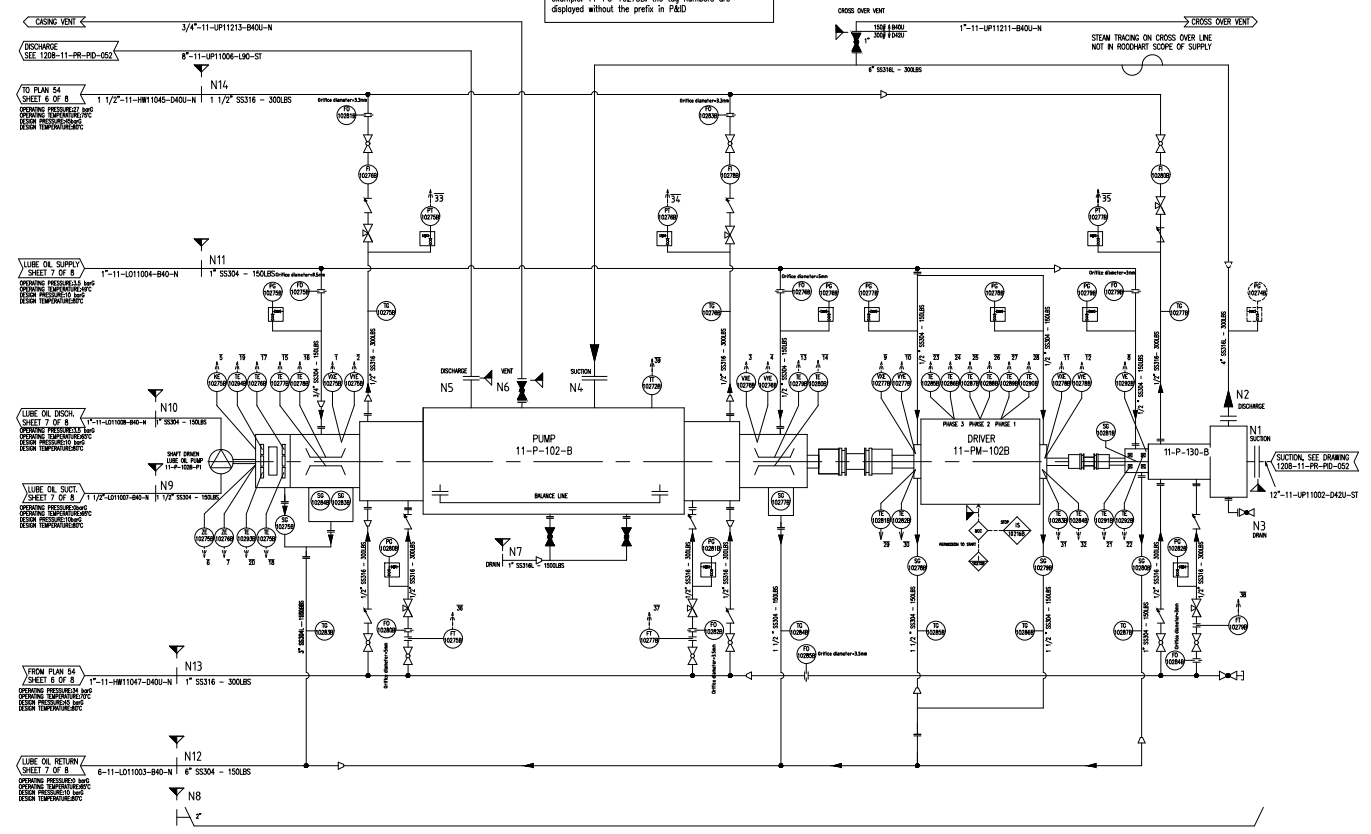


DOCUMENT TITLE:		DOCUMENT NUMBER:	
GENERAL ARRANGEMENT DRAWING		VD-1208-307A-DWG-210	
PUMP PERFORMANCE CURVE		VD-1208-307A-PCU-212	
PUMP DATA SHEET		VD-1208-307A-DSH-213	
CROSS SECTION DRAWING		VD-1208-307A-DWG-214	
MCC	MOTOR CONTROL CENTER		
ESD	EMERGENCY SHUTDOWN		
FCS	FOUNDATION FIELDBUS CONTROL SYSTEM		
CMS	CONDITION MONITORING SYSTEM		
MMS	MACHINE CONDITION MONITORING SYSTEM		
PI	PRESSURE INDICATOR	FT	FLOW TRANSMITTER
PT	PRESSURE TRANSMITTER	FO	FLOW ORIFICE
PD	DIFF. PRESSURE TRANSMITTER	SG	SIGHT GLASS
PCV	PRESSURE CONTROL VALVE	LG	LEVEL INDICATOR
PSV	SAFETY VALVE	LT	LEVEL TRANSMITTER
PDV	DIFF. PRESSURE VALVE	LV	LEVEL CONTROL VALVE
TG	TEMPERATURE INDICATOR	ZE	AXIAL DISPLACEMENT SENSOR
TT	TEMPERATURE TRANSMITTER	KE	KEY PHASOR
TE	RTD	VE	ACCELEROMETER
TCV	TEMPERATURE CONTROL VALVE	AOP	AUXILIARY OIL PUMP
VXE/VYE	VIBRATION PROBE	MOP	MAIN OIL PUMP
FI	FLOW INDICATOR	SDV	SOLENOID VALVE
	Ball valve N.O.		Scope indication (Vendor scope inside the white flags)
	Ball valve N.C.		Local instrument
	3 way instrument valve		Level indicator
	5 way instrument valve		Orifice
	Strainer		Cap
	Non-return valve		FCS
	Adjustable Orifice		MMS
	3 way valve		Emergency shut down interlock
	Pressure control valve		FCS interlock
	Pressure safety valve		Serial link
	Piping/tubing		Harwed connection
	Impulse line		
N14 To Plan 54	1 1/2" - 300# ASME 16.5 RF		
N13 From Plan 54	1" - 300# ASME 16.5 RF		
N12 Lube Oil Return	6" - 150# ASME 16.5 RF		
N11 Lube Oil Supply	1" - 150# ASME 16.5 RF		
N10 Lube Oil Discharge	1 1/2" - 150# ASME 16.5 RF		
N9 Lube Oil suction	1 1/2" - 150# ASME 16.5 RF		
N8 Base frame drain	2" - NPT FEMALE		
N7 Case drain	1" - 1500# ASME 16.5 RF		
N6 Case vent	3/4" - 1500# ASME 16.5 RF		
N5 Discharge	4" - 1500# ASME 16.5 LENS TYPE		
N4 Suction	6" - 300# ASME 16.5 RF		
N3 Case drain	3/4" - 300# ASME 16.5 RF		
N2 Discharge	4" - 300# ASME 16.5 RF		
N1 Suction	6" - 300# ASME 16.5 RF		
Item	Description	Size	
<p>□ NO COMMENTS: Documents/Drawings were checked by purchaser and further steps can be followed.</p> <p>□ COMMENTS AS MARKED: Documents/Drawings were checked by purchaser and marked comments must be considered by vendor. Vendor shall revise documents/drawings as per comments and the new revision of documents/drawings must be released prior to fabrication.</p> <p>□ UNREVIEWED: Documents/Drawings were checked and it is not comply with purchase order requirements at all.</p> <p>□ ACCEPTABLE WITH COMMENTS: Documents/Drawings were checked by purchaser and comments must be considered by vendor. Fabrication can proceed accordingly. Revised document to be issued after review or as final certified. However purchaser will check the revised document for proper incorporation of comments.</p> <p>□ NOT RETURNED: Document was received for information and not returned to the vendor.</p>			
Name:	Reg. No.:	Seq. No.:	
Signature:			
Date:			
Purchaser review & comments does not absolve the vendor of the responsibility for the correct design, manufacturing and operation of the equipment.			
Eng. Phase	Purpose of Distribution (POD)	Purpose of Issue (POI)	Purchaser's Action
11	20-10-2023	ISSUED FOR APPROVAL	S.E., A.B., G.C., A.S.
10	20-06-2020	ISSUED FOR APPROVAL	S.E., A.B., G.C., A.S.
09	20-03-2020	ISSUED FOR APPROVAL	G.C., A.B.C., A.D.V., J.S.V./A.
08	15-01-2020	ISSUED FOR APPROVAL	G.C., A.B.C., A.D.V., J.S.V./A.
06	03-03-2015	ISSUED FOR APPROVAL	H.V., A.B.C., A.D.V., J.S.V./A.
REV.	ISSUE DATE	DESCRIPTION	PREPARED BY, CHECKED BY, APPROVED BY, AUTHORIZED BY
OWNER:	MC:	SPEC CONTRACTOR:	
PROJECT: HENGAM FERTILIZER PROJECT			
VENDOR:			
TITLE: P&ID FOR 11-P-102-A HIGH PRESSURE CARBAMATE PUMPS UNIT			
SCALE: NON	OWNER PROJECT NO.: NA	VENDOR DWS. NO.: 2285-102AB-2006	REV: 8/22
SHT.: 4 OF 8	PREC. PROJECT NO.: 1208	PREC. DWS. NO.: VD-1208-307A-PID-211	11 A1

Note 1
All instrumentation tag numbers have prefix 11, for example: 11-PG-102/5B. The tag numbers are displayed without the prefix in P&ID



DOCUMENT TITLE:		DOCUMENT NUMBER:	
GENERAL ARRANGEMENT DRAWING	VD-1208-307A-DWG-210	PUMP PERFORMANCE CURVE	VD-1208-307A-PCU-212
PUMP DATA SHEET	VD-1208-307A-DSH-213	CROSS SECTION DRAWING	VD-1208-307A-DWG-214

MCC	MOTOR CONTROL CENTER		
ESD	EMERGENCY SHUTDOWN		
FCS	FOUNDATION FIELDBUS CONTROL SYSTEM		
CMS	CONDITION MONITORING SYSTEM		
MMS	MACHINE CONDITION MONITORING SYSTEM		
PG	PRESSURE INDICATOR	FT	FLOW TRANSMITTER
PT	PRESSURE TRANSMITTER	FO	FLOW ORIFICE
PDT	DIFF. PRESSURE TRANSMITTER	SG	SIGHT GLASS
PCV	PRESSURE CONTROL VALVE	LG	LEVEL INDICATOR
PSV	SAFETY VALVE	LV	LEVEL TRANSMITTER
PDV	DIFF. PRESSURE VALVE	LT	LEVEL CONTROL VALVE
TG	TEMPERATURE INDICATOR	ZE	AXIAL DISPLACEMENT SENSOR
TT	TEMPERATURE TRANSMITTER	KE	KEY PHASOR
TE	RTD	VE	ACCELEROMETER
TCV	TEMPERATURE CONTROL VALVE	AOP	AUXILIARY OIL PUMP
VXE/VYE	VIBRATION PROBE	MOP	MAIN OIL PUMP
FI	FLOW INDICATOR	SDV	SOLENOID VALVE

	Ball valve N.O.		Scope indication (vendor scope inside the white flags)
	Ball valve N.C.		Local instrument
	Globe valve N.O.		Level indicator
	3 way instrument valve		Orifice
	5 way instrument valve		Cap
	Strainer		FCS
	Non-return valve		MMS
	Adjustable Orifice		Emergency shut down interlock
	3 way valve		FCS Interlock
	Pressure control valve		Serial link
	Pressure safety valve		Harwed connection
	Piping/tubing		
	Impulse line		

N14 To Plan 54	1 1/2" - 300# ASME 16.5 RF
N13 From Plan 54	1" - 300# ASME 16.5 RF
N12 Lube Oil Return	6" - 150# ASME 16.5 RF
N11 Lube Oil Supply	1" - 150# ASME 16.5 RF
N10 Lube Oil Discharge	1" - 150# ASME 16.5 RF
N9 Lube Oil suction	1 1/2" - 150# ASME 16.5 RF
N8 Base frame drain	2" - NPT FEMALE
N7 Case drain	1" - 1500# ASME 16.5 RF
N6 Case vent	3/4" - 1500# ASME 16.5 RF
N5 Discharge	4" - 1500# ASME 16.5 LENS TYPE
N4 Suction	6" - 300# ASME 16.5 RF
N3 Case drain	3/4" - 300# ASME 16.5 RF
N2 Discharge	4" - 300# ASME 16.5 RF
N1 Suction	6" - 300# ASME 16.5 RF

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 REJECTED: Documents/Drawings were checked and it is not comply with purchase order requirements at all.
 ACCEPTABLE WITH COMMENTS: Documents/Drawings were checked by purchaser and comments must be considered by vendor. Fabrication can proceed accordingly. Revised document to be issued either for review or as final certified. However purchaser will check the revised document for proper incorporation of comments.
 NOT RETURNED: Document was received for information and not returned to the vendor.

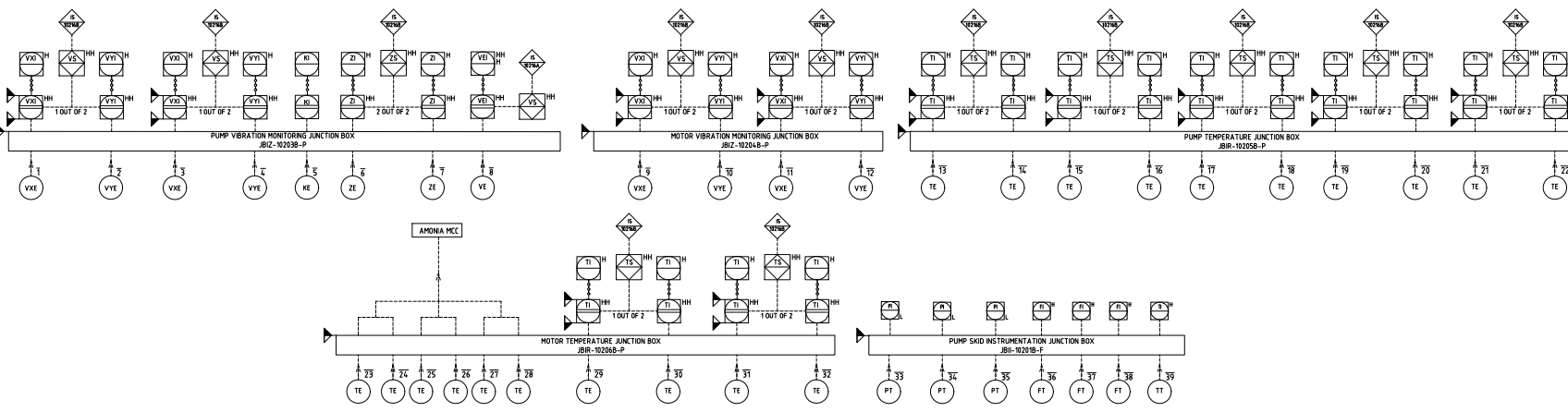
Name: _____ Reg. No.: _____ Seq. No.: _____
 Signature: _____
 Date: _____

Purchaser review & comments does not absolve the vendor of the responsibility for the correct design, manufacturing and operation of the equipment.

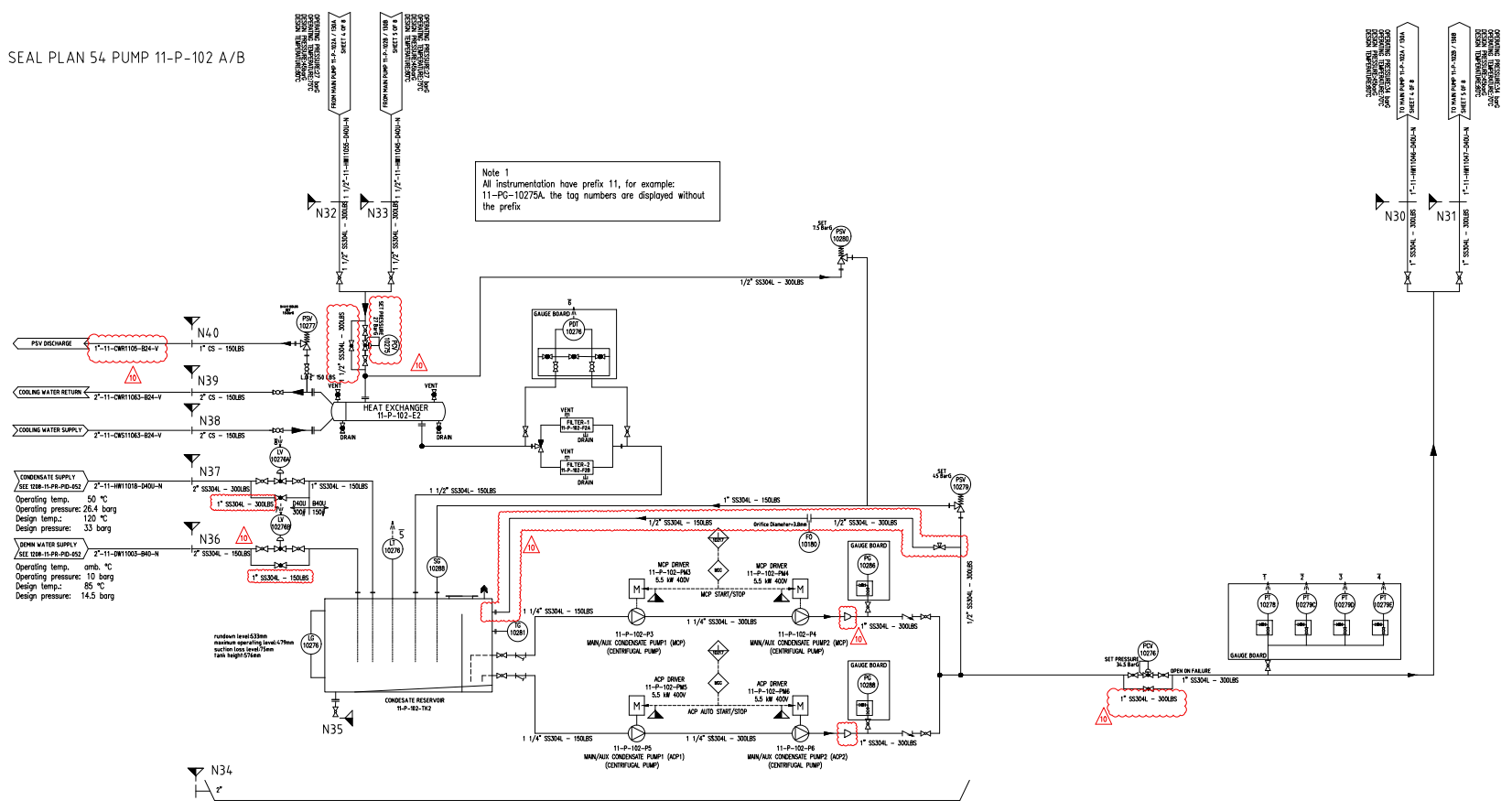
Eng. Phase	Purpose of Distribution (POD)	Purpose of Issue (POI)	Purchaser's Action
11	20-10-2023	ISSUED FOR APPROVAL	S.E., A.B., G.C., A.S.
10	20-06-2020	ISSUED FOR APPROVAL	S.E., A.B., G.C., A.S.
09	09-03-2020	ISSUED FOR APPROVAL	G.C., A.B.C., A.D.V., J.S.V./A.
08	15-01-2020	ISSUED FOR APPROVAL	G.C., A.B.C., A.D.V., J.S.V./A.
00	03-03-2015	ISSUED FOR APPROVAL	H.V., A.B.C., A.D.V., J.S.V./A.

OWNER	MC	SPCC CONTRACTOR

PROJECT:	HENGAM FERTILIZER PROJECT		
VENDOR:			
TITLE:	P&ID FOR 11-P-102-B HIGH PRESSURE CARBAMATE PUMPS UNIT		
SCALE:	NON	OWNER PROJECT NO.: NA	VENDOR DWS. NO.: 2285-102AB-2006
SHT.: 5 OF 8	PREC. PROJECT NO.: 1208	PREC. DWS. NO.: VD-1208-307A-PID-211	REV. 11 A1



SEAL PLAN 54 PUMP 11-P-102 A/B

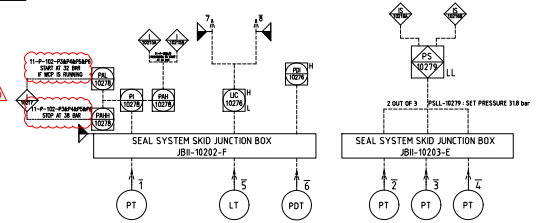


Note 1
All instrumentation have prefix 11, for example:
11-PG-10275A, the tag numbers are displayed without the prefix

CONDENSATE SUPPLY
SIZ 1208-11-PR-PD-052
Operating temp.: 50 °C
Operating pressure: 26.4 barg
Design temp.: 120 °C
Design pressure: 33 barg

WATER SUPPLY
SIZ 1208-11-PR-PD-052
Operating temp.: amb. °C
Operating pressure: 10 barg
Design temp.: 85 °C
Design pressure: 14.5 barg

CONDENSATE RESERVOIR
11-P-102-T2
max. operating level: 47mm
max. low level: 1mm
min. liquid level: 1mm



DOCUMENT TITLE:		DOCUMENT NUMBER:	
GENERAL ARRANGEMENT DRAWING	VD-1208-307A-DWG-210	PUMP PERFORMANCE CURVE	VD-1208-307A-PCU-212
PUMP DATA SHEET	VD-1208-307A-DSH-213	CROSS SECTION DRAWING	VD-1208-307A-DWG-214

MCC	MOTOR CONTROL CENTER	
ESD	EMERGENCY SHUTDOWN	
FCS	FOUNDATION FIELDBUS CONTROL SYSTEM	
CMS	CONDITION MONITORING SYSTEM	
MMS	MACHINE CONDITION MONITORING SYSTEM	
PG	PRESSURE INDICATOR	FT FLOW TRANSMITTER
PT	PRESSURE TRANSMITTER	FO FLOW ORIFICE
PDT	DIFF. PRESSURE TRANSMITTER	SG SIGHT GLASS
PCV	PRESSURE CONTROL VALVE	LG LEVEL INDICATOR
PSV	SAFETY VALVE	LT LEVEL TRANSMITTER
PDV	DIFF. PRESSURE VALVE	LV LEVEL CONTROL VALVE
TG	TEMPERATURE INDICATOR	ZE AXIAL DISPLACEMENT SENSOR
TT	TEMPERATURE TRANSMITTER	KE KEY PHASOR
TE	RTD	VE ACCELEROMETER
TCV	TEMPERATURE CONTROL VALVE	AOP AUXILIARY OIL PUMP
VXE/VYE	VIBRATION PROBE	MOP MAIN OIL PUMP
FI	FLOW INDICATOR	SDV SOLENOID VALVE

Ball valve N.O.	Scope indication (vendor scope inside the white flags)
Ball valve N.C.	Local instrument
3 way Instrument valve	Level indicator
5 way Instrument valve	Orifice
Strainer	Cap
Non-return valve	FCS
Adjustable Orifice	MMS
3 way valve	Emergency shut down interlock
Pressure control valve	FCS Interlock
Pressure safety valve	Serial link
Piping/tubing	Harwired connection
Impulse line	

N40	PSV Discharge	1" - 150# ASME B16.5 RF
N39	Cooling water return	2" - 150# ASME B16.5 RF
N38	Cooling water supply	2" - 150# ASME B16.5 RF
N37	Condensate supply	2" - 300# ASME B16.5 RF
N36	Demit water supply	2" - 150# ASME B16.5 RF
N35	Condensate tank drain	1" - NPT female
N34	Base Frame drain	2" - NPT female
N33	From pump P-102B/130B	1 1/2" - 300# ASME B16.5 RF
N32	From pump P-102A/130A	1 1/2" - 300# ASME B16.5 RF
N31	To pump P-102B/130B	1" - 300# ASME B16.5 RF
N30	To pump P-102A/130A	1" - 300# ASME B16.5 RF

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 REVISIONS: Documents/Drawings were checked and it is not comply with purchase order requirements at all.
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 NOT RETURNED: Document was received for information and not returned to the vendor.

DE	Eng. Phase	Purpose of Distribution (POD)	Purpose of Issue (PCI)	Purchaser's Action
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11	20-02-2023	ISSUED FOR APPROVAL	S.E.	A.B.	G.C.	A.S.
10	30-06-2020	ISSUED FOR APPROVAL	S.E.	A.B.	G.C.	A.S.
09	08-03-2020	ISSUED FOR APPROVAL	G.C.	A.B.C.	A.D.V.	J.V.D.V.
08	13-01-2020	ISSUED FOR APPROVAL	G.C.	A.B.C.	A.D.V.	J.V.D.V.
00	02-03-2016	ISSUED FOR APPROVAL	H.V.	A.B.C.	A.D.V.	J.V.D.V.

REV.	ISSUE DATE	DESCRIPTION	PREPARED BY	CHECKED BY	APPROVED BY	AUTHORIZED BY
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OWNER:

PROJECT: HENGAM FERTILIZER PROJECT

VENDOR:

TITLE: P&ID FOR 11-P-102-A/B
HIGH PRESSURE CARBAMATE PUMP UNIT

SCALE: NON

OWNER PROJECT NO.: NA 2285-102AB-2006

PREP. DATE: 2023-02-20

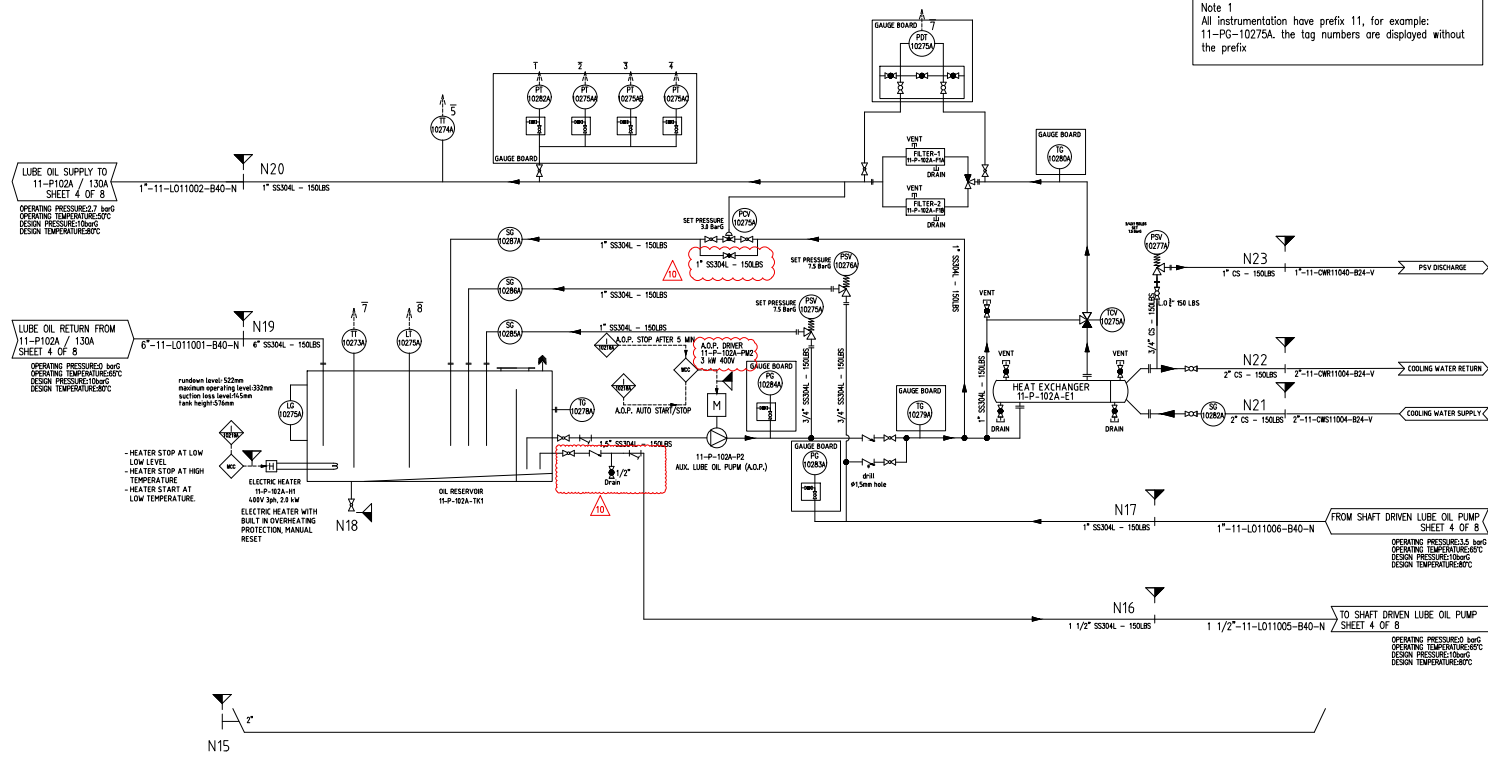
PREP. DWG. NO.: VD-1208-307A-PID-211

REV: 11

SHEET: 8 OF 8

PREC. PROJECT NO.: 1208

LUBE OIL UNIT PUMP 11-P-102A



Note 1
All instrumentation have prefix 11, for example:
11-PG-10275A. the tag numbers are displayed without the prefix

LUBE OIL SUPPLY TO 11-P102A / 130A SHEET 4 OF 8
OPERATING PRESSURE: 7.7 barg
OPERATING TEMPERATURE: 60°C
DESIGN PRESSURE: 10barg
DESIGN TEMPERATURE: 30°C

LUBE OIL RETURN FROM 11-P102A / 130A SHEET 4 OF 8
OPERATING PRESSURE: 6.0 barg
OPERATING TEMPERATURE: 60°C
DESIGN PRESSURE: 10barg
DESIGN TEMPERATURE: 30°C

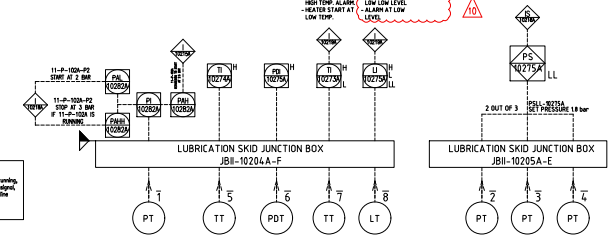
Heater level: 52mm
Maximum operating level: 332mm
Section line level: 57mm
Tank height: 57mm

- HEATER STOP AT LOW LEVEL
- HEATER STOP AT HIGH TEMPERATURE
- HEATER START AT LOW TEMPERATURE

ELECTRIC HEATER 11-P-102A-H1
400V 3Ph, 2.8 kW

ELECTRIC HEATER WITH BUILT IN OVERHEATING PROTECTION, MANUAL RESET

NOTE 2:
11-P-102A-F STOP AT 3 BAR if the pump 11-P-102A-N running.
Heater 11-P-102A-H1 stop at 3 BAR if 11-P-102A-F running.
The pump will start and reset the pressure of the tank if the 3-bar will reach to min.



DOCUMENT TITLE:		DOCUMENT NUMBER:	
GENERAL ARRANGEMENT DRAWING	VD-1208-307A-DWG-210		
PUMP PERFORMANCE CURVE	VD-1208-307A-PCU-212		
PUMP DATA SHEET	VD-1208-307A-DSH-213		
CROSS SECTION DRAWING	VD-1208-307A-DWG-214		
MCC	MOTOR CONTROL CENTER		
ESD	EMERGENCY SHUTDOWN		
FCS	FOUNDATION FIELDBUS CONTROL SYSTEM		
CMS	CONDITION MONITORING SYSTEM		
MMS	MACHINE CONDITION MONITORING SYSTEM		
PG	PRESSURE INDICATOR	FT	FLOW TRANSMITTER
PT	PRESSURE TRANSMITTER	FO	FLOW ORIFICE
PDT	DIFF. PRESSURE TRANSMITTER	SG	SIGHT GLASS
PCV	PRESSURE CONTROL VALVE	LG	LEVEL INDICATOR
PSV	SAFETY VALVE	LV	LEVEL TRANSMITTER
PDV	DIFF. PRESSURE VALVE	LT	LEVEL CONTROL VALVE
TG	TEMPERATURE INDICATOR	ZE	AXIAL DISPLACEMENT SENSOR
TT	TEMPERATURE TRANSMITTER	KE	KEY PHASOR
TE	RTD	VE	ACCELEROMETER
TCV	TEMPERATURE CONTROL VALVE	AOP	AUXILIARY OIL PUMP
VXE/VYE	VIBRATION PROBE	MOP	MAIN OIL PUMP
FI	FLOW INDICATOR	SOV	SOLENOID VALVE

Symbol	Description	Symbol	Description
Ball valve N.O.	Ball valve N.C.	Local instrument	Level indicator
3 way Instrument valve	5 way Instrument valve	Orifice	Cap
Strainer	Non-return valve	FCS	MMS
Adjustable Orifice	3 way valve	Emergency shut down interlock	FCS Interlock
Pressure control valve	Pressure safety valve	Serial link	Harwired connection
Piping/tubing	Impulse line		

Item	Description	Size
N23	PSV Discharge	1" - 150# ASME B16.5 RF
N22	Cooling Water Return	2" - 150# ASME B16.5 RF
N21	Cooling Water Supply	2" - 150# ASME B16.5 RF
N20	Lube oil supply	1" - 150# ASME B16.5 RF
N19	Lube oil return	6" - 150# ASME B16.5 RF
N18	Lube oil tank drain	1" - NPT female
N17	From shaft driven lube oil pump	1" - 150# ASME B16.5 RF
N16	To shaft driven lube oil pump	1 1/2" - 150# ASME B16.5 RF
N15	Base frame drain	2" - NPT female

NO COMMENTS: Documents/Drawings were checked by purchaser and further steps can be followed.
 COMMENTS AS MARKED: Documents/Drawings were checked by purchaser and marked comments must be considered by vendor. Vendor shall revise documents/drawings as per comments and the new revision of documents/drawings must be released prior to fabrication.
 REJECTED: Documents/Drawings were checked and it is not comply with purchase order requirements at all.
 ACCEPTABLE WITH COMMENTS: Documents/Drawings were checked by purchaser and comments must be considered by vendor. Fabrication can proceed accordingly. Revised document to be issued either for review or as final certified. However purchaser will check the revised document for proper incorporation of comments.
 NOT RETURNED: Document was received for information and not returned to the vendor.

DE	Eng. Phase	Purpose of Distribution (POD)	Purpose of Issue (POI)	Purchaser's Action

REV.	ISSUE DATE	DESCRIPTION	PREPARED BY	CHECKED BY	APPROVED BY	AUTHORIZED BY
11	20-10-2023	ISSUED FOR APPROVAL	S.E.	A.B.	G.C.	A.S.
10	30-06-2020	ISSUED FOR APPROVAL	S.E.	A.B.	G.C.	A.S.
09	09-03-2022	ISSUED FOR APPROVAL	G.C.	A.B.S.C.	J.M.V.	J.S.V.V.
08	15-01-2022	ISSUED FOR APPROVAL	G.C.	A.B.S.C.	J.M.V.	J.S.V.V.
06	05-03-2015	ISSUED FOR APPROVAL	H.V.	A.B.S.C.	J.M.V.	J.S.V.V.

OWNER:

MC:

SPOC CONTRACTOR:

PROJECT: HENGAM FERTILIZER PROJECT

VENDOR:

TITLE: P&ID FOR 11-P-102-A HIGH PRESSURE CARBAMATE PUMPS UNIT

SCALE: NON

OWNER PROJECT NO.: NA

VENDOR DWS. NO.: 2285-102AB-2006

REV: 8/26

SHT.: 7 OF 8

PREC. PROJECT NO.: 1208

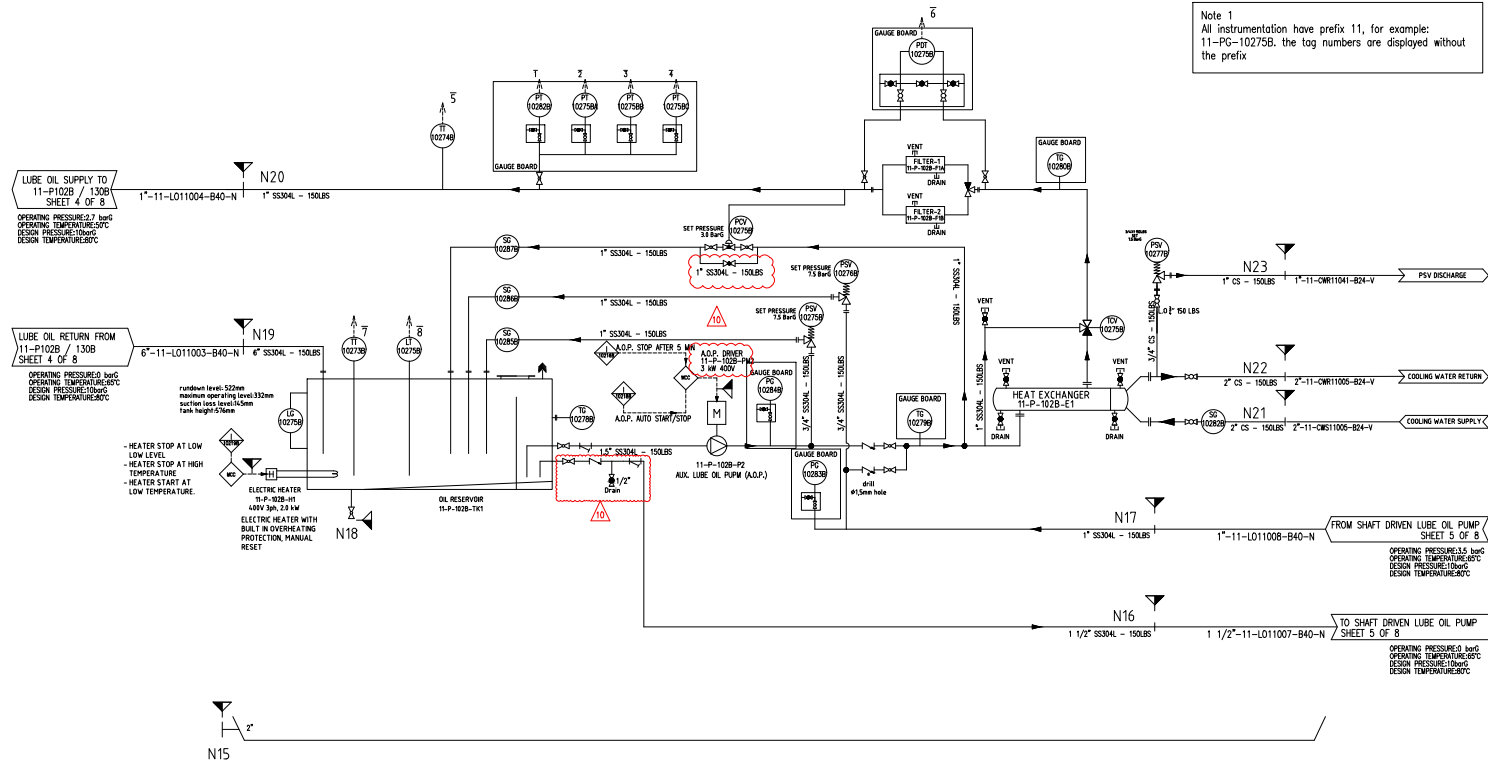
PIECED DWS. NO.: VD-1208-307A-PID-211

11

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LUBE OIL UNIT PUMP 11-P-102B



Note 1
All instrumentation have prefix 11, for example:
11-PC-10275B. The tag numbers are displayed without the prefix

LUBE OIL SUPPLY TO 11-P102B / 130B SHEET 4 OF 8
OPERATING PRESSURE: 7 bar
OPERATING TEMPERATURE: 60°C
DESIGN PRESSURE: 10bar
DESIGN TEMPERATURE: 200°C

LUBE OIL RETURN FROM 11-P102B / 130B SHEET 4 OF 8
OPERATING PRESSURE: 5 bar
OPERATING TEMPERATURE: 60°C
DESIGN PRESSURE: 10bar
DESIGN TEMPERATURE: 200°C

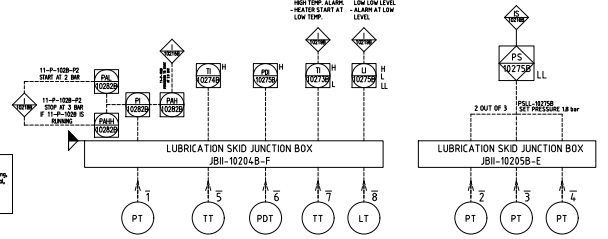
runfill level: 52mm
maximum operating level: 332mm
section line length: 10m
tank height: 574mm

- HEATER STOP AT LOW LEVEL
- HEATER STOP AT HIGH TEMPERATURE
- HEATER START AT LOW TEMPERATURE

ELECTRIC HEATER 11-P-102B-H1
400V 3Ph, 2.8 kW
ELECTRIC HEATER WITH BUILT IN OVERHEATING PROTECTION, MANUAL RESET

11-P-102B-P2 STOP AT 3 bar
11-P-102B-P2 STOP AT 3 bar
11-P-102B-P2 STOP AT 3 bar

NOTE 2:
11-P-102B-P2 STOP AT 3 bar if the pump 11-P-102B is running. However if the 11-P-102B stopped and there is no running signal, the pump will start and reach the pressure of the tank of the tank until shaft stopped to rotate.



DOCUMENT TITLE:		DOCUMENT NUMBER:	
GENERAL ARRANGEMENT DRAWING		VD-1208-307A-DWG-210	
PUMP PERFORMANCE CURVE		VD-1208-307A-PCU-212	
PUMP DATA SHEET		VD-1208-307A-DSH-213	
CROSS SECTION DRAWING		VD-1208-307A-DWG-214	
MCC	MOTOR CONTROL CENTER		
ESD	EMERGENCY SHUTDOWN		
FCS	FOUNDATION FIELDBUS CONTROL SYSTEM		
CMS	CONDITION MONITORING SYSTEM		
MMS	MACHINE CONDITION MONITORING SYSTEM		
PG	PRESSURE INDICATOR	FT	FLOW TRANSMITTER
PT	PRESSURE TRANSMITTER	FO	FLOW ORIFICE
PDT	DIFF. PRESSURE TRANSMITTER	SG	SIGHT GLASS
PCV	PRESSURE CONTROL VALVE	LG	LEVEL INDICATOR
PSV	SAFETY VALVE	LV	LEVEL TRANSMITTER
PDV	DIFF. PRESSURE VALVE	LT	LEVEL CONTROL VALVE
TG	TEMPERATURE INDICATOR	ZE	AXIAL DISPLACEMENT SENSOR
TT	TEMPERATURE TRANSMITTER	KE	KEY PHASOR
TE	RTD	VE	ACCELEROMETER
TCV	TEMPERATURE CONTROL VALVE	AOP	AUXILIARY OIL PUMP
VXE/VYE	VIBRATION PROBE	MOP	MAIN OIL PUMP
FI	FLOW INDICATOR	SOV	SOLENOID VALVE

Ball valve N.O.	Scope indication (vendor scope inside the white flags)
Ball valve N.C.	Local instrument
3 way Instrument valve	Level indicator
5 way Instrument valve	Orifice
Strainer	Cap
Non-return valve	FCS
Adjustable Orifice	MMS
3 way valve	Emergency shut down interlock
Pressure control valve	FCS Interlock
Pressure safety valve	Serial link
Piping/tubing	Harwired connection
Impulse line	

N23	PSV Discharge	1"	150#	ASME B16.5	RF
N22	Cooling Water Return	2"	150#	ASME B16.5	RF
N21	Cooling Water Supply	2"	150#	ASME B16.5	RF
N20	Lube Oil supply	1"	150#	ASME B16.5	RF
N19	Lube Oil return	6"	150#	ASME B16.5	RF
N18	Drain	1"	NPT	female	
N17	From shaft driven lube oil pump	1"	150#	ASME B16.5	RF
N16	To shaft driven lube oil pump	1 1/2"	150#	ASME B16.5	RF
N15	Base frame drain	2"	NPT	female	
	Description				Size

NO COMMENTS: Documents/Drawings were checked by purchaser and further steps can be followed.
 COMMENTS AS MARKED: Documents/Drawings were checked by purchaser and marked comments must be considered by vendor. Vendor shall revise documents/drawings as per comments and the new revision of documents/drawings must be released prior to fabrication.
 REJECTED: Documents/Drawings were checked and it is not comply with purchase order requirements at all.
 ACCEPTABLE WITH COMMENTS: Documents/Drawings were checked by purchaser and comments must be considered by vendor. Fabrication can proceed accordingly. Revised document to be issued either for review or as final certified. However purchaser will check the revised document for proper incorporation of comments.
 NOT RETURNED: Document was received for information and not returned to the vendor.

DE	Eng. Phase	Purpose of Distribution (POD)	Purpose of Issue (PCI)	Purchaser's Action
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11	20-02-2023	ISSUED FOR APPROVAL	S.E.	A.B.	G.C.	A.S.
10	30-08-2022	ISSUED FOR APPROVAL	S.E.	A.B.	G.C.	A.S.
09	03-03-2022	ISSUED FOR APPROVAL	G.C.	A.B.C.	J.M.V.	J.V.J.V.
08	11-01-2022	ISSUED FOR APPROVAL	G.C.	A.B.C.	J.M.V.	J.V.J.V.
00	02-09-2015	ISSUED FOR APPROVAL	H.V.	A.B.C.	J.M.V.	J.V.J.V.

REV.	ISSUE DATE	DESCRIPTION	PREPARED BY	CHECKED BY	APPROVED BY	AUTHORITY BY
OWNER						
MC:						
SPOC CONTRACTOR:						

PROJECT: HENGAM FERTILIZER PROJECT

VENDOR: **R**OODHART

TITLE: P&ID FOR 11-P-102-B
HIGH PRESSURE CARBAMATE PUMPS UNIT

SCALE: NON
OWNER PROJECT NO.: NA
VENDOR DWS. NO.: 2285-102AB-2006
REV: 02R

SHT.: 8 OF 8
P&ID PROJECT NO.: 1208
P&ID DWS. NO.: VD-1208-307A-PID-211
REV: 11
A1