

# PROJECT DATA LIST

## INLET SEPARATOR (V-100)

### Design Conditions

1,440 psig maximum allowable working pressure (M.A.W.P.) @ 100°F  
1/8" corrosion allowance  
Service - Sour  
-20°F minimum design metal temperature (M.D.M.T.)

### Size

36" O.D. x 10'-0" Seam / Seam

### Features

- Horizontal three (3) phase style.
- ASME "U" stamp constructed with registration in the Provinces of Alberta, Saskatchewan and British Columbia.
- Inlet diverter & spill over weir.
- Vortex breaker on both liquid outlets.
- 6" thick x 9 lbs./cu.ft. density 316L SST mistex c/w carbon steel grid supports.
- Full support saddles c/w base plate.

### Nozzles

N1	Inlet	1	4"	CL 600 ANSI RFLWN flange
N2	Gas Outlet	1	4"	CL 600 ANSI RFLWN flange
N3	HC Outlet	1	2"	CL 600 ANSI RFWN flange c/w blind
N4	Water Outlet	1	3"	CL 600 ANSI RFLWN flange
N5 A/B	Bridle	2	2"	CL 600 ANSI RFWN flanges
N6 A	Bridle	1	2"	CL 600 ANSI RFWN flange c/w blind
N6 B	Bridle / Drain	1	2"	CL 600 ANSI FWN flange c/w a 1" FNPT hub blind
N7	Pressure Safety Valve	1	2"	CL 600 ANSI RFWN flange
N8	Drain	1	2"	CL 600 ANSI RFWN flange c/w a 1" FNPT hub blind
N9	Pressure Indicator	1	2"	CL 600 ANSI RFWN flange c/w a 1/2" FNPT blind
N10	Temperature Indicator	1	2"	CL 600 ANSI RFWN flange c/w a 3/4" FNPT blind
N11 A/B	Level Switch High	2	2"	CL 600 ANSI RFWN flanges c/w blind
N12 A/B	Inspection	2	3"	CL 600 ANSI RFLWN flanges c/w blind

### **FUEL GAS SCRUBBER (V-110)**

#### Design Conditions

250 psig M.A.W.P. @ 250°F  
1/8" corrosion allowance  
Service - Sour  
-20°F M.D.M.T.

#### Size

8-5/8" O.D. x 2'-6" Seam / Base Plate

#### Features

- Vertical two (2) phase style.
- ASME "UM" stamp constructed with registration in the Provinces of Alberta, Saskatchewan and British Columbia.
- Inlet diverter.

### Nozzles

C1	Inlet	1	1"	CL 6,000 T.O.L.
C2	Gas Outlet	1	2"	CL 3,000 T.O.L.
C3	Drain	1	3/4"	CL 6,000 T.O.L.

### **INSTRUMENTATION**

**BPCV-100**      **1**      **KIMRAY MODEL 3150 FMT PB 600RF 3 IV PISTON BALANCED HIGH PRESSURE MOTOR VALVE**  
3" CL 600 ANSI RF flanged end connections  
Sour service construction  
3" inner valve (equal percentage trim)  
Standard topworks (suitable for sour instrument gas)  
0 to 30 psig supply signal  
Air to open / Fail close

<b>F-110</b>	<b>1</b>	<p><b>CCI MODEL NGS-12 NATURAL GAS SCRUBBER</b>  3/4" FNPT end connection (1/8" FNPT manual drain)  250 psig M.A.W.P. @ 200°F  Maximum flow rate of 25 scfm  Model NGC-12 filter cartridge  <u>Note:</u> It is recommended the filter be changed out every thirty (30) days if both building heaters are under continual use (based on a Cata-Dyne Model WX-24 x 24 infrared heater and 10 ppm H<sub>2</sub>S concentration in the gas supply).</p>
<b>FE-100</b>	<b>1</b>	<p><b>CANALTA SENIOR METER RUN</b>  3" CL 600 ANSI orifice fitting (Sch. XH)  Flanged upstream &amp; downstream  <u>Sour</u> service construction  100% radiography and P.W.H.T.  Built to an AGA 1992 Specification Figure No. 2-7 c/w straightening vanes  One (1) 3/4" and one (1) 1" 3,000# T.O.L.'s downstream of the orifice fitting  One (1) 316 SST orifice plate c/w seal ring  Overall length of 5'-5"</p>
<b>HLSD-110</b>	<b>1</b>	<p><b>GRESCHNER MODEL FGSO2A12F FUEL GAS SHUT-OFF VALVE</b>  2" MNPT x 1" FNPT end connection  Forged steel body  2"φ x 12" long PVC float  250 psig M.A.W.P.</p>
<b>LC-100</b>	<b>1</b>	<p><b>NORRISEAL SERIES 1001A MODEL 2SM60-SR-DF-AB LEVEL CONTROLLER</b>  2" MNPT end connection  <u>Sour</u> service construction (sour process / sour instrument gas)  Right hand mounting  Viton O-ring, 303 SST bearing, Temp. 300°F (max.)  Snap acting control mode - Direct control action  1-7/8"φ x 12" long vertical PVC displacer  Standard level arm length  6 to 30 psig output signal</p>
<b>LCV-100</b>	<b>1</b>	<p><b>KIMRAY MODEL 2200 FMT PO 600RF 1 IV HIGH PRESSURE MOTOR VALVE</b>  2" CL 600 ANSI RF flanged end connections  <u>Sour</u> service construction  1" inner valve (linear trim)  Standard topworks (suitable for sour instrument gas)  0 to 30 psig supply signal  Air to open / Fail close</p>
<b>LG-100</b>	<b>1</b>	<p><b>PENBERTHY REFLEX LEVEL GAUGE</b>  Model 1RM5 gauge glass (2,630 psig @ 100°F)  <u>Sour</u> service construction  7-7/8" visible length  Model 330J-NQ gauge valves (3/4" MNPT end connection)</p>
<b>PC-100</b>	<b>1</b>	<p><b>KIMRAY MODEL 150 PG DA PRESSURE PILOT</b>  Proportional control mode  Non-bleed design  <u>Sour</u> service construction (sour process / sour instrument gas)  Direct control - Throttling action (sensing upstream pressure)  Adjustable pressure range of 125 to 1,500 psig  15 to 30 psig output signal</p>
<b>PI-100</b>	<b>1</b>	<p><b>NUOVA FIMA MODEL MGS18/3A-421 PRESSURE GAUGE</b>  4"φ dial (liquid filled)  Stainless steel case and internals  1/2" MNPT bottom connection  0 to 1,500 psig range (dual scale)</p>

<b>PI-110</b>	<b>1</b>	<b>NUOVA FIMA MODEL MGS18/3A-213 PRESSURE GAUGE</b> 2-1/2"φ dial (liquid filled) Stainless steel case and internals 1/4" MNPT bottom connection 0 <u>to</u> 160 psig range (dual scale)
<b>PRV-110</b>	<b>1</b>	<b>WELLMARK MODEL 2002PR PRESSURE REDUCING REGULATOR</b> 1" FNPT end connections Steel body c/w stainless steel trim & nylon disc 1/8" port diameter 70 <u>to</u> 150 psig spring range Maximum inlet pressure of 2,000 psig
<b>PRV-111</b> <b>PRV-112</b>	<b>2</b>	<b>BELLOFRAM MODEL T50 INSTRUMENT GAS REGULATOR</b> 1/4" FNPT connections <u>Sour</u> service construction 250 psig M.A.W.P. Internal filter 0 <u>to</u> 30 psig spring range
<b>PSV-100</b>	<b>1</b>	<b>CONSOLIDATED MODEL 1912GC-SG10 PRESSURE RELIEF VALVE</b> 1½" CL 600 ANSI RF inlet x 2½" CL 150 ANSI RF outlet <u>Sour</u> service construction 0.503 sq. in. orifice ("G" designation) 1,440 psig set pressure
<b>PSV-110</b>	<b>1</b>	<b>TAYLOR MODEL 8200 PRESSURE RELIEF VALVE</b> 1" MNPT inlet x 1" FNPT outlet <u>Sour</u> service construction 0.212 sq. in. orifice ("E" designation) 150 psig set pressure
<b>TI-100</b>	<b>1</b>	<b>GAUGETECH MODEL GT-312-02 TEMPERATURE INDICATOR</b> 1/2" MNPT back connection 3"φ dial with a 12" long stem -40 <u>to</u> 160°F range (dual scale) 1/2" FNPT x 3/4" MNPT x 12" long, 316 SST thermowell
<b>TI-101</b>	<b>1</b>	<b>GAUGETECH MODEL GT-32-02 TEMPERATURE INDICATOR</b> 1/2" MNPT back connection 3"φ dial with a 2-1/2" long stem -40 <u>to</u> 160°F range (dual scale) 1/2" FNPT x 3/4" MNPT x 2½" long, 316 SST thermowell

**INSTRUMENT BRIDLE**

- 4" Sch. XH Smls. pipe c/w two (2) 2" CL 600 RF vessel connections, one (1) 2" FNPT CL 3000 level controller connection, two (2) 3/4" FNPT CL 3000 level gauge connections, one (1) 1/2" FNPT CL 3000 vent connection and one (1) 1/2" FNPT drain connection.
- LC-100 and LG-100 are to be mounted on the instrument bridle.

## **MANUAL VALVES**

BA-025	1	1/4"	3000#	FNPT F.P. ball valve, Nutron Model T3-F02S30S (Sour)
BA-050	4	1/2"	3000#	FNPT F.P. ball valve, Nutron Model T3-F05S30S (Sour)
BA-075	2	3/4"	3000#	FNPT R.P. ball valve, Nutron Model T3-R07S30S (Sour)
BA-100	4	1"	3000#	FNPT R.P. ball valve, Nutron Model T3-R10S30S (Sour)
BAF-200	3	2"	CL 600	ANSI RF R.P. ball valve, Nutron Model T3-R20R06S (Sour)
BAF-400	1	4"	CL 600	ANSI RF R.P. ball valve, Nutron Model T3-R40R06S (Sour)
CH-100	1	1"	CL 800	FNPT swing check valve, Navco Model CS-R10S08A12 (Sour)
NV-025	3	1/4"	NPT	6,000# MxF needle valve, Century Model CM2-1-M22T-DN-T (Sour)
NV-050	2	1/2"	NPT	6,000# MxF needle valve, Century Model CM2-1-M44T-DN-T (Sour)

## **STRUCTURAL STEEL SKID**

10'-0" wide x 18'-0" long

- W10 x 22# main members.
- W6 x 15# and C6 x 8.2# cross members.
- 3/16" checker plate floor within the building perimeter.
- 12" x 12" sump piped to skid edge and terminated with a thread coupling and plug.
- 2" of Class 1 urethane foam insulation is to be applied to the underside of the checker plate floor.
- Lift points are located at each corner of the skid base.

## **SELF FRAMING METAL BUILDING**

10'-0" wide x 18'-0" long x 8'-6" low eave building with shed style roof

Exterior: 22 gauge galvalume.  
Interior: R12 fiberglass insulation c/w a 4 mil vapor barrier and a 24 gauge fluted aluminum liner.  
Door(s): One (1) 3'-0" x 7'-0" insulated steel door c/w panic hardware, lockset, check chain, threshold and weather-strip.  
Window(s): Two (2) 32" x 36" double glazed horizontal sliding windows c/w screen.  
Ventilation: Two (2) 12" x 12" louvered vents c/w slide closure and screen.  
Other: Flashing is required on all openings.

H-400 Two (2) Catadyne Model WX-24 x 24 flameless infra-red natural gas heaters each  
H-401 complete as follows:

- 12 volt DC starting element.
- Protective grill.
- Vent hood.
- Temperature control valve.
- Safety shut-off valve.
- Pressure reducing regulators.
- 30'-0" long cable leads.
- Conduit hook-up to EPB standards.

**MATERIAL SPECIFICATIONS**

Inlet Separator (V-100)

<u>Item</u>	<u>Material</u>	<u>Schedule / Thickness / Rating</u>
Shell	SA-516 Grd. 70N	1½"
Heads	SA-516 Grd. 70N	2:1 S.E., 1½" nom. (1.438" min.)
Saddle Web Plate	SA-36 / 44W	1/4"
Base Plate	SA-36 / 44W	1/2"
Internals	SA-36 / 44W	3/8"
Forgings	SA-105 N	CL 600 ANSI RFLWN
Flanges	SA-105 N	CL 600 ANSI RF
Nozzle Necks	SA-106 Grd. B Smls.	2" Sch. 160
Weld Fittings	SA-234 WPB	2" Sch. 160

Fuel Gas Scrubber (V-110)

<u>Item</u>	<u>Material</u>	<u>Schedule / Thickness / Rating</u>
Shell	SA-106 Grd. B Smls.	8" Sch. Std.
Heads	SA-234 WPB	8" Sch. Std. Weld Cap
Base Plate	SA-516 Grd. 70	3/4"
Thredolets	SA-105 N	CL 3,000 / CL 6,000

Piping Material

<u>Threaded</u>	<u>Material</u>	<u>CL 150 ANSI</u>	<u>CL 600 ANSI</u>	<u>Vent / Drain Header</u>
Pipe	SA-106 Grd. B Smls.	Sch. 160	Sch. XXH	Sch. 80
Nipples	SA-106 Grd. B Smls.	Sch. 160	Sch. XXH	Sch. 80
Fittings	SA-105	CL 3,000 FS	CL 3,000 FS	CL 3,000 FS
C.A.		1/8"	1/8"	0"

<u>Welded</u>	<u>Material</u>	<u>CL 150 ANSI (PSV Outlet)</u>	<u>CL 600 ANSI</u>
Pipe	SA-106 Grd. B Smls.	2½" & 3" Sch. 40	1½" & 2" Sch. 160, 3" & 4" Sch. 80
Weld Fittings	SA-234 WPB	Same as Pipe	Same as Pipe
Flanges	SA-105 N	RFWN	RFWN
T.O.L.'s	SA-105 N	CL 3,000 FS	CL 3,000 FS
Gaskets	316 SST	1/8" Flexitallic	1/8" Flexitallic
Studs	SA-193 B7M	Various	Various
Nuts	SA-194 2HM	Various	Various
C.A.		1/8"	1/8"

Instrument Tubing

	<u>Process</u>	<u>Instruments</u>	<u>Vents</u>
Size (W.T.)	3/8" (0.035")	3/8" (0.035")	3/8" (0.035")
Fitting Brand Name	Swagelok	Swagelok	Swagelok
Fitting Material	316 SST	316 SST	316 SST
Ferrules Material	SST	SST	SST
Tubing Material		316 SST	
Tubing Clips		Cad. Plated <u>and/or</u> Plastic	

**TESTING - RADIOGRAPHY - P.W.H.T.**

Pressure Testing

Inlet Separator (V-100)	As per ASME Section VIII - Division 1 latest edition, UG-99(b) (i.e. 2,160 psig).
Fuel Gas Scrubber (V-110)	As per ASME Section VIII - Division 1 latest edition, UG-99(b) (i.e. 375 psig).
Welded Pressure Piping	As per ASME B31.3, latest edition, Paragraph 345.4.2(a) (i.e. 375 psig for CL 150 ANSI piping and 2,160 psig for CL 600 ANSI piping).
Threaded Piping	As per ASME B31.3, latest edition, Paragraph 345.4.2(a) (i.e. 375 psig for CL 150 ANSI piping and 2,160 psig for CL 600 ANSI piping). The vent and drain header will be air tested to a pressure of 30 psig.
Instrument Tubing	Will be air / soap tested to normal operating pressure.
Instrument Operational Test	All instruments will be subjected to an operational test to ensure proper functioning.
Charted Hydrotest	Is not included.

Radiography

Inlet Separator (V-100)	As per ASME Section VIII - Division 1, latest edition, UW-11(a) (i.e. 100% (RT-1)).
Fuel Gas Scrubber (V-110)	As per ASME Section VIII - Division 1, latest edition, UW-11(a) (i.e. Full (RT-1)).
Welded Pressure Piping	As per ASME B31.3, latest edition, Paragraph 341.4.1(b)(1) (i.e. 100% - Interpretation to "normal").

Post Weld Heat Treatment

Inlet Separator (V-100)	As per ASME Section VIII - Division 1, latest edition, UCS-56 & UW-40 (i.e. 90 minutes at 1,150°F ± 25°F)
Fuel Gas Scrubber (V-110)	As per ASME Section VIII - Division 1, latest edition, UCS-56 & UW-40 (i.e. 60 minutes at 1,150°F ± 25°F)
Welded Pressure Piping	As per ASME Section VIII - Division 1, latest edition, UCS 56 & UW-40 (i.e. 60 minutes at 1,150°F ± 25°F)

Magnetic Particle Testing

Inlet Separator (V-100)	None
Fuel Gas Scrubber (V-110)	None
Welded Pressure Piping	None

Ultrasonic Testing

Inlet Separator (V-100)	None
Fuel Gas Scrubber (V-110)	None
Welded Pressure Piping	None

Hardness Test

Inlet Separator (V-100)	None
Fuel Gas Scrubber (V-110)	None
Welded Pressure Piping	None

**PAINTING AND SURFACE PREPARATION**

	<u>Structural &amp; Pipe Supports</u>	<u>Piping</u>	<u>Vessels</u>
Surface Preparation	SSPC-SP#6	SSPC-SP#6	SSPC-SP#6
Primer	One (1) Coat Devoe 752 Bar Ox	One (1) Coat Devoe 752 Bar Ox	One (1) Coat Devoe 752 Bar Ox
Finish Paint	One (1) Coat Warm Grey Devoe 751 Bar Ox	One (1) Coat Warm Grey Devoe 751 Bar Ox	One (1) Coat Warm Grey Devoe 751 Bar Ox

Notes

- Surface preparation and painting as listed will be applied to external surfaces of equipment only.
- Underside of structural skids is excluded from this specification.
- Equipment mounted on skids prior to surface preparation and painting will be painted where is (i.e. under vessel base plates, etc. will not be painted.)

**PACKAGING**

Instruments that continually exhaust supply gas will be tied into a common header that is vented to atmosphere outside of the building at eave height. This does not include regulator bonnets or actuator diaphragms.

All welded and threaded piping will be securely supported on structural steel pipe supports. Instrument tubing will be supported along the building wall with clips.

The packaged unit is dismantled only to the extent required for shipping.