	1.27%	
2.4	Water Jacket Skid		5.06%	4.76%	
2.4.1	Supply of Material		70.00%	3.33%	
2.4.2	Fabrication (w/Inspections)		30.00%	1.43%	
2.5	Snubber		1.06%	1.00%	
2.5.1	Supply of Material		70.00%	0.70%	
2.5.2	Fabrication (w/Inspections)		30.00%	0.30%	
2.6	Instrument		2.23%	2.10%	
2.6.1	Supply of Material		70.00%	1.47%	
2.6.2	Fabrication (w/Inspection & FAT)		30.00%	0.63%	
2.7	TSV-PSV		0.98%	0.92%	
2.7.1	Supply of Material		70.00%	0.64%	
2.7.2	Fabrication (w/Inspections)		30.00%	0.28%	
2.8	LCP		0.98%	0.92%	
2.8.1	Supply of Material		70.00%	0.64%	
2.8.2	Fabrication (w/Inspections)		30.00%	0.28%	
2.9	Gauge Board		0.21%	0.20%	
2.9.1	Supply of Material		70.00%	0.14%	
2.9.2	Fabrication (w/Inspections)		30.00%	0.06%	
2.10	Cable		1.96%	1.84%	
2.10.1	Supply of Material		70.00%	1.29%	
2.10.2	Fabrication (w/Inspections)		30.00%	0.55%	
2.11	Cable Tray		0.16%	0.15%	
2.11.1	Supply of Material		70.00%	0.11%	
2.11.2	Fabrication (w/Inspections)		30.00%	0.05%	
2.12	UCP		7.45%	7.00%	
2.12.1	Supply of Material		70.00%	4.90%	
2.12.2	Fabrication (w/Inspections & FAT)		30.00%	2.10%	
2.13	Main Control Valves		1.47%	1.38%	
2.13.1	Supply of Material		70.00%	0.97%	
2.13.2	Fabrication (w/Inspections)		30.00%	0.41%	
2.14	Manual Valves		0.98%	0.92%	
2.14.1	Supply of Material		70.00%	0.64%	
2.14.2	Fabrication (w/Inspections)		30.00%	0.28%	
2.15	Piping Material		1.91%	1.80%	
2.15.1	Supply of Material		70.00%	1.26%	



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(قرارداد BK-HD-GCS-CO-0008_03)



WORK BREAKDOWN STRUCTURE (WBS)

شماره پیمان:	پروژه	کار بسته	صادر کننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	شماره صفحه: از ۷
۰۵۳ - ۰۷۳ - ۹۱۸۴	BK	GCS	HY	120	PM	WB	0001	V02	

#	Description	Doc. No.	W.F. (Disc)	W.F. (Total)	Remarks
2.15.2	Fabrication (w/Inspections)		30.00%	0.54%	
2.16	Collection Pot		0.53%	0.50%	
2.16.1	Supply of Material		70.00%	0.35%	
2.16.2	Fabrication (w/Inspections)		30.00%	0.15%	
2.17	Strainer		0.53%	0.50%	
2.17.1	Supply of Material		70.00%	0.35%	
2.17.2	Fabrication (w/Inspections)		30.00%	0.15%	
2.18	Main Skid Assembly & Shipment to Site		1.49%	1.40%	
2.18.1	Supply of Material		60.00%	0.84%	
2.18.2	Fabrication (w/Inspections) + Shipment to Site		40.00%	0.56%	
3	FACTORY TESTS		3.00%	3.00%	