طرح نگهداشت و افزایش تولید 27 مخزن

DATA SHEET FOR TEMPERATURE TRANSMITTER/SWITCH

نگهداشت و افزایش تولید میدان نفتی بینک

D02	SEP.2023	AFC	P.Hajisadeghi	M.Fakharian	A.M.Mohseni	
D01	NOV.2022	IFA	P.Hajisadeghi	M.Fakharian	M.Mehrshad	
D00	MAR.2022	IFC	P.Hajisadeghi	M.Fakharian	M.Mehrshad	
Rev.	**Date**	**Purpose of Issue / Status**	**Prepared by:**	**Checked by:**	**Approved by:**	**CLIENT Approval**

Class: 1 **CLIENT Doc. Number: F9Z-708926**

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

NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک DATA SHEETS FOR TEMPERATURE TRANSMITTER	شرکت توسعه پتروایران HIRGAN ENERGY

شماره پیمان:	پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	شماره صفحه: ۲ از ۷
۰۵۳ - ۰۷۳ - ۹۱۸۴	BK	GCS	PEDCO	120	IN	DT	0005	D02	

REVISION RECORD SHEET

Page	D00	D01	D02	D03	D04
1	X	X	X		
2	X	X	X		
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4	X	X			
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D02

REFERENCE DOCUMENTS :

Specification For Instrumentation	BK-GNRAL-PEDCO-000-IN-SP-0001-D04
Process Basis Of Design	BK-GNRAL-PEDCO-000-PR-DB-0001-D04
Piping Material Specification	BK-GCS-PEDCO-120-PI-SP-0001-D02
Hazardous Area Classification Layout	BK-GCS-PEDCO-120-SA-PY-0002-D00
Instrument & Control System Design Criteria	BK-GCS-PEDCO-120-IN-DC-0002-D01
Symbol & Legend For PFD and P&ID	BK-GCS-PEDCO-120-PR-PI-0001-D04
P&ID - Gas Compression Inlet Gas Pipeline (Binak)	BK-GCS-PEDCO-120-PR-PI-0002-D06
P&ID - Gas Compression Inlet Gas Pipeline (Golkhari)	BK-GCS-PEDCO-120-PR-PI-0003-D06
P&ID - Slug Catcher System	BK-GCS-PEDCO-120-PR-PI-0004-D06
P&ID - Gas Compression Inlet Knock Out Drum	BK-GCS-PEDCO-120-PR-PI-0005-D06
P&ID - 1st Stage Gas Compression Suction Drums	BK-GCS-PEDCO-120-PR-PI-0006-D06
P&ID - 1st Stage Gas Compression Compressors	BK-GCS-PEDCO-120-PR-PI-0007-D06
P&ID - 1st Stage Gas Compression Air Coolers	BK-GCS-PEDCO-120-PR-PI-0008-D06
P&ID - 2nd Stage Gas Compression Suction Drums	BK-GCS-PEDCO-120-PR-PI-0009-D06
P&ID - 2nd Stage Gas Compression Compressors	BK-GCS-PEDCO-120-PR-PI-0010-D06
P&ID - 2nd Stage Gas Compression Air Coolers	BK-GCS-PEDCO-120-PR-PI-0011-D06
P&ID - 2nd Stage Gas Compression Discharge Drum	BK-GCS-PEDCO-120-PR-PI-0012-D06
P&ID - Gas Compression Dehydration Package	BK-GCS-PEDCO-120-PR-PI-0013-D06
P&ID - Lean Glycol Storage Tank	BK-GCS-PEDCO-120-PR-PI-0014-D06
P&ID - Instrument & Plant Air System	BK-GCS-PEDCO-120-PR-PI-0015-D06
P&ID - Nitrogen Generation System	BK-GCS-PEDCO-120-PR-PI-0016-D06
P&ID - Close Drain System	BK-GCS-PEDCO-120-PR-PI-0017-D06
P&ID - Corrosion Inhibitor Package	BK-GCS-PEDCO-120-PR-PI-0018-D06
P&ID - Methanol Injection Package	BK-GCS-PEDCO-120-PR-PI-0019-D06
P&ID - LP Flare System	BK-GCS-PEDCO-120-PR-PI-0020-D06
P&ID - Oily Water Sewer	BK-GCS-PEDCO-120-PR-PI-0021-D05
P&ID - Fuel Gas System	BK-GCS-PEDCO-120-PR-PI-0022-D06
P&ID - Diesel Oil System	BK-GCS-PEDCO-120-PR-PI-0023-D06
P&ID - Potable Water System	BK-GCS-PEDCO-120-PR-PI-0024-D06
P&ID - Glycol Sump Drum	BK-GCS-PEDCO-120-PR-PI-0025-D06
P&ID - Fire Water Network	BK-GCS-PEDCO-120-SA-PI-0001-D04
P&ID - Total Flooding System For Extension of Existing Elect. Building	BK-GCS-PEDCO-120-SA-PI-0002-D02

GENERAL NOTES:

1- Vendor to follow materials indicated in the Data Sheets, related wetted parts, these materials can be as the minimum and shall be verified by vendor.

2 - Vendor is responsible for the selection of Materials suitable for the specified working conditions.

3 - All lines below 4", shall be expanded to 4" to be suitable for thermowell installation.

4- Tag plate as per Specification for Instrumentation, shall be stainless steel 304 SS (VTC). Following details shall be engraved on them:

- Tag Number
- Range Limit
- Service
- Manufacture Model

5- All transmitters shall have output short circuit & reverse polarity protection.

6- Sunshade to be considered for all transmitters.

7- All transmitters shall have a none-volatile EEprom memory to be used for storing the configuration data and sensor linearization data. This data must be retained in the transmitter to be functional upon power up.

8- Vendor shall identify and detail any deviation from the present instrument datasheet.

9- All transmitters shall be equipped with internal diagnostics software.

10- Environmental condition for field instrumentation of Binak oilfield shall be considered as per the following (According to "BK-GNRAL-PEDCO-000-PR-DB-0001: Process Basis Of Design":

Maximum ambient temperature: 50 (°C)
Minimum ambient temperature: 5 (°C)
Maximum steel surface exposed to sun: 85 (°C)
Maximum summer dry bulb: 50 (°C)
DB/RH for Summer HVAC Design: 41 °C / 61 %
DB for Winter HVAC Design: 6 °C

Relative Humidity:

- Maximum Design relative humidity (%): 100
- Minimum Design relative humidity (%): 0

NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک DATA SHEETS FOR TEMPERATURE TRANSMITTER	شرکت توسعه پتروایران HIRGAN ENERGY

شماره پیمان:	پروژه	بسته کاری	صادرکننده	تسهیلات	رشته	نوع مدرک	سریال	نسخه	شماره صفحه: ۵ از ۷
۰۵۳ – ۰۷۳ – ۹۱۸۴	BK	GCS	PEDCO	120	IN	DT	0005	D02	

TEMPERATURE TRANSMITTER

GENERAL DATA	1	Tag No.		SEE PAGE 6 & 7	
	2	P&ID	Service	SEE PAGE 6 & 7	SEE PAGE 6 & 7
	3	Piping Class	Line No.	SEE PAGE 6 & 7	SEE PAGE 6 & 7
	4	Line Size	Schedule	SEE PAGE 6 & 7	SEE PAGE 6 & 7
	5	Area Clacification		Zone 2- IIB T4	
		RFI Protection	Tropicalisation	NEEDED	NEEDED
PROCESS CONDITION	6	Fluid	Phase	SEE PAGE 6 & 7	SEE PAGE 6 & 7
	7	Operating Temperature	Design Temperature (°C)	SEE PAGE 6 & 7	SEE PAGE 6 & 7
	8	Operating Pressure	Design Pressure (barg)	SEE PAGE 6 & 7	SEE PAGE 6 & 7
	9	Density (Winter)	Density (Summer) (Kg/m3)	SEE PAGE 6 & 7	SEE PAGE 6 & 7
	10	Viscosity (Winter)	Viscosity (Summer) (C.P)	SEE PAGE 6 & 7	SEE PAGE 6 & 7
	11	Velocity	(m/s)	SEE PAGE 6 & 7	
TRANSMITTER	12	Thermoelement Type		RTD	
	13	Housing Material		Die-Cast Aluminum	
	14	Power Supply		24 VDC, Loop Powered	
	15	Output Signal	Communication Protocol	4-20 mA	HART (SMART TYPE)
	16	Instrument Range	Calibrated Range	VTA	SEE PAGE 6 & 7
	17	Integral Digital Indicator	Scale	Required	Calibrated in Engineering unit
	18	Accuracy		+/- 0.1 % Calibrated Span	
	19	Burn Out Direction		Up Scale	
	20	Ingress Protection	Electrical Certification	IP-65 as minimum	EEx ia, IIB T4
	21	Electrical Connection	Cable Gland	ISO M20 x 1.5	Required
	22	Mounting		Compact With Element	
	23	Calibration Range	Write Protection	VTA	SEE PAGE 6 & 7 (Note 3)
HEAD	24	Head Type	Material	Top Mounted-Screwed	Die-cast aluminum with baked vinyl finish.
	25	Terminal Block		With 4 Terminal Wires	
	26	Weather Protection	Electrical Certification	IP-65 as minimum	EEx ia,IIB T4
	27	Electrical Connection	Cable Gland	ISO M20	Required
	28	Nipple Size		1/2 " NPT	
TEMPERATURE ELEMENT	29	Type		RTD	
	30	Resistance	Wire Size	100 ohms at 0 degree Celsius.	VTA
	31	Single / Double	No. of Wires	SEE PAGE 6 & 7	3 Wires
	32	Sheath Material	Sheath OD	316 S.S	VTA
	33	Stem Length	Leads	To Match Thermowell	VTA
	34	Mounting Thread	Sealing	1/2 " NPT	Hermetical
	35	Accuracy		Class A as per IEC 60751	
THERMOWELL	36	Construction Type		Drilled Bar Stock in Tapered Configuration	
	37	Element Connection		1/2" NPT	
	38	Size (in)	Rating (lbs)	SEE PAGE 6 & 7	SEE PAGE 6 & 7
	39	Process Connection	Flange Facing / Finish (µm)	Flanged	SEE PAGE 6 & 7
	40	Insertion Length (U) mm	LAG Extension (T) mm	SEE PAGE 6 & 7	VTA
	41	Flange Material	Well Material	316L S.S	316L S.S
	42	Wake Frequency Standard		Required as per ASME PTC 19.3	
	43	NACE Requirements		SEE PAGE 6 & 7 (Note 1)	
	44				
PURCHASING DATA	45	Model	Manufacturer	will be finalized later	will be finalized later
	46	Supplier	Order	will be finalized later	will be finalized later
	47				

NOTES :

VTA : Vendor to Advise VTC : Vendor to Confirm N/A: Not Applicable

(1) Thermowell wake frequency analysis (stress calculation) according to ASME Power Test Code 19.3 shall be done & submitted by vendor.

(2) The element length shall be compatible with well length.

(3) The transmitters which shall be write protected are identified by note 2 in sheet 6. (Also see note 2 in sheet 7)

NISOC

نگهداشت و افزایش تولید میدان نفتی بینک

سطح الارض

احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک

DATA SHEETS FOR TEMPERATURE TRANSMITTER

نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادرکننده	بسته کاری	پروژه	شماره پیمان:
D02	0005	DT	IN	120	PEDCO	GCS	BK	۰۵۳ - ۰۷۳ - ۹۱۸۴

TEMPERATURE TRANSMITTER LIST

Item No.	Tag No.	System (note 2)	P&ID No. D02	Service	Piping Class	Line/Equipment No.	Line Size	Fluid	Phase	Operating Temperature (°C) D02	Design Temperature (°C) D02	Operating Pressure (barg) D02	Design Pressure (barg) D02	Density (Kg/m3) D02	Viscosity (CP)	Velocity (m/s) D02	Instrument Range (°C)	Calibration Range (°C) D02	Projection Length (mm)	Size (in)	Rating /Facing □	Max Insertion Length (U) mm (VTC -Note3)	Nace D02
1	TIT-2102	DCS	BK-GCS-PEDCO-120-PR-PI-0002-D06	TO INLET K.O. DRUM	AN07	GAS-111-0101-AN07-6"-PT	6"	PROCESS GAS	GAS	26.67~46.11	85	5.50	18.20	6.664165	0.01	16.15	VTA	0-100	162 NOTE 1	1 1/2"	300/RF	250	YES
2	TIT-2104	DCS	BK-GCS-PEDCO-120-PR-PI-0003-D06	TO SLUG CATCHER	FN07	GAS-111-0001-FN07-8"-PT	8"	PROCESS GAS	GAS	15~32	85	5.50	41.20	6.214058	0.01	17.17	VTA	0-100	162 NOTE 1	1 1/2"	600/RF	300	YES
3	TIT-2112	DCS	BK-GCS-PEDCO-120-PR-PI-0005-D06	INLET K.O. DRUM INPUT	AN07	GAS-111-0005-AN07-10"-PT	10"	PROCESS GAS	GAS	37.17~19.23	85	5.30	9	6.16486	0.01	17.37	VTA	0-100	162 NOTE 1	1 1/2"	300/RF	300	YES
4	TIT-2121A	DCS	BK-GCS-PEDCO-120-PR-PI-0007-D06 (1 of 3)	FROM 1ST STAGE GAS COMP. SUCTION DRUM (V-2101A)	AN05	GAS-111-0031A-AN05-8"-ET	8"	PROCESS GAS	GAS	18.88~36.78	155	4.90	22	5.771499	0.01	14.21	VTA	0-100	162 NOTE 1	1 1/2"	300/RF	300	YES
5	TIT-2124A (Note 2)	ESD	BK-GCS-PEDCO-120-PR-PI-0007-D06 (1 of 3)	TO 1ST STAGE AIR COOLER (AE-2101A)	CN05	GAS-111-0036A-CN05-6"-PT	6"	PROCESS GAS	GAS	113.1~124.8	155	19	22	15.38345	0.01	9.23	VTA	0-250	162 NOTE 1	1 1/2"	300/RF	250	YES
6	TIT-2121B	DCS	BK-GCS-PEDCO-120-PR-PI-0007-D06 (2 of 3)	FROM 1ST STAGE GAS COMP. SUCTION DRUM (V-2101B)	AN05	GAS-111-0031B-AN05-8"-ET	8"	PROCESS GAS	GAS	18.88~36.78	155	4.90	22	5.771499	0.01	14.21	VTA	0-100	162 NOTE 1	1 1/2"	300/RF	300	YES
7	TIT-2124B (Note 2)	ESD	BK-GCS-PEDCO-120-PR-PI-0007-D06 (2 of 3)	TO 1ST STAGE AIR COOLER (AE-2101B)	CN05	GAS-111-0036B-CN05-6"-PT	6"	PROCESS GAS	GAS	113.1~124.8	155	19	22	15.38345	0.01	9.23	VTA	0-250	162 NOTE 1	1 1/2"	300/RF	250	YES
8	TIT-2121C	DCS	BK-GCS-PEDCO-120-PR-PI-0007-D06 (3 of 3)	FROM 1ST STAGE GAS COMP. SUCTION DRUM (V-2101C)	AN05	GAS-111-0031C-AN05-8"-ET	8"	PROCESS GAS	GAS	18.88~36.78	155	4.90	22	5.771499	0.01	14.21	VTA	0-100	162 NOTE 1	1 1/2"	300/RF	300	YES
9	TIT-2124C (Note 2)	ESD	BK-GCS-PEDCO-120-PR-PI-0007-D06 (3 of 3)	TO 1ST STAGE AIR COOLER (AE-2101C)	CN05	GAS-111-0036C-CN05-6"-PT	6"	PROCESS GAS	GAS	113.1~124.8	155	19	22	15.38345	0.01	9.23	VTA	0-250	162 NOTE 1	1 1/2"	300/RF	250	YES
10	TIT-2126A	DCS	BK-GCS-PEDCO-120-PR-PI-0008-D06 (1 of 3)	AFTER 1ST STAGE AIR COOLER (AE-2101-A)	CS00	GAS-111-0037A-CS00-6"-NP	6"	PROCESS GAS	GAS	60	150	18.30	22	18.2771	0.01	7.77	VTA	0-120	162 NOTE 1	1 1/2"	300/RF	250	NO
11	TIT-2125A (Note 2)	ESD	BK-GCS-PEDCO-120-PR-PI-0008-D06 (1 of 3)	AFTER 1ST STAGE AIR COOLER (AE-2101-A)	CS00	GAS-111-0037A-CS00-6"-NP	6"	PROCESS GAS	GAS	60	150	18.30	22	18.2771	0.01	7.77	VTA	0-120	162 NOTE 1	1 1/2"	300/RF	250	NO
12	TIT-2126B	DCS	BK-GCS-PEDCO-120-PR-PI-0008-D06 (2 of 3)	AFTER 1ST STAGE AIR COOLER (AE-2101-B)	CS00	GAS-111-0037B-CS00-6"-NP	6"	PROCESS GAS	GAS	60	150	18.30	22	18.2771	0.01	7.77	VTA	0-120	162 NOTE 1	1 1/2"	300/RF	250	NO
13	TIT-2125B (Note 2)	ESD	BK-GCS-PEDCO-120-PR-PI-0008-D06 (2 of 3)	AFTER 1ST STAGE AIR COOLER (AE-2101-B)	CS00	GAS-111-0037B-CS00-6"-NP	6"	PROCESS GAS	GAS	60	150	18.30	22	18.2771	0.01	7.77	VTA	0-120	162 NOTE 1	1 1/2"	300/RF	250	NO
14	TIT-2126C	DCS	BK-GCS-PEDCO-120-PR-PI-0008-D06 (3 of 3)	AFTER 1ST STAGE AIR COOLER (AE-2101-C)	CS00	GAS-111-0037C-CS00-6"-NP	6"	PROCESS GAS	GAS	60	150	18.30	22	18.2771	0.01	7.77	VTA	0-120	162 NOTE 1	1 1/2"	300/RF	250	NO
15	TIT-2125C (Note 2)	ESD	BK-GCS-PEDCO-120-PR-PI-0008-D06 (3 of 3)	AFTER 1ST STAGE AIR COOLER (AE-2101-C)	CS00	GAS-111-0037C-CS00-6"-NP	6"	PROCESS GAS	GAS	60	150	18.30	22	18.2771	0.01	7.77	VTA	0-120	162 NOTE 1	1 1/2"	300/RF	250	NO
16	TIT-2131A	DCS	BK-GCS-PEDCO-120-PR-PI-0010-D06 (1 of 3)	FROM 2ND STAGE GAS COMP. SUCTION DRUM (V-2102A)	CN05	GAS-111-0044A-CN05-6"-ET	6"	PROCESS GAS	GAS	59.88~59.89	175	18.10	62	18.0832	0.01	7.85	VTA	0-120	162 NOTE 1	1 1/2"	300/RF	250	YES
17	TIT-2134A (Note 2)	ESD	BK-GCS-PEDCO-120-PR-PI-0010-D06 (1 of 3)	TO 2ND STAGE AIR COOLER (AE-2102A)	FN05	GAS-111-0051A-FN05-6"-IS	6"	PROCESS GAS	GAS	142.3/149.5	175	54.80	62	42.92249	0.01	3.31	VTA	0-300	162 NOTE 1	1 1/2"	600/RF	250	YES
18	TIT-2131B	DCS	BK-GCS-PEDCO-120-PR-PI-0010-D06 (2 of 3)	FROM 2ND STAGE GAS COMP. SUCTION DRUM (V-2102B)	CN05	GAS-111-0044B-CN05-6"-ET	6"	PROCESS GAS	GAS	59.88~59.89	175	18.10	62	18.0832	0.01	7.85	VTA	0-120	162 NOTE 1	1 1/2"	300/RF	250	YES
19	TIT-2134B (Note 2)	ESD	BK-GCS-PEDCO-120-PR-PI-0010-D06 (2 of 3)	TO 2ND STAGE AIR COOLER (AE-2102B)	FN05	GAS-111-0051B-FN05-6"-IS	6"	PROCESS GAS	GAS	142.3/149.5	175	54.80	62	42.92249	0.01	3.31	VTA	0-300	162 NOTE 1	1 1/2"	600/RF	250	YES
20	TIT-2131C	DCS	BK-GCS-PEDCO-120-PR-PI-0010-D06 (3 of 3)	FROM 2ND STAGE GAS COMP. SUCTION DRUM (V-2102C)	CN05	GAS-111-0044C-CN05-6"-ET	6"	PROCESS GAS	GAS	59.88~59.89	175	18.10	62	18.0832	0.01	7.85	VTA	0-120	162 NOTE 1	1 1/2"	300/RF	250	YES
21	TIT-2134C (Note 2)	ESD	BK-GCS-PEDCO-120-PR-PI-0010-D06 (3 of 3)	TO 2ND STAGE AIR COOLER (AE-2102C)	FN05	GAS-111-0051C-FN05-6"-IS	6"	PROCESS GAS	GAS	142.3/149.5	175	54.80	62	42.92249	0.01	3.31	VTA	0-300	162 NOTE 1	1 1/2"	600/RF	250	YES
22	TIT-2135A	DCS	BK-GCS-PEDCO-120-PR-PI-0011-D06 (1 of 3)	AFTER 2ND STAGE AIR COOLER (AE-2102-A)	FS00	GAS-111-0058A-FS00-6"-NP	6"	PROCESS GAS	GAS	60	175	54.10	62	59.63269	0.01	2.38	VTA	0-120	162 NOTE 1	1 1/2"	600/RF	250	YES
23	TIT-2136A (Note 2)	ESD	BK-GCS-PEDCO-120-PR-PI-0011-D06 (1 of 3)	AFTER 2ND STAGE AIR COOLER (AE-2102-A)	FS00	GAS-111-0058A-FS00-6"-NP	6"	PROCESS GAS	GAS	60	175	54.10	62	59.63269	0.01	2.38	VTA	0-120	162 NOTE 1	1 1/2"	600/RF	250	YES
24	TIT-2135B	DCS	BK-GCS-PEDCO-120-PR-PI-0011-D06 (2 of 3)	AFTER 2ND STAGE AIR COOLER (AE-2102-B)	FS00	GAS-111-0058B-FS00-6"-NP	6"	PROCESS GAS	GAS	60	175	54.10	62	59.63269	0.01	2.38	VTA	0-120	162 NOTE 1	1 1/2"	600/RF	250	YES
25	TIT-2136B (Note 2)	ESD	BK-GCS-PEDCO-120-PR-PI-0011-D06 (2 of 3)	AFTER 2ND STAGE AIR COOLER (AE-2102-B)	FS00	GAS-111-0058B-FS00-6"-NP	6"	PROCESS GAS	GAS	60	175	54.10	62	59.63269	0.01	2.38	VTA	0-120	162 NOTE 1	1 1/2"	600/RF	250	YES

NISOC	نگهداشت و افزایش تولید میدان نفتی بینک سطح الارض احداث ردیف تراکم گاز در ایستگاه جمع آوری بینک **DATA SHEETS FOR TEMPERATURE TRANSMITTER**	شرکت توسعه پتروایران HIRGAN ENERGY

نسخه	سریال	نوع مدرک	رشته	تسهیلات	صادرکننده	بسته کاری	پروژه	شماره پیمان:
D02	0005	DT	IN	120	PEDCO	GCS	BK	۰۵۳ - ۰۷۳ - ۹۱۸۴

TEMPERATURE TRANSMITTER LIST

Item No.	Tag No.	System (note 2)	P&ID No.	Service	Piping Class	Line/Equipment No.	Line Size	Fluid	Phase	Operating Temperature (°C)	Design Temperature (°C)	Operating Pressure (barg)	Design Pressure (barg)	Density (Kg/m3)	Viscosity (C.P)	Velocity (m/s)	Instrument Range (°C)	Calibration Range (°C)	Projection Length (mm)	Size (in)	Rating /Facing	Max Insertion Length (U) mm (VTC -Note3)	Nace
26	TIT-2135C	DCS	BK-GCS-PEDCO-120-PR-PI-0011-D06 (3 of 3)	AFTER 2ND STAGE AIR COOLER (AE-2102-C)	FS00	GAS-111-0058C-FS00-6"-NP	6"	PROCESS GAS	GAS	60	175	54.10	62	59.63269	0.01	2.38	VTA	0-120	162 NOTE 1	1 1/2"	600/RF	250	YES
27	TIT-2136C (Note 2)	ESD	BK-GCS-PEDCO-120-PR-PI-0011-D06 (3 of 3)	AFTER 2ND STAGE AIR COOLER (AE-2102-C)	FS00	GAS-111-0058C-FS00-6"-NP	6"	PROCESS GAS	GAS	60	175	54.10	62	59.63269	0.01	2.38	VTA	0-120	162 NOTE 1	1 1/2"	600/RF	250	YES
28	TT-2211	DCS	BK-GCS-PEDCO-120-PR-PI-0016-D06	NITROGEN RECEIVER OUTLET	AN01	NIT-112-0024-AN01-2"-PT	2"	NITROGEN	GAS	60	85	8	12.50	8.62	0.02	0.63	VTA	0-100	162 NOTE 1	1 1/2"	300/RF	200 (NOTE 3 IN GENERAL NOTES)	NO
29	TIT-2271	DCS	BK-GCS-PEDCO-120-PR-PI-0022-D06	FUEL GAS K.O. DRUM OUTLET	AN07	FLG-112-0110-AN07-2"-PT	2"	FUEL GAS	GAS	32	85	0.5	9.00	5.771499	0.01	0.64	VTA	0-100	162 NOTE 1	1 1/2"	300/RF	200 (NOTE 3 IN GENERAL NOTES)	YES

NOTES:

(1) Projection Length (mm) will be finallized by piping department.

(2) Transmitters shall be of the smart transmitter type with HART communication protocol,.Smart type transmitters selected for ESD application shall be configured as “write protection”.

(3) Thermowell wake frequency analysis (stress calculation) shall be done by vendor.