



Anadarko Canada Corporation

WO# 5330-001

QUOTE: 0603-36

REV A) ISSUED FOR APPROVAL CP 06/05/15

REV 0) ISSUED FOR CONSTRUCTION CP 06/05/24

REV 1) REVISED PER CUSTOMER MARK-UPS CP 06/05/29

REV 2) AS BUILT CMP 06/07/10 *cp*

**AS BUILT**

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**20"OD x 8'-0"s/s AB Sour Separator Package c/w 3"  
Sr. Meter Run**

## **BILL OF MATERIALS**

Anadarko Canada Corporation

WO# 5330-001

REV 2) AS BUILT CMP 06/07/10

1 of 8

## 1.0 INSTRUMENTATION:

<u>TAG #</u>	<u>QTY</u>	<u>DESCRIPTION</u>
LC-1005	1	<b>FISHER MODEL L2 LIQUID LEVEL CONTROLLER</b> 2" NPT process connection 1-7/8" $\phi$ x 12" long vertical PVC displacer <u>Sour</u> service Snap acting control Direct acting instrument signal Mounted in a 3" 600# RF hub flange tapped 2" NPT
LCV-1005	1	<b>FISHER D2 LIQUID CONTROL VALVE</b> 1" NPT end connections <u>Sour</u> service trim 15 to 35 psig input signal 3/8" orifice size (adjustable orifice size) Air to Open / Fail Closed
LG-1005	1	<b>PENBERTHY LEVEL GAUGE</b> One (1) 1RM5 Reflex c/w Model 330J gauge valves, 3/4" NPT <u>Sour</u> Service
FE-1003	1	<b>DANIEL DUAL CHAMBER METER RUN</b> 3" 600#, <b>Sch.80 (used 600# for availability)</b> <u>Sour</u> service trim, 62" F/F 100% Radiography, PWHT Flanged outer ends Built to AGA fig. 3C One (1) - 1" 3000# T.O.L. and one (1) 3/4" 3000# T.O.L. downstream C/w straightening vanes
DPIT,PIT,TIT -1003 TE-1003/TW-1003	1	<b>CUSTOMER SUPPLIED FLO-BOSS 103 TRANSMITTER</b> c/w customer supplied 5 valve manifold Installed by IPS <u>c/w 1/2" S.S. tubing 1/2" ball valves off meter run</u> 5 valve manifold to be vented outside
BPCV-1003	1	<b>SPOOL PIECE FOR FUTURE BACK PRESSURE VALVE</b> 3" 300# RF Sch.80 Spool
ESDV-1000	1	<b>RADIUS ACTUATED BALL VALVE</b> 2" 600# RF RP Nutron Ball Valve, B2-R20R06SZ <u>Sour</u> Service c/w Radius Actuator, Model# ASO40A 80 psig supply pressure Air to open, fail closed

PSHH-1000	1	<b><u>HLR TYPE 7970T HI-PRESSURE PILOT</u></b> 316 SST internals, <i>Sour</i> Service 1/2" NPT connection Auto reset / manual adjustment <u>Set @ 638 psig rising</u>
PY-1000 <u>PY-1004</u>	2	<b>AMOT THREE WAY SWITCHING VALVE</b> Model 4057 Type CP 1/4" NPT connections Viton O-rings Manual latch/pressure operated 26 psig Min. arming pressure required 125 psig MAWP @ 180°F
LSHH-1004 LSLL-1004	2	<b>SOR PNEUMATIC LEVEL SWITCHES</b> Model 1530C-G2A-C-JO-PS-NC 2" NPT process connection 1/4" FNPT pilot connection 316 SS float, 303 SS body Snap, direct action, 1,500 psig MAWP <u>Sour</u> service trim
PI-1004	1	<b>WIKA PRESSURE GAUGE</b> Model 233.54 4" dia. face x 1/2" NPT bottom mount end connection SS case and internals 0 <u>to</u> 1,000 psig, dual scale
PSV-1000	1	<b>MERCER PRESSURE RELIEF VALVE</b> Model 9100 1" NPT inlet x 1" NPT outlet <u>AB Sour</u> service trim WCB body, "D" Orifice 720 psig set pressure Mounted in a 2" 300# RF hub flange tapped 1" NPT
TI-1004	1	<b>TREND TEMPERATURE INDICATOR</b> 1/2" NPT back connection 3"φ dial, 6" stem -40 <u>to</u> 160°F range - Dual scale 1/2" NPT x 3/4" NPT x 6" "U" dimension length 316 SST thermowell

FQI-1005	1	<b>NUFLO TURBINE METER &amp; TOTALIZER</b> 1" NPT end connections 5 <u>to</u> 50 GPM Capacity Magnetic pickup MC I Digital Totalizer, Local Display Scaleable pulse output C/w Prover Taps
PRV-1011/6000	2	<b>FISHER MODEL 67CFR-N224 INSTRUMENT GAS REGULATORS</b> 1/4" FNPT connections <u>Sour</u> service trim 250 psig MAWP 0 <u>to</u> 35 psig spring range c/w Tapped Bonnet
PRV-1012	1	<b>FISHER MODEL 67CFR-N227 INSTRUMENT GAS REGULATOR</b> 1/4" FNPT connections <u>Sour</u> service trim 250 psig MAWP 0 <u>to</u> 125 psig spring range c/w Tapped Bonnet

## 2.0 SKID & BUILDING SPECIFICATION

<u>TAG #</u>	<u>QTY</u>	<u>DESCRIPTION</u>
SK-100	1	<b>SKID BASE, 8'-0"W X 14'- 0"L</b> Main skid members – W8" @ 31#/ft Support members – W8 @ 31#/ft under vessel 3/16" checker plate under building only, C4 @ 5.4#/ft supports End Rolls, 2" skid foam insulation under building only
B-100	1	<b>FOAM PANEL BUILDING</b> 8'-0" Wide x 12'-0" Long x 8'-0" Low Eave Height x 8'-6" High Eave Height Shed Style Roof 1 1/2" Foam Panels One (1) 3'-0" x 7'-0" Foam Panel Door c/w, IWG Window, check chain, panic-lock, and weather-stripping One (1) 36" x 38" Double Sliding Window c/w Screen One (1) 12" x 12" Adjustable Duravent mounted low in the door
BH-102/103	2	<b>CATADYNE 12,000 BTU/HR. BUILDING HEATERS</b> Fuel supply is natural gas (customer has informed us that the wells will be sweet) 12 VDC starting element with 36' cables c/w regulator, safety shutoff, vent hood, thermostat and grill

## 3.0 MANUAL VALVE SPECIFICATIONS

<u>CODE</u>	<u>QTY</u>	<u>DESCRIPTION</u>
2"BA4N1S	7	2" NPT RP, 3000 PSI, Nutron Ball Valve, Sour Service
1"BA4N1S	5	1" NPT RP, 3000 PSI, Nutron Ball Valve, Sour Service
3/4"BA4N1S	2	3/4" NPT RP, 3000 PSI, Nutron Ball Valves, Sour Service
1/2"BA4N1S	2	1/2" NPT RP, 3000 PSI, Nutron Ball Valve, Sour Service
1/2"BAF4N1S	2	1/2" NPT FP, 3000 PSI, Nutron Ball Valve, Sour Service
1/2"NE4P1S	6	1/2" 6000# MxF SS Century Needle Valves
1/4"NE4P1S	5	1/4" 6000# MxF SS Century Needle Valves
1/4"NE4P1	1	1/4" 6000# FxF SS Century Needle Valves
2"Y4H1S	1	2" NPT Class 800, Alta Y-Strainer, Sour Service
3"C1B1S	1	3" 300 ANSI RF, Wheatley Swing Check Valve, Sour Service
1"C4H1S	1	1" NPT 2160#, Wheatley Swing Check Valve, Sour Service
2"C4H1S	2	2" NPT 2160#, Wheatley Swing Check Valve, Sour Service
1/2"C4H1S	1	1/2" NPT 2160#, Wheatley Swing Check Valve, Sour Service
2"GL1D1S	1	2" 600 ANSI RF, Navco Globe Valve, Sour Service
1"GL4H1S	2	1" NPT Class 800, Navco Globe Valve, Sour Service

## 4.0 FUEL GAS SYSTEM

<u>TAG #</u>	<u>QTY</u>	<u>DESCRIPTION</u>
V-1010	1	<b>6"OD X 36"S/S 285psi MAWP FUEL GAS SCRUBBER</b> Sour Process Fuel Gas HLSD-1010 Registered in Alberta, BC & Sask. RT-1 and PWHT
PRV-1010	1	<b>FISHER MODEL 627 PRESSURE REGULATOR</b> 1" FNPT end connections 2000# Steel body construction, nylon disc <u>Sour</u> Service 70 <del>to</del> 150 psig range 1/8"φ orifice
PSV-1010	1	<b>MERCER PRESSURE RELIEF VALVE</b> Model 9100 "D" Orifice 1" NPT inlet x 1" NPT outlet <u>Sour</u> service trim, WCB body 150 psig set pressure, mounted on scrubber
PI-1010	1	<b>WIKA PRESSURE GAUGE</b> Liquid fill, SS case and internals 2 1/2" dia. face x 1/4" NPT end connection 0 to 200 psig range, dual Scale Mounted on fuel gas scrubber

## 5.0 PACKAGING SPECIFICATIONS

- Relief valves are tied into a common 3" 150 ANSI vent header, directed outside
- Piping to skid edge c/w individual connections
- Piping and instrument tubing securely supported
- Package is readied or dismantled only to the extent required for shipping
- Gas inlet is 3" 600 ANSI welded and flanged piping, reduced to 2" globe and ESD valve c/w 1" threaded by-pass and spec break to 300 ANSI, increased back to 3" and tied into vessel inlet
- Gas outlet is 3" welded and flanged piping c/w 3" spool piece for future BPCV, directed off skid
- Liquid outlet line is 2" threaded piping, reduced to 1" turbine meter, 1" by-pass and 1" dump valve, tied into gas outlet piping for re-injection and also tied into vessel drain line**
- Liquid outlet line consists of a 1" turbine meter and by-pass c/w **2" prover taps with ball valves**
- Vessel drain line is 1" threaded piping, increased to 2" before being directed off skid
- Level gauge, y-strainer and scrubber drains are all tied into vessel drain line
- All vented instruments, including the 5 valve manifold are tied into a 1/2" NPT common LP vent header, directed outside**

## 6.0 MATERIAL SPECIFICATIONS

### Pressure Vessels

Heads	SA-516-70N
Shell	SA-516-70N
Skirt	SA-36
Pipe	SA-106-Gr.B SMLS
Flanges	SA-105-N
Weld Fittings	SA-234-WPB

### Threaded Piping

Pipe	SA-106-B, Sch.80 SMLS
Threaded Fittings	SA-105N, 3000#

### Welded Piping

Pipe	SA-106-B, Sch. 80 SMLS
Flanges	SA-105N
Weld Fittings	SA-234-WPB
Thredolets and couplings	SA-105N
Gaskets	1/8", 316 S.S. Flex.
Bolting	SA-193-B7M, SA-194-2HM

### Instrument Tubing

Tubing	316 SST, 3/8"OD .035wt, 1/2"OD .035wt (meter run to measurement device)
Fittings	316 SST, Swagelok

## 7.0 TESTING / PWHT SPECIFICATIONS

### Hydrotesting

Pressure Vessels	Will be Hydrotested to 1.5 Times Maximum Allowable Working Pressure as per ASME Section VIII
Pressure Piping	Will be Hydrotested to 1.5 Times Maximum Allowable Working Pressure as per B31.3

### Radiography

Vessels	RT-1
Piping	100% X-ray

### PWHT

Vessels	Yes
Piping	Yes

### Ultrasonic Testing

None Included

### Hardness Testing

**Brinell hardness testing <200**  
**At least one (1) ASME category A & B**  
**5% of ASME category C & D weld**

## 8.0 PAINT AND COATING SPECIFICATIONS

External Surface Preparation	SSPC-SP#6
External Primer	One (1) Shop Coat of Devoe Fast Dry
Vessel External Finish Paint	One (1) Shop Coat of Devoe Grey Enamel
Skid and Piping External Finish Paint	One (1) Shop Coat of Devoe Grey Enamel
Internal Surface Preparation	None Included
Internal Coating	None Included