

# **PIPING**

**30" QUADRUPLES SEPARATOR PACKAGE  
CORDOVA D-55-A/94-P-10 FACILITY  
PENN WEST EXPLORATION  
P.O. # PEI-A13370663-01  
C/O PIONEER ENGINEERING INC  
CADO PROJECT # 2013-070 UNIT 1 OF 2**

**CADO INDUSTRIES INC.**

**7491 – 110 AVENUE SE CALGARY, AB T2C 3B8 TEL 403-279-6662 FAX 403-279-6687**



the pressure equipment safety authority

# PRESSURE PIPING CONSTRUCTION AND TEST DATA REPORT

In accordance with the provisions of the PESR Section 31(1)

Shop Construction : Field Construction   
 Final Data Report : Partial Data Report  (from one ABSA- authorized Contractor to another ABSA- authorized Contractor).

Complete both sides of this Form

1. Constructed By: Cado Industries Inc. Owner's Job No: 2013-070 Unit 1  
(Name of ABSA authorized primary contractor or subcontractor)  
7491, 110 Avenue S.E. Calgary, Alberta, Canada, T2C 3B8  
(Address)

Certificate of Authorization Permit No. AQP-1426(S) Expiry Date: Feb. 10, 2016

2. Constructed For: Penn West Exploration  
(Name of primary contractor if different from above)  
#200, 207 - 9<sup>th</sup> Avenue S.W. Calgary, Alberta T2P 1K3  
(Address)

Certificate of Authorization Permit No. AQP-N/A Expiry Date: N/A  
(Required when the primary contractor undertakes some/all of the quality functions, e.g., NDE, PWHT, Tie-in, fabrication, hydro test, final assembly etc.)

3. Owner: Penn West Exploration #200, 207 - 9<sup>th</sup> Avenue S.W. Calgary, Alberta T2P 1K3  
(Name and address)  
Cordova d-55-A/94-P-10 Facility  
(Location of installation)

Certificate of Authorization Permit No. AQP- N/A Expiry Date: N/A  
(Required when the owner undertakes some/all of the quality functions, e.g., NDE, PWHT, Tie-in, fabrication, hydro test, final assembly etc.)

4. Piping Design Alberta Registration No.: PP-N/A  
(Required if aggregate piping volume is over 0.5m<sup>3</sup>)

5. Design Responsibility: Owner ; Contractor

6. WP No.: WP-2621.2 ; Company: CADO INDUSTRIES INC Owner's WP No. (If used): WP-N/A  
(Alberta Registration No.)  (Alberta Registration No.)  
 WPS No(s). used: Cado 5, Cado 6 ; Owner's WPS No(s). (If used): N/A

7. Code: ASME B31.1 Non Boiler External Piping ; ASME B31.1 Boiler External Piping ;  
 B31.5 ; B31.9 ; CSA Z662 Steam Pipelines ;  
 ASME B31.3  - Service Category: Normal , D , M , High Pressure ; Severe Cyclic Condition

Drawing No. Rev. No. Line No.	Fluid (Air/Stm. Etc.)	Des. Press. kPa	Des. Temp.°C (Max. & Min.)	Pressure Test kPa	Test Medium	Pipe Mat'l Spec. & Grade	C.A. mm	Pipe NPS & Schedule	Flange Material & Rating	PWHT/ Preheat Temp. °C	NDE
070-01A Rev. 0 Skid Inlet (V-2100)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	4" Sch 80 2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-01B Rev. 0 Skid Inlet (V-2100)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	4" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-02A Rev. 0 Skid Inlet (V-2200)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	4" Sch 80 2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-02B Rev. 0 Skid Inlet (V-2200)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	4" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-03A Rev. 0 Skid Inlet (V-2300)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	4" Sch 80 2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-03B Rev. 0 Skid Inlet (V-2300)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	4" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%

Drawing No. Rev. No. Line No.	Fluid (Air/Stm. Etc.)	Des. Press. kPa	Des. Temp. °C (Max. & Min.)	Pressure Test kPa	Test Medium	Pipe Mat'l Spec. & Grade	C.A. mm	Pipe NPS & Schedule	Flange Material & Rating	PWHT/ Preheat Temp. °C	NDE
070-04A Rev. 0 Skid Inlet (V-2400)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	4" Sch 80 2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-04B Rev. 0 Skid Inlet (V-2400)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	4" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-05A Rev. 0 Process Outlet (V-2100)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	4" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-05B Rev. 0 Process Outlet (V-2100)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	4" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-05C Rev. 0 Process Outlet (V-2100)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-05D Rev. 0 Process Gas Outlet (V-2100)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	4" Sch 80 2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-05E Rev. 0 Process Gas Outlet (V-2100)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	4" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-05F Rev. 0 Process Gas Outlet (V-2100)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	4" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-05G Rev. 0 Process Gas Outlet Header	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	4" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-05H Rev. 0 Process Gas Outlet Header	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	8" Sch 80 4" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-05J Rev. 0 Process Gas Outlet Header	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	8" Sch 80 4" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-05K Rev. 0 Process Gas Outlet Header	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	8" Sch 80 4" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-06A Rev. 0 Process Outlet (V-2200)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	4" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-06B Rev. 0 Process Outlet (V-2200)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	4" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-06C Rev. 0 Process Gas Outlet (V-2200)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-06D Rev. 0 Process Gas Outlet (V-2200)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	4" Sch 80 2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-06E Rev. 0 Process Gas Outlet (V-2200)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	4" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%

Drawing No. Rev. No. Line No.	Fluid (Air/Stm. Etc.)	Des. Press. kPa	Des. Temp. <sup>o</sup> C (Max. & Min.)	Pressure Test kPa	Test Medium	Pipe Mat'l Spec. & Grade	C.A. mm	Pipe NPS & Schedule	Flange Material & Rating	PWHT/ Preheat Temp. <sup>o</sup> C	NDE
070-06F Rev. 0 Process Gas Outlet (V-2200)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	4" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-07A Rev. 0 Process Outlet (V-2300)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	4" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-07B Rev. 0 Process Outlet (V-2300)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	4" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-07C Rev. 0 Process Gas Outlet (V-2300)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-07D Rev. 0 Process Gas Outlet (V-2300)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	4" Sch 80 2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-07E Rev. 0 Process Gas Outlet (V-2300)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	4" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-07F Rev. 0 Process Gas Outlet (V-2300)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	4" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-08A Rev. 0 Process Outlet (V-2400)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	4" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-08B Rev. 0 Process Outlet (V-2400)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	4" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-08C Rev. 0 Process Gas Outlet (V-2400)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-08D Rev. 0 Process Gas Outlet (V-2400)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	4" Sch 80 2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-08E Rev. 0 Process Gas Outlet (V-2400)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	4" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-08F Rev. 0 Process Gas Outlet (V-2400)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	4" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-09A Rev. 0 Fuel Gas Outlet	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-09B Rev. 0 Fuel Gas Outlet	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-09C Rev. 0 Fuel Gas Outlet	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-09D Rev. 0 Fuel Gas Outlet	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%

Drawing No. Rev. No. Line No.	Fluid (Air/Stm. Etc.)	Des. Press. kPa	Des. Temp. °C (Max. & Min.)	Pressure Test kPa	Test Medium	Pipe Mat'l Spec. & Grade	C.A. mm	Pipe NPS & Schedule	Flange Material & Rating	PWHT/ Preheat Temp. °C	NDE
070-09E Rev. 0 Fuel Gas Outlet	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-09F Rev. 0 Fuel Gas Outlet	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-09G Rev. 0 Fuel Gas Outlet	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-09H Rev. 0 Fuel Gas Outlet	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-09J Rev. 0 Fuel Gas Outlet	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-10A Rev. 0 Condensate Outlet (V-2100)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	3" Sch 80 2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-10B Rev. 0 Condensate Outlet (V-2100)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	3" Sch 80 2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-10C Rev. 0 Condensate Outlet (V-2100)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-10D Rev. 0 Condensate Outlet (V-2100)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-10E Rev. 0 Condensate Outlet (V-2100)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-11A Rev. 0 Condensate Outlet (V-2200)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	3" Sch 80 2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-11B Rev. 0 Condensate Outlet (V-2200)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	3" Sch 80 2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-11C Rev. 0 Condensate Outlet (V-2200)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-11D Rev. 0 Condensate Outlet (V-2200)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-11E Rev. 0 Condensate Outlet (V-2200)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-12A Rev. 0 Condensate Outlet (V-2300)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	3" Sch 80 2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%

Drawing No. Rev. No. Line No.	Fluid (Air/Stm. Etc.)	Des. Press. kPa	Des. Temp. °C (Max. & Min.)	Pressure Test kPa	Test Medium	Pipe Mat'l Spec. & Grade	C.A. mm	Pipe NPS & Schedule	Flange Material & Rating	PWHT/ Preheat Temp. °C	NDE
070-12B Rev. 0 Condensate Outlet (V-2300)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	3" Sch 80 2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-12C Rev. 0 Condensate Outlet (V-2300)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-12D Rev. 0 Condensate Outlet (V-2300)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-12E Rev. 0 Condensate Outlet (V-2300)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-13A Rev. 0 Condensate Outlet (V-2400)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	3" Sch 80 2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-13B Rev. 0 Condensate Outlet (V-2400)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	3" Sch 80 2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-13C Rev. 0 Condensate Outlet (V-2400)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-13D Rev. 0 Condensate Outlet (V-2400)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-13E Rev. 0 Condensate Outlet (V-2400)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-14A Rev. 0 Water Outlet (V-2100)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	3" Sch 80 2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-14B Rev. 0 Water Outlet (V-2100)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	3" Sch 80 2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-14C Rev. 0 Water Outlet (V-2100)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-14D Rev. 0 Water Outlet (V-2100)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-14E Rev. 0 Water Outlet (V-2100)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-15A Rev. 0 Water Outlet (V-2200)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	3" Sch 80 2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-15B Rev. 0 Water Outlet (V-2200)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	3" Sch 80 2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-15C Rev. 0 Water Outlet (V-2200)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%

Drawing No. Rev. No. Line No.	Fluid (Air/Stm. Etc.)	Des. Press. kPa	Des. Temp. <sup>°C</sup> (Max. & Min.)	Pressure Test kPa	Test Medium	Pipe Mat'l Spec. & Grade	C.A. mm	Pipe NPS & Schedule	Flange Material & Rating	PWHT/ Preheat Temp. °C	NDE
070-15D Rev. 0 Water Outlet (V-2200)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-15E Rev. 0 Water Outlet (V-2200)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-16A Rev. 0 Water Outlet (V-2300)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	3" Sch 80 2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-16B Rev. 0 Water Outlet (V-2300)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	3" Sch 80 2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-16C Rev. 0 Water Outlet (V-2300)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-16D Rev. 0 Water Outlet (V-2300)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-16E Rev. 0 Water Outlet (V-2300)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-17A Rev. 0 Water Outlet (V-2400)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	3" Sch 80 2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-17B Rev. 0 Water Outlet (V-2400)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	3" Sch 80 2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-17C Rev. 0 Water Outlet (V-2400)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-17D Rev. 0 Water Outlet (V-2400)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-17E Rev. 0 Water Outlet (V-2400)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-18A Rev. 0 Drain (V-2100)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-18B Rev. 0 Drain (V-2100)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-19A Rev. 0 Drain (V-2200)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-19B Rev. 0 Drain (V-2200)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-20A Rev. 0 Drain (V-2300)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-20B Rev. 0 Drain (V-2300)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-21A Rev. 0 Drain (V-2400)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-21B Rev. 0 Drain (V-2400)	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%

Drawing No. Rev. No. Line No.	Fluid (Air/Stm. Etc.)	Des. Press. kPa	Des. Temp. °C (Max. & Min.)	Pressure Test kPa	Test Medium	Pipe Mat'l Spec. & Grade	C.A. mm	Pipe NPS & Schedule	Flange Material & Rating	PWHT/ Preheat Temp. °C	NDE
070-22A Rev. 0 Water Outlet Header	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	4" Sch 80 2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-22B Rev. 0 Water Outlet Header	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	3" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-22C Rev. 0 Water Outlet Header	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	4" Sch 80 2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-22D Rev. 0 Water Outlet Header	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	3" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-22E Rev. 0 Water Outlet Header	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	4" Sch 80 2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-22F Rev. 0 Water Outlet Header	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	4" Sch 80 2" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-22G Rev. 0 Water Outlet Header	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	3" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-22H Rev. 0 Water Outlet Header	W.O.G.	9376	90/-29	14064	Water	N/A	1.6	N/A	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-22J Rev. 0 Water Outlet Header	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	3" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-22K Rev. 0 Water Outlet Header	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	4" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-23C Rev. 0 H.P. Flare Header	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	1" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-23G Rev. 0 H.P. Flare Header	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	1" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-23M Rev. 0 H.P. Flare Header	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	1" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-23R Rev. 0 H.P. Flare Header	W.O.G.	9376	90/-29	14064	Water	SA-106-B	1.6	1" Sch 80	SA-105-N CL 600	None/10°C	RT 100% VT 100%
070-24A Rev. 0 L.P. Flare Header	W.O.G.	1965	90/-29	2162	Air	SA-106-B	1.6	2" Std	SA-105-N CL 150	None/10°C	RT 100% VT 100%
070-24B Rev. 0 L.P. Flare Header	W.O.G.	1965	90/-29	2162	Air	SA-106-B	1.6	2" Std	SA-105-N CL 150	None/10°C	RT 100% VT 100%
070-24C Rev. 0 L.P. Flare Header	W.O.G.	1965	90/-29	2162	Air	SA-106-B	1.6	2" Std	SA-105-N CL 150	None/10°C	RT 100% VT 100%
070-24D Rev. 0 L.P. Flare Header	W.O.G.	1965	90/-29	2162	Air	SA-106-B	1.6	2" Std	SA-105-N CL 150	None/10°C	RT 100% VT 100%
070-24E Rev. 0 L.P. Flare Header	W.O.G.	1965	90/-29	2162	Air	SA-106-B	1.6	2" Std	SA-105-N CL 150	None/10°C	RT 100% VT 100%
070-24F Rev. 0 L.P. Flare Header	W.O.G.	1965	90/-29	2162	Air	SA-106-B	1.6	2" Std	SA-105-N CL 150	None/10°C	RT 100% VT 100%



Partial Data Reports certified by sub-contractors are listed below and attached to this Data Report

No.	Line No.	Spool No.	Dwg. No. (with Rev. No.)	Sub-contractor (Name)	AQP No. (if from Alberta)	Expiry (if from Alberta)

**Remarks:** For partial data report provide information about the code work that was not completed by the subcontractor (e.g., hydrostatic test, PWHT etc.). For final data report provide information about the code work that was not completed by subcontractors and subsequently completed by the primary contractor (e.g., hydrostatic test of entire assembly, PWHT etc.)

Endorse certificate 'A' or 'B'

<p align="center"><b>A. CERTIFICATE OF COMPLIANCE</b></p> <p align="center">Signed by the subcontractor when supplying this certificate as a <b>Partial Data Report</b></p> <p>We certify that the statements in this Data Report are correct and that materials, construction and workmanship of the piping fabrication conform to the registered quality system and the applicable Piping code(s).</p> <p>Date: _____</p> <p align="right">_____ Contractor</p> <p>_____ Print Authorized Representative's Name                      Signature</p> <p><b>This certificate is not valid unless it forms part of a Final Data Report signed by Primary Contractor</b></p>	<p align="center"><b>B. CERTIFICATE OF COMPLIANCE</b></p> <p align="center">Signed by the primary contractor when supplying this certificate as a <b>Final Data Report</b></p> <p>We certify that the statements in this Data Report are correct and that piping job no. <u>2013-070(#1)</u> described in this Data Report was constructed in accordance with the Province of Alberta Safety Codes Act and Regulations, and applicable ASME Piping Code(s).</p> <p>Date: <b>FEB 13 2014</b> <u>CADO INDUSTRIES INC</u></p> <p align="right">_____ Contractor</p> <p><u>Jeremy Koster</u> Print Authorized Representative's Name                      Signature</p>
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### CERTIFICATE OF INSPECTION

I, the undersigned, employed by \_\_\_\_\_ have verified that all required examination and testing has been completed, and inspected the piping described in this construction data report to the extent necessary to be satisfied that it conforms to all applicable examination requirements of the Code and of the engineering design, and state that, to the best of my knowledge and belief, the contractor has constructed this piping in accordance with the Alberta Safety Codes Act and Regulations. By signing this certificate neither the inspector nor his or her employer makes any warranty, expressed or implied, concerning the piping described in this construction data report. Furthermore, neither the inspector nor his or her employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date: \_\_\_\_\_ Date: \_\_\_\_\_

\_\_\_\_\_  
Owner's Inspector Name (please print)                      ABSA Safety Codes Officer (please print)  
(BOILER EXTERNAL PIPING ONLY)

\_\_\_\_\_  
Owner's Inspector Signature:                      ABSA Safety Codes Officer's Signature

Current version of this Form may be obtained from [www.absa.ca](http://www.absa.ca)
















**CADO INDUSTRIES INC**  
**Quality Control Manual**

Revision Number: 3.0

Revision Date: January 19, 2010

Section: 21 Page: 11 of 14

**EXHIBIT 21.2 PRESSURE PIPING EXAMINATION CHECKLIST**

PRESSURE PIPING EXAMINATION CHECKLIST				
				Unit # 1
JOB NUMBER: 2013-070				
NO.	FUNCTION	Q.C. MANUAL REFERENCE	SIGNATURE OR INITIAL AND DATE	
			Q.C. INSPECTOR	OWNER'S INSPECTOR
1	DRAWINGS: ABSA registration over 0.5 Cu. M. Approved by Owner. Approved for Construction (signed & dated).	21.3,21.4		
2	ABSA Safety Codes Officer and Owner's Inspector notified. <i>Gurmat</i>	21.15, 21.21		
3	Registered Welding Procedure Specifications, Q.C. Manual and Forms available at site, Job File started.	21.20		
4	Welders qualified for WPS's and have valid Performance Qualification cards. Welders Log completed. WPS reviewed with Welders.	11.4, 21.18		
5	Material checked against P.O., drawings, and specifications. Identification confirmed. Colour coding applied.	21.12, 21.14		
6	Sample of each Welder's work examined, including root spacing, alignment, cleaning, joint preparation, preheat and electrode control.	11.5, 21.21		
7	Nondestructive Examination completed. Reports and radiographs reviewed, signed by Level II or III, Radiograph I.D. detailed on drawings.	13.3		
8	Visual Examination of all completed welds. Welders I.D. stamped and recorded on drawings.	11.5, 21.21		
9	Heat Treatment verified and recorded on drawings.	14.6		
10	Each system checked against specifications and drawings before test, using Exhibit 21.3 and Exhibit 21.4.	21.21, 21.23		
11	All deficiencies recorded and signed off by Q.C.I. and Owner's Inspector before test.			
12	Pressure Test checked. Gauge calibration verified, gauge #'s recorded.	21.23		
13	System checked after test. Deficiencies recorded and corrected. (Exhibit 21.4)	21.23		
14	Construction data reports (AB-83) prepared and signed by QCI and Owner's Inspector.	21.21(g)		
15	Declaration form (AB-81) submitted to ABSA	21.20(c)		
16	As built drawings accepted by Owner.	21.21(h)		

**CADO INDUSTRIES INC**  
**Quality Control Manual**

Revision Number: 4.0

Revision Date: November 30, 2012

Section: 21 Page: 12 of 14

**EXHIBIT 21.3 PRESSURE PIPING EXAMINATION GUIDE** Unit # 1

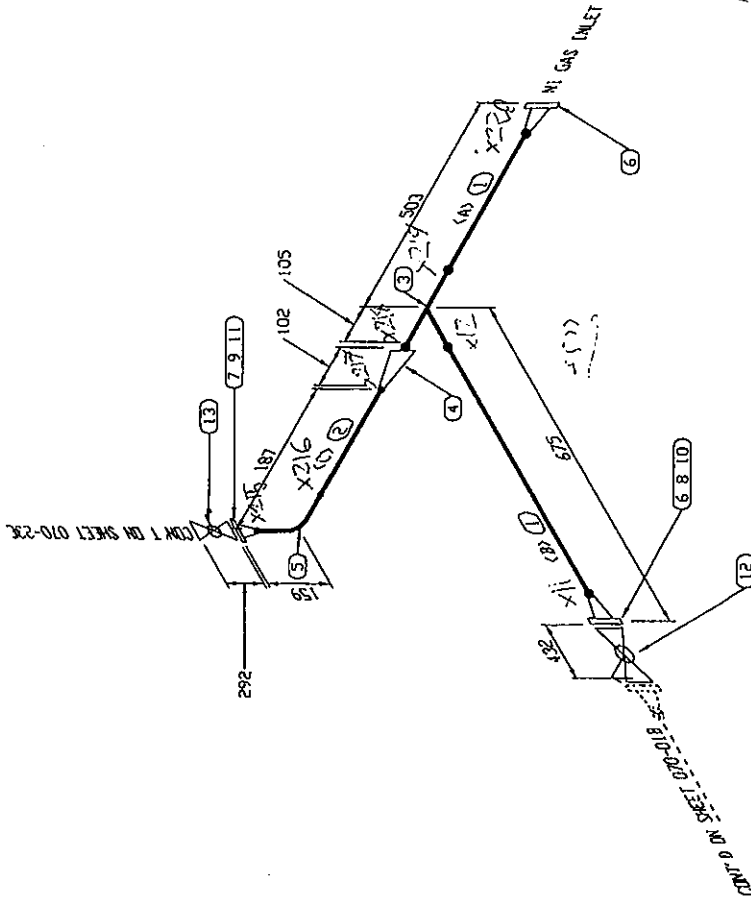
PRESSURE PIPING EXAMINATION GUIDE		2013-070
EXAMINATION PRIOR TO PRESSURE TEST (PUNCHING)	Q.C. INSP.	
1. Pipe Material; schedule and specification correct.	PS	
2. Flanges; ratings, schedule and material specification correct.	PS	
3. Fittings; tees, return bends, reducers, couplings and weld-o-lets etc. Correct schedule and material specification.	PS	
4. Valves; identification – Manufacturer's name tag, etc., correct.	PS	
5. Valves; installed correctly, flow direction, accesses, rising stems free from obstructions, clearance for removal adequate.	PS	
6. Lubrication fittings, drains, etc., installed as required.	PS	
7. Bolts, Studs, Nuts; length and material correct. Studs at least flush with heads (max. Thread exposure beyond nut should be about 2 threads)	PS	
8. Gaskets are correct type, material, size, etc.	PS	
9. All welding satisfactory and traceable to Welder's symbol.	PS	
10. Seal welding complete - all threads covered.	N/A	
11. All attachment welds satisfactory.	PS	
12. All N.D.E., heat treatment complete, records filed.	PS	
13. Guide anchors and shoes required installed correctly. (High temp. lines)	PS	
14. Line supports adequate – supports to be checked against drawings.	PS	
15. Spring hangers - correct type, correct installation.	N/A	
16. Lines have adequate allowance for expansion.	PS	
17. Bellows type expansion joints - correct type, pressure rating and correct installation.	N/A	
18. Required cold spring applied.	N/A	
19. Orifice runs have specified straight length of pipe - located correctly etc.	PS	
20. All deficiencies recorded on Punch List.	PS	
Quality Control Inspector Signature:		Date:

BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	4	PIPE, SHLS, BV, SCH. 80, A106 GR B	740 MM	16.5
2	2	PIPE, SHLS, BV, SCH. 80, A106 GR B	108 MM	0.9
3	4X4	TEE, STR, BV, SCH. 80, A234 GR VPB	1	5.6
4	4X2	REDUCER, CDNC, BV, SCH. 80, A234 GR VPB	1	1.5
5	2	ELBOV, 90 DEG, LR, BV, SCH. 80, A234 GR VPB	1	0.9
6	4	FLANGE, RFVN, CL600, SCH. 80 BORE, A105N	2	38.1
7	2	FLANGE, RFVN, CL600, SCH. 80 BORE, A105N	1	3.5
8	4	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	1	1.0
9	2	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	1	1.0
10	7/8X145	(B) STUD BOLTS W/ NUTS, A193 GR B7M / A194 GR 2HM	1	1.0
11	5/8X108	(B) STUD BOLTS W/ NUTS, A193 GR B7M / A194 GR 2HM	1	1.0
12	4	VALVE, BALL, RP, RF, NACE, CLASS 600 ASME, A105N	1	74.9
13	2	VALVE, BALL, RP, RF, NACE, CLASS 600 ASME, A105N	1	20.0

TOTAL FABRICATION WEIGHT 167.9

PIECE NUM	LENGTH (MM)	SIZE (INCH)
(A)	284	4
(B)	456	4
(C)	108	2



**CADO INDUSTRIES INC.**

7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8  
 TEL: (403) 279-6662; FAX: (403) 279-6687

PIPE SPEC:	CS	WELD PROC:	C400-5
DESIGN PRESS:	9376 KPAC	RADIOGRAPHY:	100%
DESIGN TEMP:	90 DEG. C	PAINT:	N/A
MONIT:	-29 DEG. C	PICKLE & OIL:	N/A
CA:	1.6 mm	SANDBLAST:	SP-6
TEST PRESS:	14084 KPAC	PAINT:	WARMA GREY
TEST MEDIA:	WCG	INSULATION:	N/A

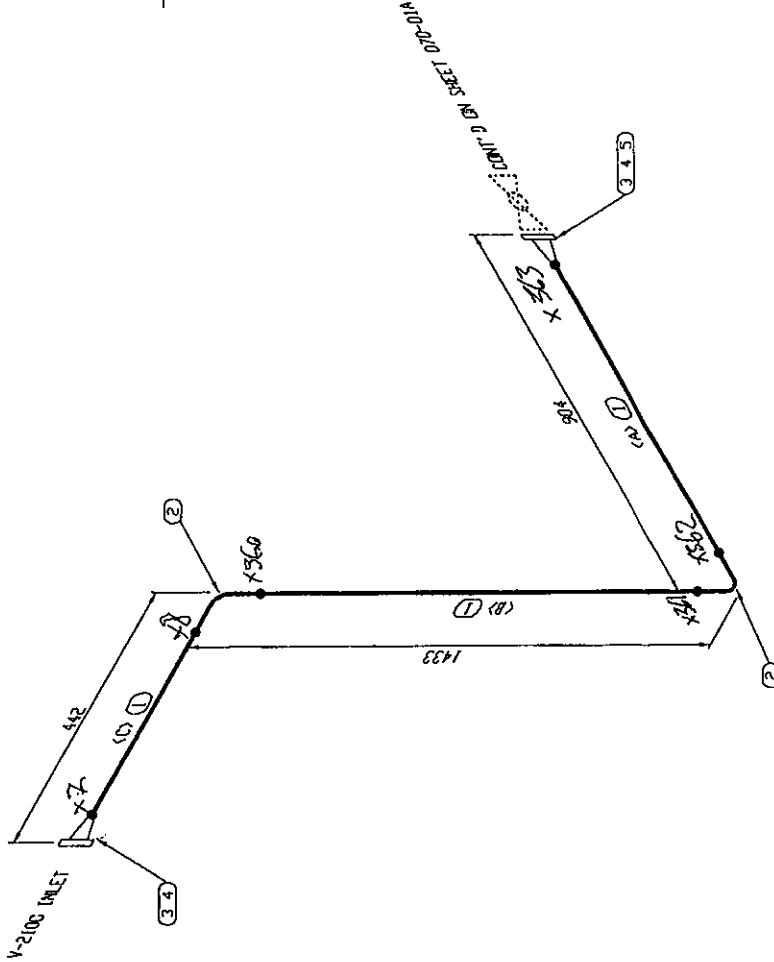
CUSTOMER:	PENNWEST EXPLORATION
UNIT NO.:	2013-070-601
MOBEL:	4-WELL SEPARATOR SKID (BU-2000)
LOCATION:	
LINE TAG:	SKID INLET (Y-2100)
DRAWING NO.:	070-01A

Unit # 1

BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	4	PIPE, SMLS, BW, SCH. 80, A106 GR B	1932 MM	43.7
2	4	ELBOW, 90 DEG, LR, BW, SCH. 80, A234 GR	2	10.7
3	4	FLANGE, RFWN, CL600, SCH. 80 BORE, A105N	2	38.1
4	4	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	2	2.0
5	7/8X146	(B) STUD BOLTS W/ NUTS, A193 GR B7M / A194 GR 2HM	1	1.0
TOTAL FABRICATION WEIGHT				95.4

CUT PIPE LENGTH		SIZE
PIECE NUM	LENGTH (MM)	(INCH)
(A)	636	4
(B)	1121	4
(C)	175	4



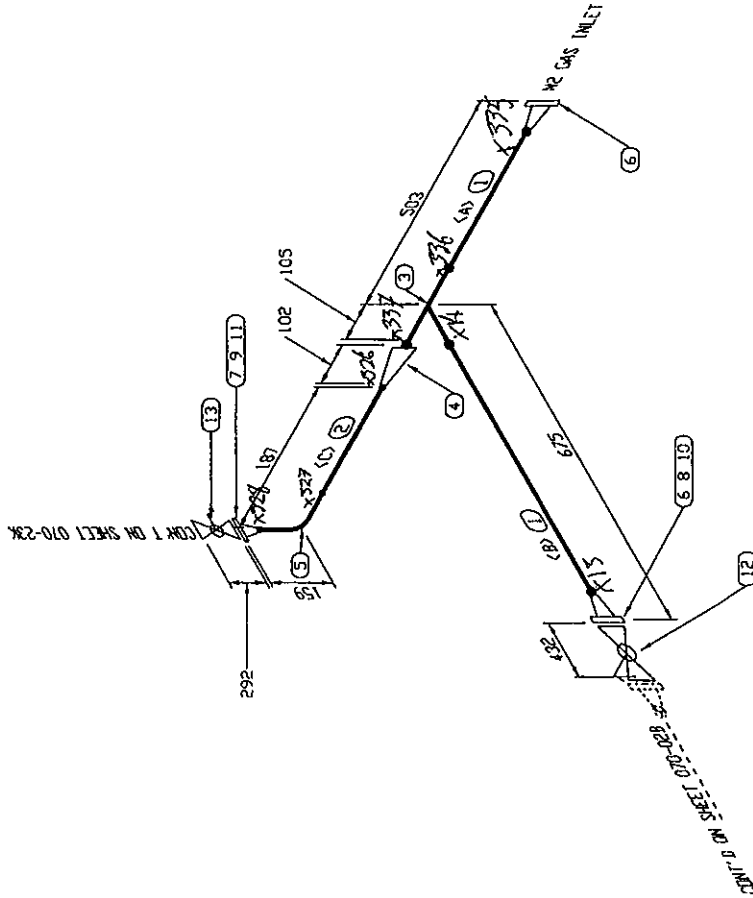
PIPEING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION		CADO INDUSTRIES INC.		CUSTOMER: PENNWEST EXPLORATION			
PIPE SPEC.: CS	WELD PROC.: CADO-5	7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8		UNIT NO.:	2013-070-601		
DESIGN PRESS.: 9376 KPAC	RADIOGRAPHY: 100%	TEL: (403) 279-6662; FAX: (403) 279-6687		MODEL:	4-WELL SEPARATOR SKID (BU-2000)		
DESIGN TEMP.: 90 DEG. C	PMWT: N/A			LOCATION:			
WDMT: -29 DEG. C	PICKLE & OIL: N/A			LINE TAG:	SKID INLET (V-2100)		
C.A.: 1.6 mm	SANDBLAST: SP-5			DRAWING NO.:	070-01B		
TEST PRESS.: 14064 KPAC	PAINT: WARM GREY			REV.:	0		
TEST MEDIA: WCC	INSULATION: N/A						
		NO.	REVISION	DATE	BY	CHK	APR
			ISSUED FOR CONSTRUCTION	11/10/2013	AP	WC	WC

**BILL OF MATERIAL**

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	4	PIPE, SMLS, BW, SCH 80, A106 GR B	740 MM	16.5
2	2	PIPE, SMLS, BW, SCH 80, A106 GR B	108 MM	0.9
3	4X4	TEE, STR, BW, SCH 80, A234 GR WPB	1	5.6
4	4X2	REDUCER, CONC, BW, SCH 80, A234 GR WPB	1	1.5
5	2	ELBOW, 90 DEG, LR, BW, SCH 80, A234 GR WPB	1	0.9
6	4	FLANGE, RFYN, CL600, SCH 80 BORE, A105N	2	38.1
7	2	FLANGE, RFYN, CL600, SCH 80 BORE, A105N	1	5.5
8	4	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	1	1.0
9	2	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	1	1.0
10	7/8X146	<8> STUD BOLTS W/ NUTS, A193 GR B7M / A194 GR 2HH	1	1.0
11	5/8X108	<8> STUD BOLTS W/ NUTS, A193 GR B7M / A194 GR 2HH	1	1.0
12	4	VALVE, BALL, RP, RF, NACE, CLASS 600 ASME, A105N	1	74.9
13	2	VALVE, BALL, RP, RF, NACE, CLASS 600 ASME, A105N	1	20.0

TOTAL FABRICATION WEIGHT 167.9

PIECE NUM	CUT PIPE LENGTH (MM)	SIZE (INCH)
<A>	284	4
<B>	456	4
<C>	108	2



**CADO INDUSTRIES INC.**

7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8  
 TEL: (403) 279-6662; FAX: (403) 279-6687

PIPING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION,

PIPE SPEC:	CS	WELD PROC:	CADO-5
DESIGN PRESS:	9376 KPAC	RADIOGRAPHY:	100%
DESIGN TEMP:	90 DEG. C	PMWT:	N/A
MDMT:	-29 DEG. C	PICKLE & OIL:	N/A
C.A.:	1.6 mm	SANDBLAST:	SP-6
TEST PRESS:	14034 KPAC	PAINT:	WARM GREY
TEST MEDIA:	WOG	INSULATION:	N/A

CUSTOMER: PENNWEST EXPLORATION

UNIT NO.: 2013-070-601

MODEL: 4-WELL SEPARATOR SKID (BU-2000)

LOCATION:

LINE TAG: SKID INLET (V-2200)

DRAWING NO.: 070-02A

REV. 0

DATE	BY	CHK	APR
11/03/2013	AP	WC	WC

ISSUED FOR CONSTRUCTION

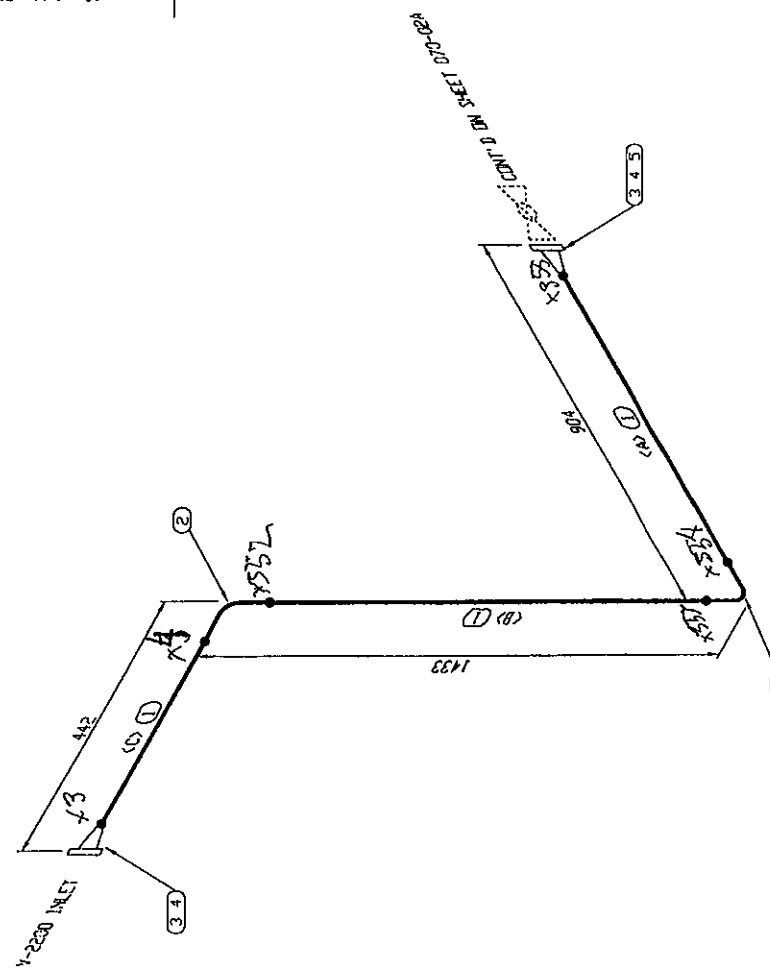
REASON

NO

BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	4	PIPE, SMLS, BW, SCH. 80, A106 GR B	1932 MM	43.7
2	4	ELBOW, 90 DEG, LR, BW, SCH. 80, A234 GR WPB	2	10.7
3	4	FLANGE, RFMN, CL600, SCH. 80 BDRE, A105N	2	38.1
4	4	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	2	2.0
5	7/8X146	(8) STUD BOLTS W/ NUTS, A193 GR B7M / A194 GR 2HM	1	1.0
TOTAL FABRICATION WEIGHT				95.4

CUT PIPE LENGTH	PIECE NUM	LENGTH (MM)	SIZE (INCH)
(A)	636	4	4
(B)	1121	4	4
(C)	175	4	4



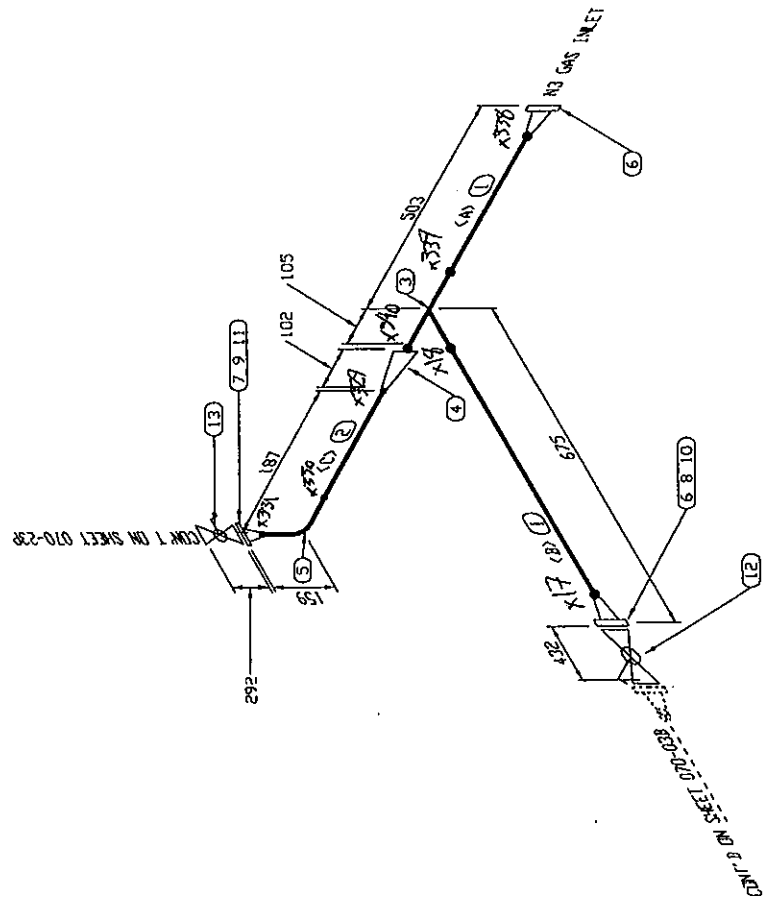
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NO.	DATE	BY	REV	NO.	DATE	BY	REV
C	11/03/2013	AP	MC	0			
ISSUED FOR CONSTRUCTION				REV. 0			

BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	4	PIPE, SMLS, BV, SCH. 80, A106 GR B	740 MM	15.5
2	2	PIPE, SMLS, BV, SCH. 80, A106 GR B	108 MM	0.9
3	4X4	TEE, STD, BV, SCH. 80, A234 GR WPB	1	5.6
4	4X2	REDUCER, CONIC, BV, SCH. 80, A234 GR WPB	1	1.5
5	2	ELBOW, 90 DEG, LR, BV, SCH. 80, A234 GR WPB	1	0.9
6	4	FLANGE, RFVN, CL600, SCH. 80 BORE, A105N	2	38.1
7	2	FLANGE, RFVN, CL600, SCH. 80 BORE, A105N	1	5.5
8	4	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	1	1.0
9	2	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	1	1.0
10	7/8X146	(B) STUD BOLTS V/ NUTS, A193 GR B7M / A194 GR 2HM	1	1.0
11	5/8X108	(B) STUD BOLTS V/ NUTS, A193 GR B7M / A194 GR 2HM	1	1.0
12	4	VALVE, BALL, RP, RF, NACE, CLASS 600	1	74.9
13	2	VALVE, BALL, RP, RF, NACE, CLASS 600 ASME, A105N	1	20.0

TOTAL FABRICATION WEIGHT  
167.9

CUT PIPE LENGTH	
PIECE NUM	LENGTH (INCH)
(A)	284
(B)	456
(C)	108



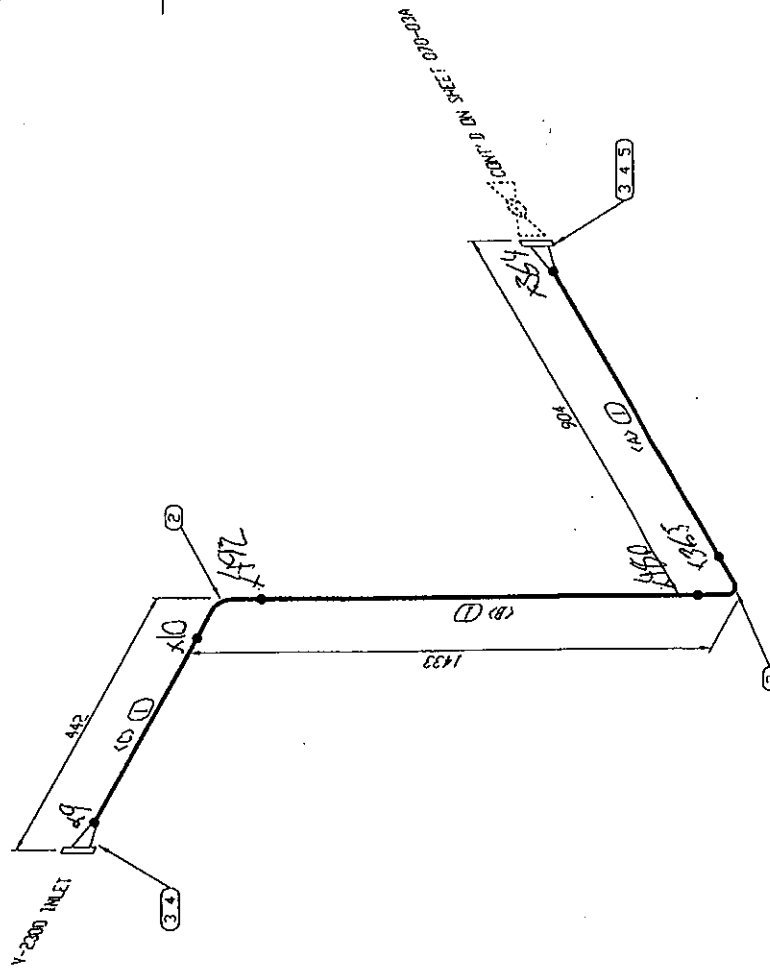
PIPING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION. PIPE SPEC.: CS WELD PROC.: CADO-5 DESIGN PRESS.: 9376 KPAQ RADIOGRAPHY: 100% DESIGN TEMP.: 90 DEG. C PWHT: N/A WDMT: -29 DEG. C PICKLE & OIL: N/A C.A.: 1.5 mm SANDBLAST: SP-6 TEST PRESS.: 14064 KPAQ PAINT: WARM GREY TEST MEDIA: H2O INSULATION: N/A		CAD INDUSTRIES INC. 7491 - 110 AVE SE, CALGARY, ALBERTA T2C 8B8 TEL: (403) 279-6662; FAX: (403) 279-6687	
CUSTOMER: PENNWEST EXPLORATION UNIT NO.: 2013-070-601 MODEL: 4-WELL SEPARATOR SKID (BU-2000) LOCATION: LINE TAG: SKID INLET (V-2300) DRAWING NO.: 070-03A		NO.	REASON
DATE	BY	CHK	APP
11/11/2013	AP	MC	MC



BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	4	PIPE, SHLS, BW, SCH. 80, A106 GR. B	1932 MM	43.7
2	4	ELBOW, 90 DEG, LR, BW, SCH. 80, A234 GR	2	10.7
3	4	FLANGE, REVN, CL600, SCH. 80 BORE, A105N	2	38.1
4	4	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	2	2.0
5	7/8X146	(8) STUD BOLTS W/ NUTS, A193 GR B7M / A194 GR 2MM	1	1.0
TOTAL FABRICATION WEIGHT				95.4

CUT PIPE LENGTH		SIZE
PIECE NUM	LENGTH (MM)	(INCH)
(A)	636	4
(B)	1121	4
(C)	175	4



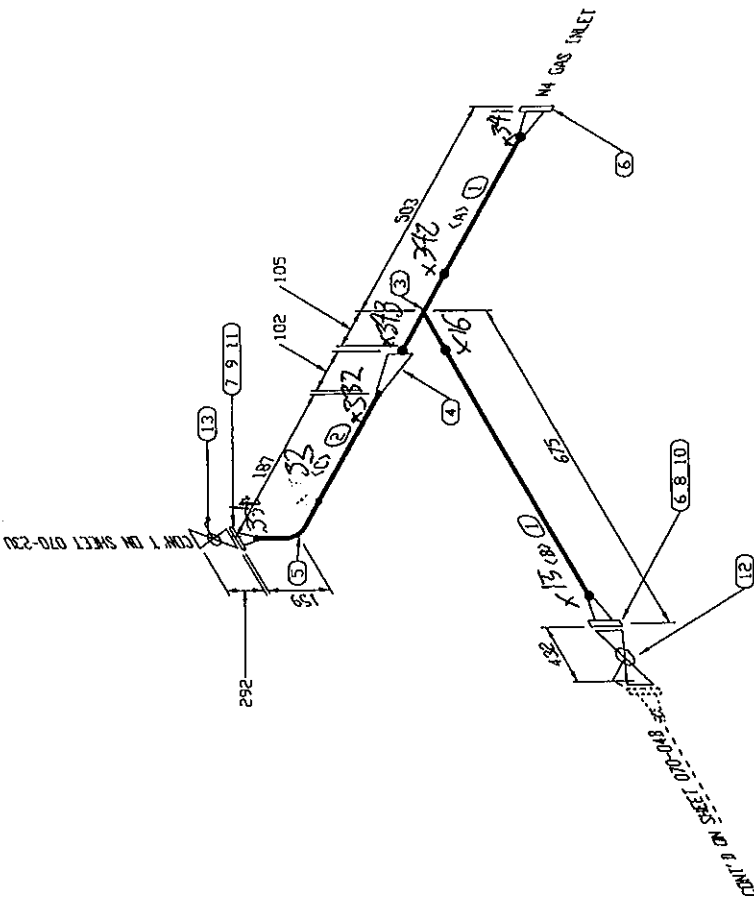
PIPING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION. PIPE SPEC.: CS WELD PROC.: CADO-5 DESIGN PRESS.: 9376 KPA G RAOGROGRAPHY: 100% DESIGN TEMP.: 90 DEG. C PHMT: N/A MDMT: -29 DEG. C PICKLE & OIL: N/A C.A.: 1.6 mm SANDBLAST: SP-6 TEST PRESS.: 14064 KPA G PAINT: WARM GREY TEST MEDIA: W99 INSULATION: N/A		CADO INDUSTRIES INC. 7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8 TEL: (403) 279-6662; FAX: (403) 279-6687		CUSTOMER: PENNWEST EXPLORATION UNIT NO.: 2013-070-601 MODEL: 4-WELL SEPARATOR SKID (9U-2000) LOCATION: LINE TAG: SKID INLET (V-2300) DRAWING NO.: 970-03B REV: 0	
ISSUED FOR CONSTRUCTION	DATE: 11/29/2011	AP: WC	WC	CHK: WC	APP: WC
NO. 0	REVISION	BY	CHK	APP	

**BILL OF MATERIAL**

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	4	PIPE, SMLS, BV, SCH 80, A106 GR B	740 MM	16.5
2	2	PIPE, SMLS, BV, SCH 80, A106 GR B	108 MM	0.9
3	4X4	TEE, STR, BV, SCH 80, A234 GR WPB	1	5.6
4	4X2	REDUCER, CONG, BV, SCH 80, A234 GR WPB	1	1.5
5	2	ELBOW, 90 DEG, LR, BV, SCH 80, A234 GR WPB	1	0.9
6	4	FLANGE, RFWN, CL600, SCH 80 BORE, A105N	2	38.1
7	2	FLANGE, RFWN, CL600, SCH 80 BORE, A105N	1	5.5
8	4	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	1	1.0
9	2	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	1	1.0
10	7/8X146	(B) STUD BOLTS V/ NUTS, A193 GR B7M / A194 GR 2HM	1	1.0
11	5/8X108	(B) STUD BOLTS V/ NUTS, A193 GR B7M / A194 GR 2HM	1	1.0
12	4	VALVE, BALL, RP, RF, NACE, CLASS 600 ASME, A105N	1	74.9
13	2	VALVE, BALL, RP, RF, NACE, CLASS 600 ASME, A105N	1	20.0

TOTAL FABRICATION WEIGHT 167.9

CUT PIPE LENGTH		
PIECE NUM	LENGTH (MM)	SIZE (INCH)
(A)	284	4
(B)	456	4
(C)	108	2



**CADO INDUSTRIES INC.**

7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8  
 TEL: (403) 279-6662; FAX: (403) 279-6687

PIPING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION, 2011 AD.	WELD PROC: CADO-5
PIPE SPEC.: CS	RADIOGRAPHY: 100%
DESIGN PRESS.: 9376 KPA	PAINT: N/A
DESIGN TEMP.: 38 DEG. C	PICKLE & OIL: N/A
DMNT: -29 DEG. C	SANDBLAST: SP-6
C.A.: 3.2mm	PAINT: WARM GREY
TEST PRESS.: 14084 KPA	INSULATION: N/A
TEST MEDIA: WATER	

CUSTOMER: PENNWEST EXPLORATION
UNIT NO.: 2013-070-601
MODEL: 4-WELL SEPARATOR SKID (BU-2000)
LOCATION:
LINE TAG: SKID INLET (V-2400)
DRAWING NO.: 070-04A
REV: 0

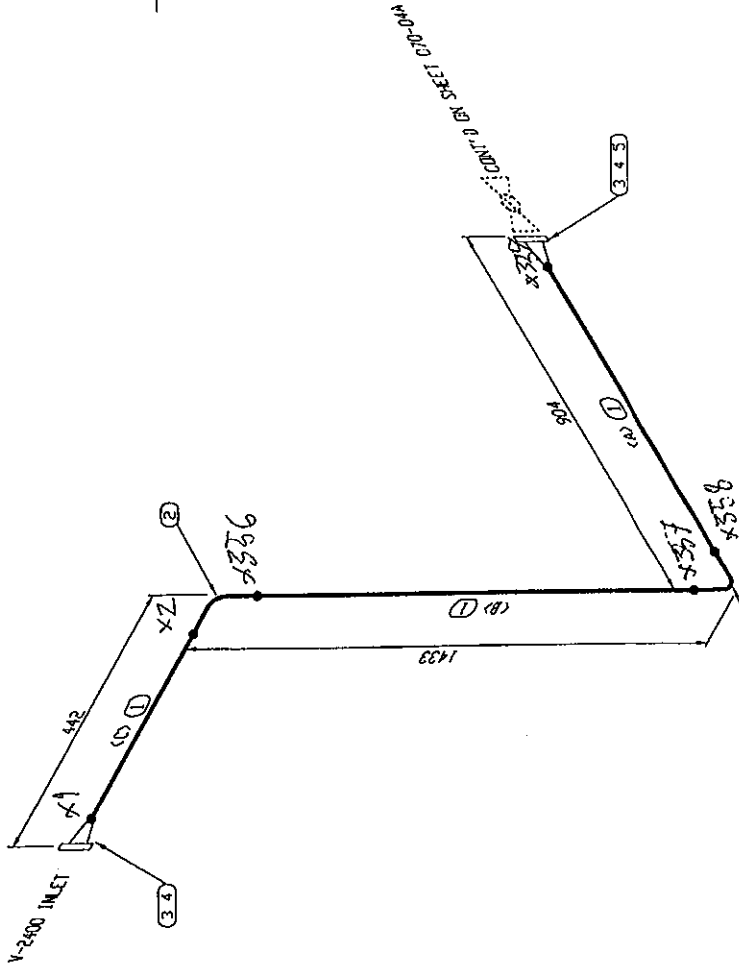
DATE	BY	CHK	APR
11/10/2013	AP	WC	WC
ISSUED FOR CONSTRUCTION			
NO.			

BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	4	PIPE, SMLS, B4, SCH. 80, A106 GR B	1932 MM	43.7
2	4	ELBOW, 90 DEG, LR, B4, SCH. 80, A234 GR B	2	10.7
3	4	FLANGE, RFUN, CL600, SCH. 80 BORE, A105N	2	38.1
4	4	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	2	2.0
5	7/8x145	(B) STUD BOLTS 1/2 NUTS, A193 GR B7M / A194 GR 2HM	1	1.0
TOTAL FABRICATION WEIGHT				95.4

CUT PIPE LENGTH

PIECE NUM	LENGTH (MM)	SIZE (INCH)
(A)	526	4
(B)	115	4
(C)	175	4



PIPE SPEC:	CS	WELD PROC:	CA00-5
DESIGN PRESS:	9376 KPAC	RADIOGRAPHY:	100%
DESIGN TEMP:	90 DEG. C	PWHT:	N/A
MDMT:	-29 DEG. C	PICKLE & OIL:	N/A
C.A.:	1.5 mm	SANDBLAST:	SP-6
TEST PRESS:	14064 KPAC	PAINT:	WARM GREY
TEST MEDIA:	H2O	INSULATION:	N/A

PIPING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION.  
**CADO INDUSTRIES INC.**  
 7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8  
 TEL: (403) 279-6682; FAX: (403) 279-6687

CUSTOMER:	PENNWEST EXPLORATION
UNIT NO.:	2013-070-601
MODEL:	4-WELL SEPARATOR SKID (BU-2000)
LOCATION:	
LINE TAG:	SKID INLET (V-2400)
DRAWING NO.:	070-048

DATE	BY	CHK	APR
11/23/21	AP	WC	WC

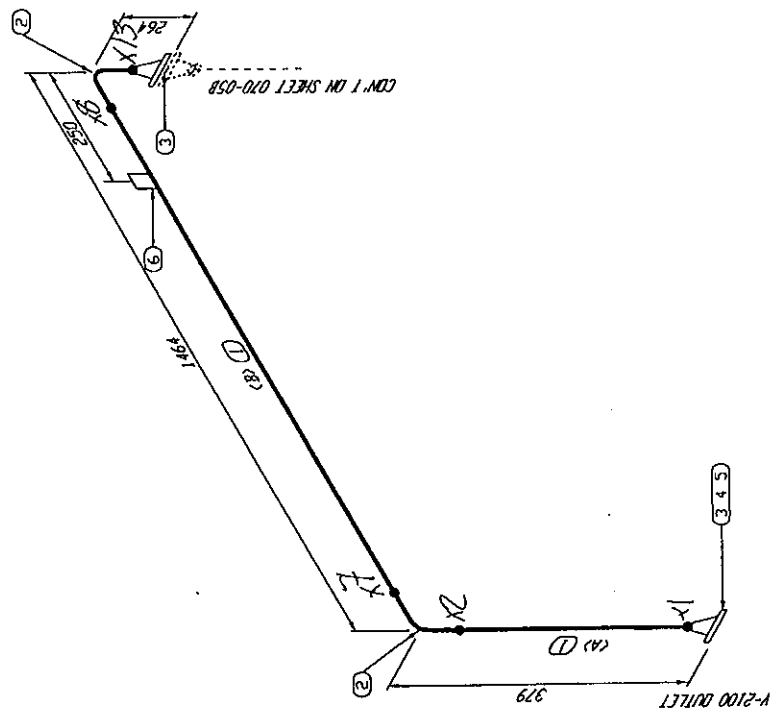
REV.	0
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BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	4	PIPE, SWLS, BV, SCH 80, A106 GR B	1265 MM	28.3
2	4	ELBOW, 90 DEG, LR, BW, SCH 80, A234 GR	2	10.7
3	4	WPS	2	38.1
4	4	FLANGE, RFWN, CL600, SCH 80 BORE, A105N	1	1.0
5	7/8X1/4	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	1	1.0
6	3/4	<A> STUD BOLTS W/ NUTS, A193 GR B7H / A194 GR 2HH	1	
		<B> CPLG 3000# NPT A105N	1	

TOTAL FABRICATION WEIGHT 79.0

CUT PIPE LENGTH	PIECE LENGTH	SIZE
NUM	(MM)	(INCH)
<A>	112	4
<B>	1153	4



CADO INDUSTRIES INC.		PENINWEST EXPLORATION	
7491 - 110 AVE SE, CALGARY, ALBERTA T2C 8B8		UNIT NO.: 2013-070-601	
TEL: (403) 279-6662; FAX: (403) 279-6667		MODEL: 4-WELL SEPARATOR SKID (BU-2000)	
ISSUED FOR CONSTRUCTION		LOCATION:	
DATE: 11/01/2013	BY: AP	LINE TAG: V-2100 PROCESS OUTLET	
NO. 0	REVISION	DRAWING NO.: 070-05A	
NO. 0	REV. 0		

PIPE SPEC.	WELD PROC.	WELD PROC.	WELD PROC.
CS	CADO-5	CADO-5	CADO-5
DESIGN PRESS.: 9376 KPA	RADIOGRAPHY: 100%	RADIOGRAPHY: 100%	RADIOGRAPHY: 100%
DESIGN TEMP.: 90 DEG. C	PWHT: N/A	PWHT: N/A	PWHT: N/A
ADM: -29 DEG. C	PICKLE & OIL: N/A	PICKLE & OIL: N/A	PICKLE & OIL: N/A
C.A.: 1.6 mm	SANDBLAST: SP-6	SANDBLAST: SP-6	SANDBLAST: SP-6
TEST PRESS.: 14664 KPA	PAINT: WARM GREY	PAINT: WARM GREY	PAINT: WARM GREY
TEST MEDIA: WOC	INSULATION: N/A	INSULATION: N/A	INSULATION: N/A

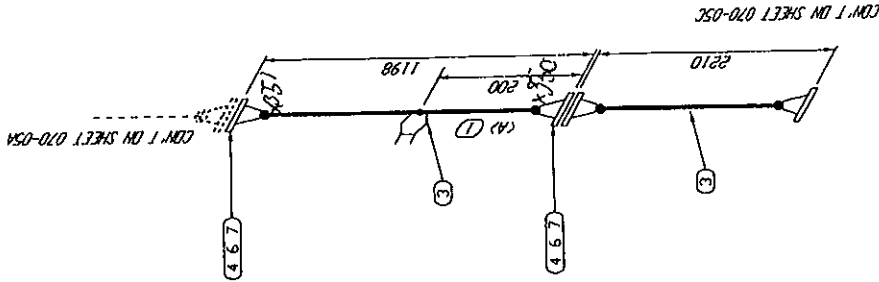
BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	4	PIPE, SMLS, B1, SCH 80, A106 GR B	976 MM	26.9
2	4	METER RUN		44.4
3	4X1/2	THREDDLET, CL3000, A105N	1	0.2
4	4	FLANGE, RFWN, CL600, SCH 80 BORE, A105N	2	38.1
5	4	METER RUN	2	38.1
6	4	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	2	2.0
7	7/8X146	(8) STUD BOLTS V/ NUTS, A193 GR B7M / A194 GR 2HM	2	2.0

TOTAL FABRICATION WEIGHT  
151.5

CUT PIPE LENGTH

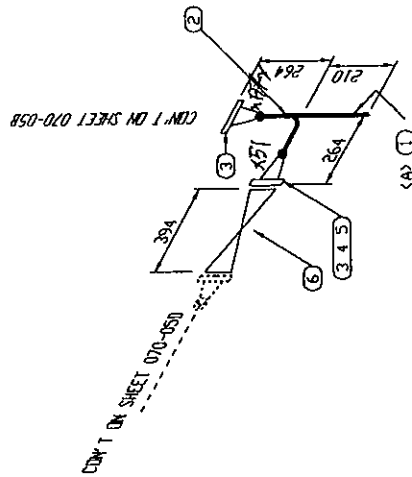
PIECE NUM	LENGTH (MM)	SIZE (INCH)
(A)	976	4



PIPING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION. WELD PROC.: CAJO-5 RADIOGRAPHY: 100% PICKLE & OIL: N/A PWHT: N/A DESIGN TEMP.: 90 DEG. C -29 DEG. C 1.6 mm SANDBLAST: SP-6 PAINT: WARM GREY INSULATION: N/A		CADO INDUSTRIES INC. 7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8 TEL: (403) 279-8662; FAX: (403) 279-8687		CUSTOMER: PENNWEST EXPLORATION UNIT NO.: 2013-070-601 MODEL: 4-WELL SEPARATOR SKID (BU-2000) LOCATION: LINE TAG: V-2100 PROCESS OUTLET DRAWING NO.: 370-05B REV: 0	
TEST PRESS.: 14064 KPAG TEST MEDIA: WOG	ISSUED FOR CONSTRUCTION 11/10/2013 DATE 11/10/2013 DATE	AP WC WC WC	SY CHK APR	NO.	NO.

BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	2	PIPE, SMLS., BV, SCH. 80, A106 GR B (STUP-L-1)	253 MM	1.9
2	4	ELBOW, 90 DEG, LR, BV, SCH. 80, A234 GR WPB	1	5.4
3	4	FLANGE, RFVN, CL600, SCH. 80 BORE, A105N	2	38.1
4	4	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	1	1.0
5	7/8X1.46	(B) STUD BOLTS W/ NUTS, A193 GR B7M / A194 GR 2HM	1	1.0
6	4	CONTROL VALVE, FISHER ET. 600LB FLG, RF	1	L.D.
TOTAL FABRICATION WEIGHT				48.3



CUT PIPE LENGTH

PIECE LENGTH SIZE  
NUM (MM) (INCH)

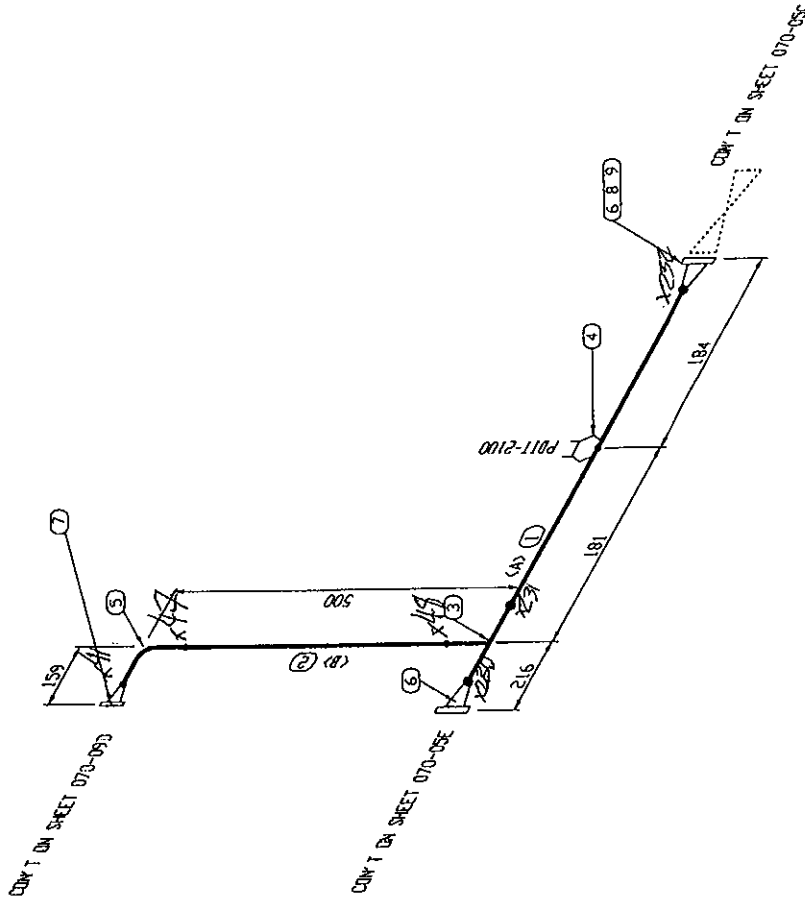
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PIPING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION.		CADO INDUSTRIES INC.		CUSTOMER: PENNWEST EXPLORATION	
PIPE SPEC.: CS	WELD PROC.: CADO-5	7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8		UNIT NO.: 2013-070-601	
DESIGN PRESS.: 9376 KPAG	RADIOGRAPHY: 100%	TEL: (403) 279-6682; FAX: (403) 279-6687		MODE: 4-WELL SEPARATOR SKID (BU-2000)	
DESIGN TEMP.: -29 DEG. C	PAINT: N/A			LOCATION:	
WDMT: 1.6 mm	PICKLE & OIL: N/A			LINE TAG: V-2100 PROCESS GAS OUTLET	
TEST PRESS.: 14064 KPAG	SANDBLAST: SP-5			DRAWING NO.: 070-05C	REV. 0
TEST MEDIA: WOG	PAINT: WARM GREY				
	INSULATION: N/A				
		DATE: 11/20/2013	BY: WC	CHK: WC	APR
		ISSUED FOR CONSTRUCTION	NO. 0	REVISION	

BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	4	PIPE, SWLS, BV, SCH. 80, A105 GR B	147 MM	3.3
2	4X2	PIPE, SWLS, BV, SCH. 80, A105 GR B	328 MM	2.5
3	4X2	TEE, RED, BV, SCH. 80, A234 GR VPB	1	4.9
4	4X1/2	THREDLET, CL3000, A105N	1	C.2
5	2	ELBOW, 90 DEG, LR, BV, SCH. 80, A234 GR VPB	1	C.9
6	4	FLANGE, RFWN, CL600, SCH. 80 BDRE, A105N	2	28.1
7	2	FLANGE, RFWN, CL600, SCH. 80 BDRE, A105N	1	5.5
8	4	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	1	1.0
9	7/8X146	(8) STUD BOLTS V/ NUTS, A193 GR B7M / A194 GR 2HM	1	1.0
TOTAL FABRICATION WEIGHT				57.1

CUT PIPE LENGTH		SIZE
PIECE NUM	LENGTH (MM)	(INCH)
<A>	147	4
<B>	328	2

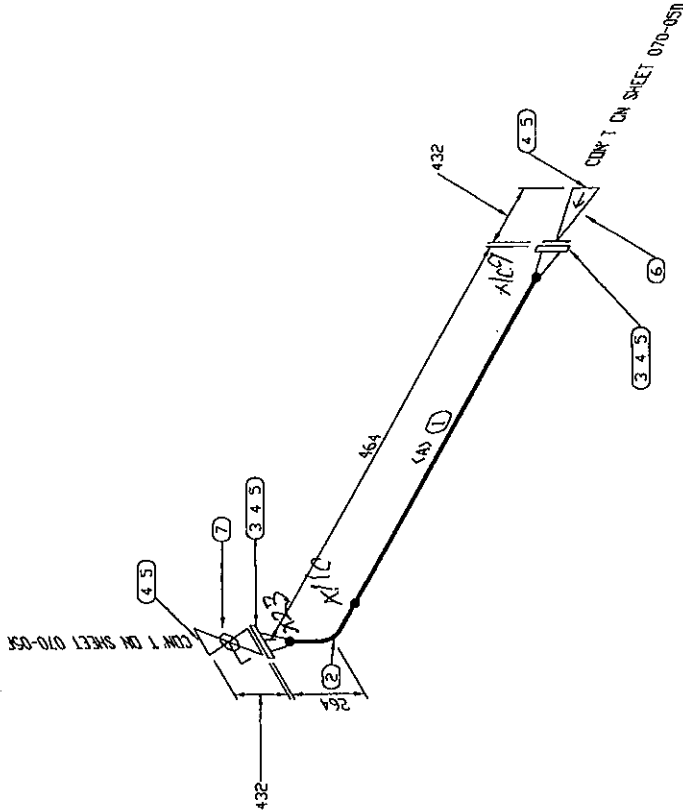


PIPING DESIGNED IN ACCORDANCE WITH: ASME B31.3 2010 EDITION. WELD PROC.: CADO-5 RADIOGRAPHY: 100% PWHT: N/A PICKLE & OIL: N/A SANDBLAST: SP-6 PAINT: WARM GREY INSULATION: N/A		CADO INDUSTRIES INC. 7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8 TEL: (403) 279-6662; FAX: (403) 279-6667		CUSTOMER: PENNWEST EXPLORATION UNIT NO.: 2013-070-601 MODEL: 4-WELL SEPARATOR SKID (BU-2000) LOCATION: LINE TAG: V-2100 PROCESS GAS OUTLET DRAWING NO.: 070-050	
DESIGN TEMP.: 90 DEG. C MONI.: -29 DEG. C C.A.: 1.6 mm TEST PRESS.: 14064 KPAC TEST MEDIA: #00	DATE: 11/01/2013 BY: WC CHK: WC APR: WC	ISSUED FOR CONSTRUCTION NO. 0 REMISON	DATE: 11/01/2013 BY: WC CHK: WC APR: WC	REV: 0	

BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	4	PIPE, SMLS, BW, SCH. 80, A106 GR. B	198 MM	4.5
2	4	ELBOW, 90 DEG, LR, BW, SCH. 80, A234 GR. B	1	5.4
3	4	FLANGE, RFWN, CL600, SCH. 80 BORE, A105N	2	38.1
4	4	GASKET, CL600, SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	4	4.0
5	7/8X1/46	(8) STUD BOLTS V/ NUTS, A193 GR. B7M / A194 GR. 2HM	4	4.0
6	4	VALVE, SWING CHECK, RF, NACE, CLASS 600 ASME, A105N	1	115.7
7	4	VALVE, BALL, RF, NACE, CLASS 600 ASME, A105N	1	74.9
TOTAL FABRICATION WEIGHT				246.4

CUT PIPE LENGTH	PIECE LENGTH	SIZE
NUM	(MM)	(INCH)
(A)	198	4



CADO INDUSTRIES INC.		CUSTOMER: PENNWEST EXPLORATION	
7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8		UNIT NO.: 2013-070-801	
TEL: (403) 279-8662; FAX: (403) 279-8667		MODEL: 4-WELL SEPARATOR SKID (BU-2000)	
PIPING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION.		LOCATION:	
PIPE SPEC: CS	WELD PROC: CADO-5	LINE TAG: V-2100 PROCESS GAS OUTLET	
DESIGN PRESS: 9376 KPAC	RADIOGRAPHY: 100%	DRAWING NO.: 070-05E	
DESIGN TEMP: 90 DEG. C	PHRT: N/A	REV: 0	
MDMT: -29 DEG. C	PICKLE & OIL: N/A		
C.A.: 1.6 mm	SANDBLAST: SP-6		
TEST PRESS: 14084 KPAC	PAINT: MARV GREY		
TEST MEDIA: WOG	INSULATION: N/A		
NO.	DATE	BY	CHK
0	11/10/2013	AP	WC
		WC	WC
		CHK	APR
		REV	0



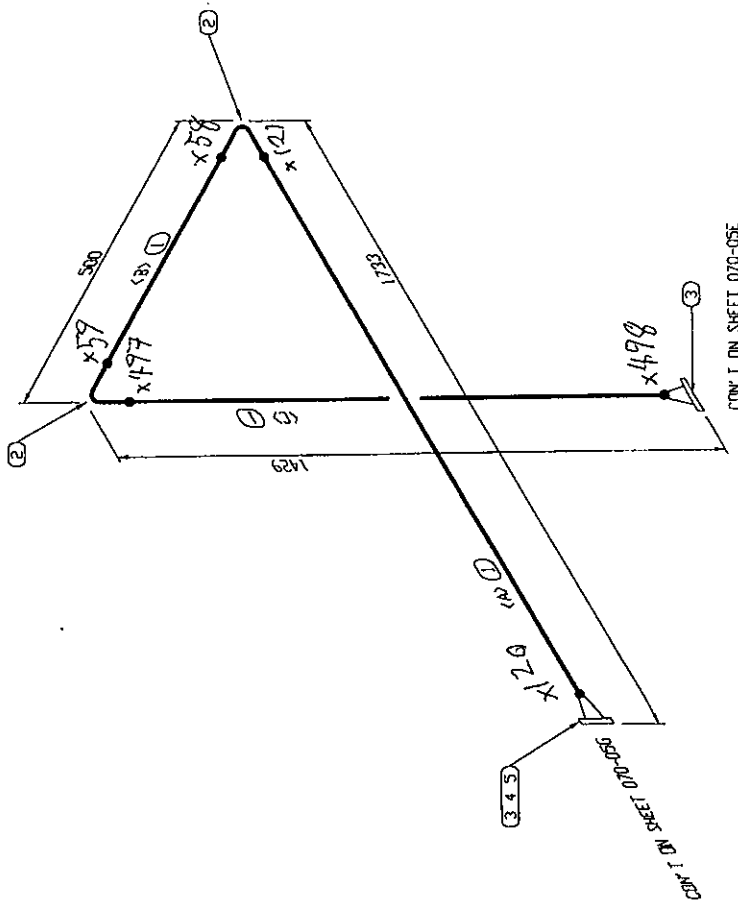
BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	4	PIPE, SMLS, 90, SCH 80, A106 GR B	2816 MM	62.8
2	4	ELBOW, 90 DEG, LR, BW, SCH 80, A234 GR	2	10.7
3	4	FLANGE, CL600, SCH 80 BORE, A105N	2	38.1
4	4	GASKET, CL600, SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	1	1.0
5	7/8x146	(B) STUD BOLTS W/ NUTS, A193 GR B7M / A194 GR 2HM	1	1.0

TOTAL FABRICATION WEIGHT 113.6

CUT PIPE LENGTH

PIECE NUM	LENGTH (MM)	SIZE (INCH)
(A)	1467	4
(B)	188	4
(C)	1161	4



PIPE SPEC:		WELD PROC:		DESIGN PRESS:		DESIGN TEMP:		WDMT:		C.A.:		TEST PRESS:		TEST MEDIA:	
CS	CAD0-5			9376 MPAG	100%	90 DEC. C	-29 DEC. C	1.6 mm	14084 MPAG	WARM GREY					
RADIOGRAPHY:		PWHT:		PICKLE & OIL:		SANDBLAST:		PAINT:		INSULATION:		NO.		REVISION	
100%		N/A		N/A		SP-6		WARM GREY		N/A		0		ISSUED FOR CONSTRUCTION	
DATE		BY		CHK		APR		DATE		BY		CHK		APR	
11/10/2013		AP		WC		WC		11/10/2013		AP		WC		WC	

**CADO INDUSTRIES INC.**

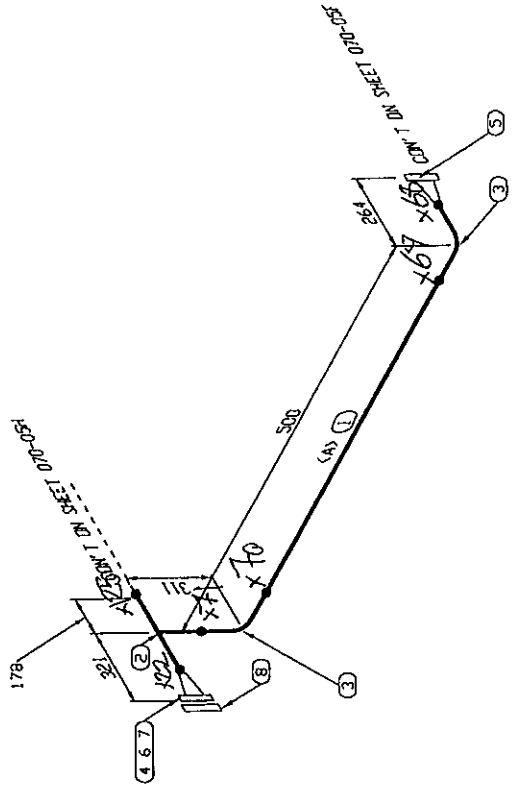
7491 - 110 AVE SE, CALGARY, ALBERTA, T2C 3B8  
 TEL: (403) 278-6666; FAX: (403) 279-6687

CUSTOMER:	PENNWEST EXPLORATION
UNIT NO.:	2013-070-601
MODEL:	4-WELL SEPARATOR SKID (BU-2000)
LOCATION:	
LINE TAG:	V-2100 PROCESS GAS OUTLET
DRAWING NO.:	070-05E
REV.:	0

BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	4	PIPE, SWLS, 3/4", SCH 80, A106 GR B	188	4.2
2	8x4	TEE, RED, 3/4", SCH 80, A234 GR WPB	1	23.4
3	4	ELBOW, 90 DEG, LR, 3/4", SCH 80, A234 GR WPB	2	10.7
4	8	FLANGE, RFVN, CL600, SCH 80 BORE, A105N	1	53.1
5	4	FLANGE, RFVN, CL600, SCH 80 BORE, A105N	1	19.1
6	8	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	1	1.0
7	1	1/8x197 (12) STUD BOLTS W/ NUTS, A193 GR 37H / A194 GR 2HH	1	1.0
8	8	FLANGE, RF, BLIND, CL600, A105N WITH 1/2" NPT HIGH POINT VENT OFF CENTER 3 7/16"	1	63.1
TOTAL FABRICATION WEIGHT				175.4

CUT PIPE LENGTH	SIZE
PIECE LENGTH (MM)	( INCH )
<A> 188	4



**CADO INDUSTRIES INC.**

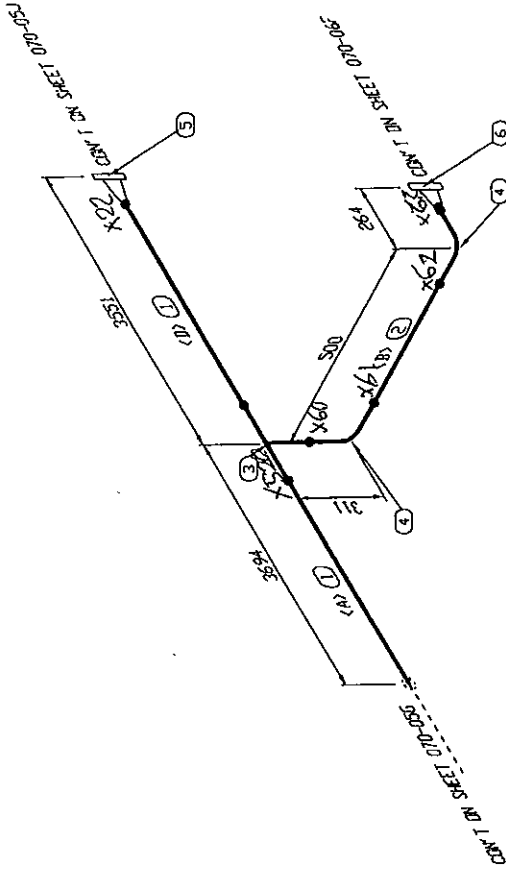
7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8  
 TEL: (403) 279-6682; FAX: (403) 279-6687

PIPING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION.		CUSTOMER: PENNVEST EXPLORATION	
PIPE SPEC.: CS	WELD PROC.: CADO-5	UNIT NO.: 2013-070-601	
DESIGN PRESS.: 9376 KPAG	RADIOGRAPHY: 100%	MODEL: 4-WELL SEPARATOR SKID (BU-2000)	
DESIGN TEMP.: 90 DEG. C	PNHT: N/A	LOCATION:	
WDMT: -29 DEG. C	PICKLE & OIL: N/A	LINE TAG: PROCESS GAS OUTLET HEADER	
C.A.: 1.6 mm	SANDBLAST: SP-6	DRAWING NO.: 070-05G	REV: 0
TEST PRESS.: 14084 KPAG	PAINT: WARM GREY		
TEST MEDIA: WCC	INSULATION: N/A		
	NO. 0	DATE: 11/09/2013	BY: AP
		CHK: WC	APR
		REVISON: REYSON	

**BILL OF MATERIAL**

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	8	PIPE, SMLS, BV, SCH. 80, A106 GR B	6740 MM	435.8
2	4	PIPE, SMLS, BV, SCH. 80, A106 GR B	188 MM	4.4
3	8X4	TEE, RED, BV, SCH. 80, A234 GR WPB	1	23.4
4	4	ELBOW, 90 DEG, LR, BV, SCH. 80, A234 GR WPB	2	10.7
5	8	FLANGE, RFWN, CL600, SCH. 80 BORE, A105N	1	53.1
6	4	FLANGE, RFWN, CL600, SCH. 80 BORE, A105N	1	19.1
TOTAL FABRICATION WEIGHT				546.3

CUT PIPE LENGTH		
PIECE NUM	LENGTH (MM)	SIZE (INCH)
(A)	3513	8
(B)	188	4
(D)	3227	8



**CADO INDUSTRIES INC.**

7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8  
 TEL: (403) 279-6682; FAX: (403) 279-6687

CUSTOMER: PENNWIEST EXPLORATION

UNIT NO.: 2013-070-601

MODEL: 4-WELL SEPARATOR SKID (BU-2000)

LOCATION:

LINE TAG: PROCESS GAS OUTLET HEADER

DRAWING NO.: 079-05H

REV: 0

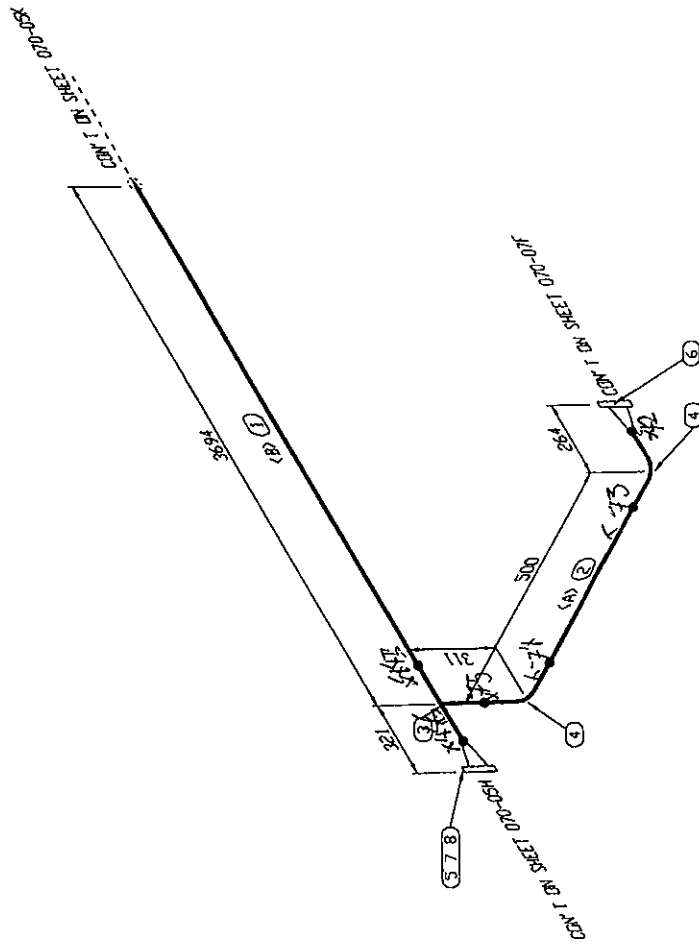
PIPE SPEC:	CS	WELD PROC:	CADO-5
DESIGN PRESS:	9376 KPAC	RADIOGRAPHY:	100%
DESIGN TEMP:	90 DEG. C	PMNT:	N/A
WDMT:	-29 DEG. C	PICKLE & OIL:	N/A
C.A.:	1.6 mm	SANDBLAST:	SP-6
TEST PRESS:	14064 KPAC	PAINT:	WARM GREY
TEST MEDIA:	WCG	INSULATION:	N/A
		ISSUED FOR CONSTRUCTION	
		DATE	BY
		CHK	APR
		REVISION	
		NO.	

BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	8	PIPE, SMLS, BV, SCH 80, A106 GR B	3513 MM	226.5
2	4	PIPE, SMLS, BV, SCH 80, A106 GR B	188 MM	4.2
3	8X4	TEE, RED, BV, SCH 80, A234 GR WPB	1	23.4
4	4	ELBOW, 90 DEG, LR, BV, SCH 80, A234 GR WPB	2	10.7
5	8	FLANGE, RFWN, CL600, SCH 80 BDR, A105N	1	53.1
6	4	FLANGE, RFWN, CL600, SCH 80 BDR, A105N	1	19.1
7	8	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	1	1.0
8	1 1/8X197	< 12> STUD BOLTS W/ NUTS, A193 GR 87H / A194 GR 2HM	1	1.0

TOTAL FABRICATION WEIGHT 338.9

CUT PIPE LENGTH	
PIECE NUM	SIZE < INCH >
(A)	188
(B)	3513
	4
	8



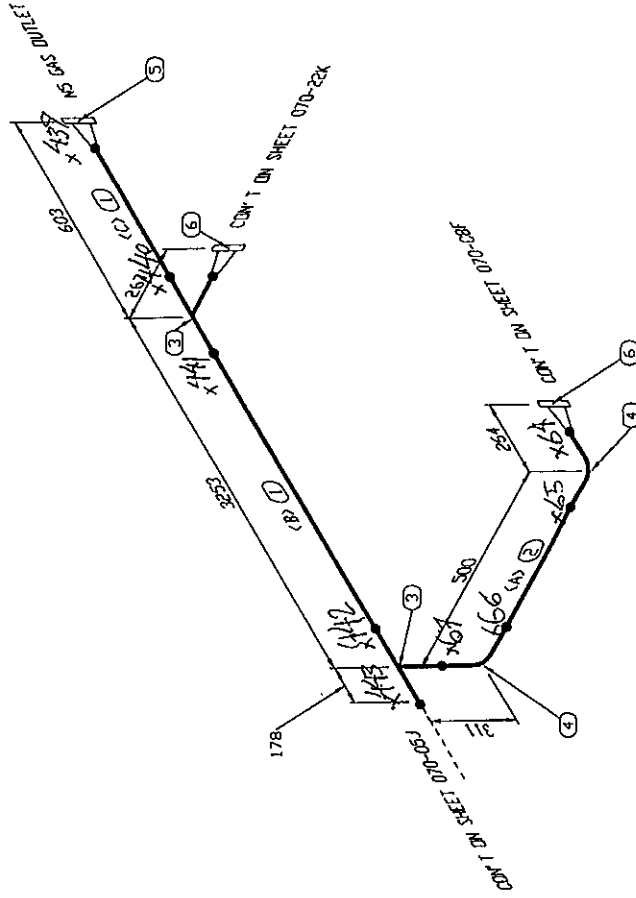
**CADO INDUSTRIES INC.**  
 7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8  
 TEL: (403) 279-8862; FAX: (403) 279-8887

PIPING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION.		CUSTOMER: PENNWEST EXPLORATION	
PIPE SPEC.: CS	WELD PROC.: CADO-S	UNIT NO.: 2013-070-601	
DESIGN PRESS.: 9376 KPA G	RADIOGRAPHY: 100%	MODEL: 4-WELL SEPARATOR SKID (BU-2000)	
DESIGN TEMP.: 90 DEG. C	PHWT: N/A	LOCATION:	
NDMT: -29 DEG. C	PICKLE & OIL: N/A	JUNE TAG: PROCESS GAS OUTLET HEADER	
C.A.: 1.6 mm	SANDBLAST: SP-6	DRAWING NO.: 070-05J	REV. 0
TEST PRESS.: 14064 KPA G	PAINT: WARM GREY		
TEST MEDIA: AOC	INSULATION: N/A		
		DATE: 11/12/2013	BY: AP
		CHK: WC	APR
		REV: 0	

BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	8	PIPE, SMLS, BW, SCH 80, A106 GR B	3170 MM	205.0
2	4	PIPE, SMLS, BW, SCH 80, A106 GR B	198 MM	4.2
3	8X4	TEE, RED, BW, SCH 80, A234 GR WPB	2	46.8
4	4	ELBOW, 90 DEG, LR, BW, SCH 80, A234 GR WPB	2	10.7
5	8	FLANGE, RFWN, CL600, SCH 80 BURE, A105N	1	52.1
6	4	FLANGE, RFWN, CL600, SCH 80 BURE, A105N	2	38.1
TOTAL FABRICATION WEIGHT				357.7

PIECE NUM	CUT PIPE LENGTH (MM)	SIZE (INCH)
(A)	188	4
(B)	2890	8
(C)	280	8



**CADO INDUSTRIES INC.**

7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8  
 TEL: (403) 279-6662; FAX: (403) 279-6687

CUSTOMER: PENNWEST EXPLORATION

UNIT NO.: 2013-070-601

MODEL: 4-WELL SEPARATOR SKID (BU-2000)

LOCATION:

LINE TAG: PROCESS GAS OUTLET HEADER

DRAWING NO.: 079-05K

REV: 0

PIPE SPEC:	CS	WELD PROC:	CADO-5
DESIGN PRESS:	9376 KPAG	RADIOGRAPHY:	100%
DESIGN TEMP:	-29 DEG. C	PAINT:	N/A
DMT:	-29 DEG. C	PICKLE & OIL:	N/A
C.A.:	1.6 mm	SANDBLAST:	SP-6
TEST PRESS:	14064 KPAG	PAINT:	WARM GREY
TEST MEDIA:	#00	INSULATION:	N/A

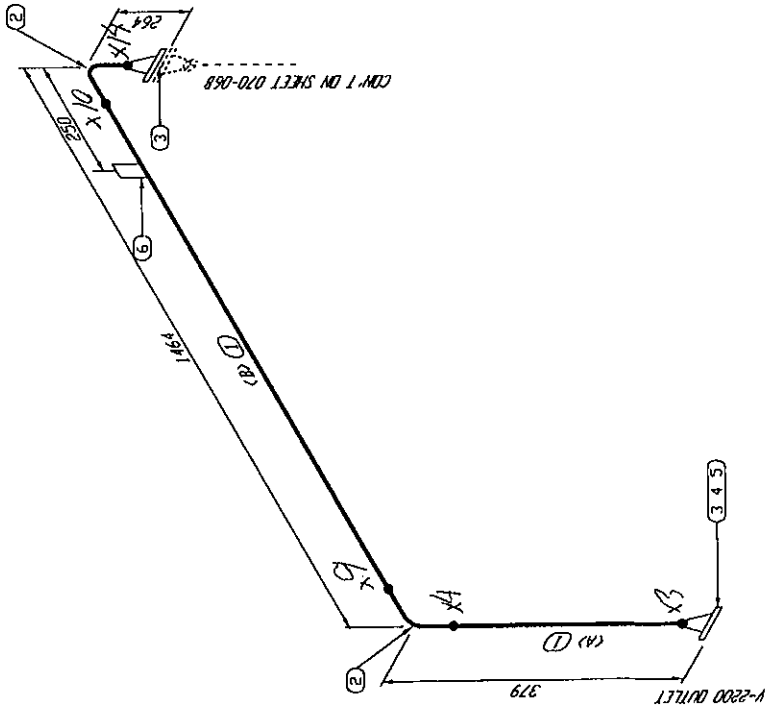
DATE	11/10/2013	BY	AP
CHK	WC	APR	WC

ISSUED FOR CONSTRUCTION

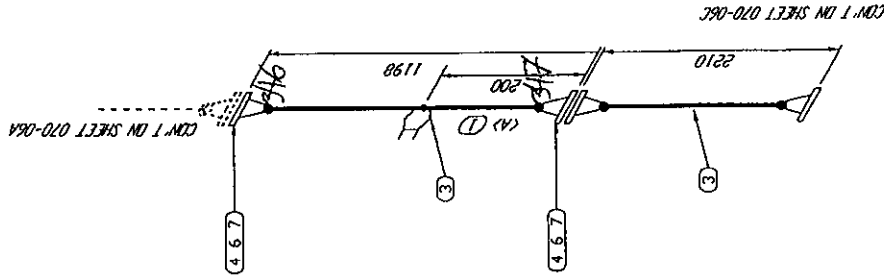
BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	4	PIPE, SMLS, BW, SCH 80, A106 GR B	1265 MM	28.3
2	4	ELBOW, 90 DEG, LR, BW, SCH 80, A234 GR	2	10.7
3	4	FLANGE, RFVN, CL600, SCH 80 BORE, A105N	2	38.1
4	4	GASKET, CL600, SPIRAL WOUND, 316 SS /	1	1.0
5	7/8X146	(8) STUD BOLTS 1/2 NUTS, A193 GR B7M /	1	1.0
6	1/2	CPLG 3000R NPT A105N	1	79.0
TOTAL FABRICATION WEIGHT				79.0

PIECE NUM	LENGTH (MM)	SIZE (INCH)
(A)	112	4
(B)	1153	4



PIPING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION. WELD PROC.: CADO-5 RADIOGRAPHY: 100% PWHT: N/A PICKLE & OIL: N/A SANDBLAST: SP-6 PAINT: WARM GREY INSULATION: N/A		CAD INDUSTRIES INC. 7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8 TEL: (403) 279-6662; FAX: (403) 279-6887		CUSTOMER: PENNWEST EXPLORATION UNIT NO.: 2013-070-601 MODEL: 4-WELL SEPARATOR SKID (BU-2000) LOCATION:			
DESIGN SPEC.: CS DESIGN PRESS.: 8376 KPAC DESIGN TEMP.: 90 DEG. C MDMT: -29 DEG. C C.A.: 1.6 mm TEST PRESS.: 14064 KPAC TEST MEDIA: WOC	ISSUED FOR CONSTRUCTION 0 11/19/2013 AP DATE:	NO.	REVISION	DRAWING NO.: C70-06A REV. 0	BY:	CHK:	APR:



CON'T IN SHEET 070-06A

CON'T IN SHEET 070-06C

BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	4	PIPE, SMLS., BV, SCH. 80, A106 GR B	976 MM	26.9
2	4	METER RUN	1	44.4
3	4X1/2	THREDDLET, CL3000, A105N	1	0.2
4	4	FLANGE, RFWN, CL600, SCH. 80 BORE, A105N	2	38.1
5	4	METER RUN	2	38.1
6	4	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	2	2.0
7	7/8X146	(8) STUD BOLTS V/ NUTS, A193 GR B7N / A194 GR 2HM	2	2.0
TOTAL FABRICATION WEIGHT				151.5

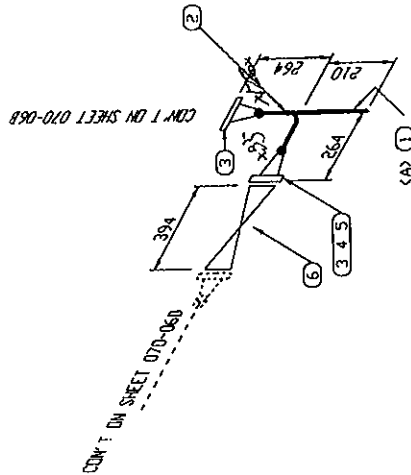
CUT PIPE LENGTH

PIECE NUM	LENGTH (MM)	SIZE (INCH)
(A)	976	4

PIPING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION, WELD PROC.: CADO-5 RADIOGRAPHY: 100% PWRT: N/A PICKLE & OIL: N/A SANDBLAST: SP-6 PAINT: WARM GREY INSULATION: N/A		CADO INDUSTRIES INC. 7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8 TEL: (403) 279-6662; FAX: (403) 279-6687		CUSTOMER: PENNWEST EXPLORATION UNIT NO.: 2013-070-601 MODEL: 4-WELL SEPARATOR SKID (BU-2000) LOCATION:	
DESIGN TEMP.: 90 DEG. C	DMVT: -29 DEG. C	C.A.: 1.6 mm	TEST PRESS.: 14384 KPAC	TEST MEDIA: HOC	DATE: 11/13/2013
ISSUED FOR CONSTRUCTION	REVISION	SY	C-K	APR	REV. 0
0					070-06B
			DRAWING NO.: 070-06B		
			LINE TAG: V-2200 PROCESS OUTLET		

BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	2	PIPE, SMLS, BW, SCH. 80, A106 GR B (STD-L-1)	253 MM	1.9
2	4	ELBOW, 90 DEG, LR, BW, SCH. 80, A234 GR WPB	1	5.4
3	4	FLANGE, RFWN, CL600, SCH. 80 BDRE, A105N	2	38.1
4	4	GASKET, CL600, SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	1	1.0
5	7/8x1.46	(B) STUD BOLTS V/ NUTS, A193 GR B7M / A194 GR 2HM	1	1.0
6	4	CONTROL VALVE, FISHER ET, 600LB FLG, RF	1	1.0
TOTAL FABRICATION WEIGHT				48.3



PIECE NUM	LENGTH (MM)	SIZE (INCH)
(A)	253	2

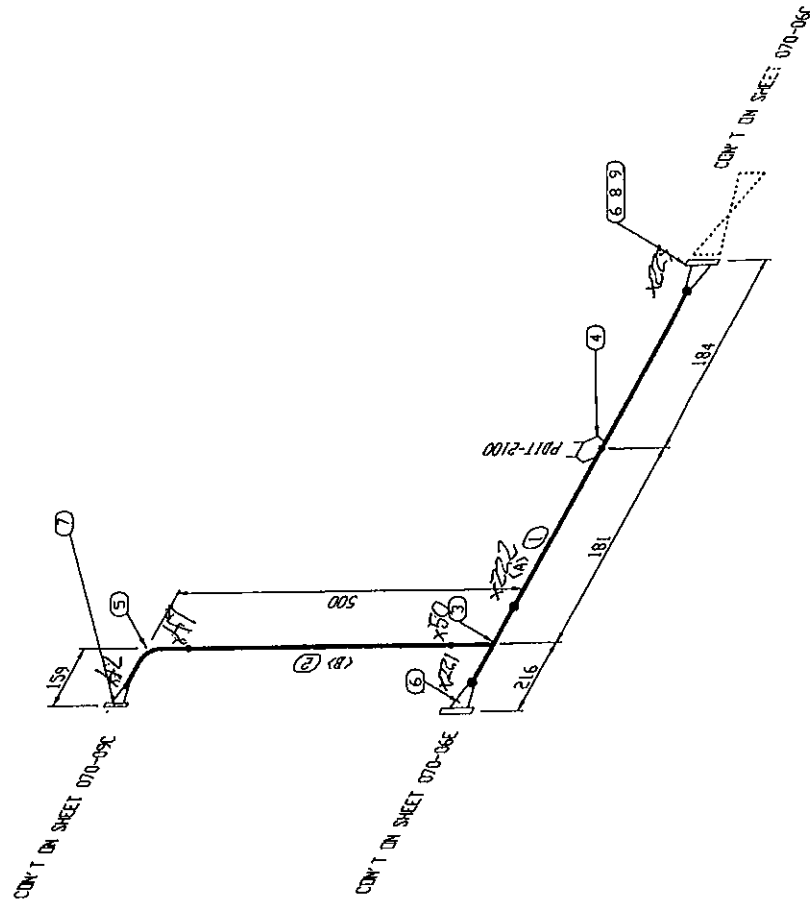
CADO INDUSTRIES INC.		PENNWEST EXPLORATION	
7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8		UNIT NO.: 2013-070-601	
TEL: (403) 279-6662; FAX: (403) 279-6687		MODEL: 4-WELL SEPARATOR SKID (BU-2000)	
		LOCATION:	
		LINE TAG: V-2200 PROCESS GAS OUTLET	
DATE: 11/07/2013		DRAWING NO.: 370-06C	
ISSUED FOR CONSTRUCTION		REV. 0	
NO.	REVISION	BY	CHK
		AP	WC
		BY	CHK
			APR
PIPING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION.			
PIPE SPEC.: CS	WELD PROC.: CADO-5		
DESIGN PRESS.: 9376 KPA	RADIOGRAPHY: 100%		
DESIGN TEMP.: -29 DEG. C	PAINT: N/A		
MONIT: -29 DEG. C	PICKLE & OIL: N/A		
C.A.: 1.6 mm	SANDBLAST: SP-6		
TEST PRESS.: 14364 KPA	PAIN: WARM GREY		
TEST MEDIA: WCG	INSULATION: N/A		



BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	4	PIPE, SMLS, BV, SCH. 80, A106 GR B	147 MM	3.3
2	4X2	TEE, RED, BV, SCH. 80, A106 GR B	328 MM	2.5
3	4X1/2	THREEDRIFT, CL3000, A105N	1	4.9
4	2	ELBOW, 90 DEG, LR, BV, SCH. 80, A234 GR	1	0.2
5	4	FLANGE, RFVW, CL600, SCH. 80 BORE, A105N	2	38.1
6	2	FLANGE, RFVW, CL600, SCH. 80 BORE, A105N	1	5.5
7	4	GASKET, CL600 SPIRAL WOUND, 316 SS /	1	1.0
8	7/8X145	FLEXIBLE GRAPHITE	1	1.0
9		(B) STUD BOLTS V/ NUTS, A193 GR 37H / A194 GR 2HM		
TOTAL FABRICATION WEIGHT				57.1

CUT PIPE LENGTH		SIZE
PIECE NUM	LENGTH (MM)	(INCH)
(A)	147	4
(B)	328	2

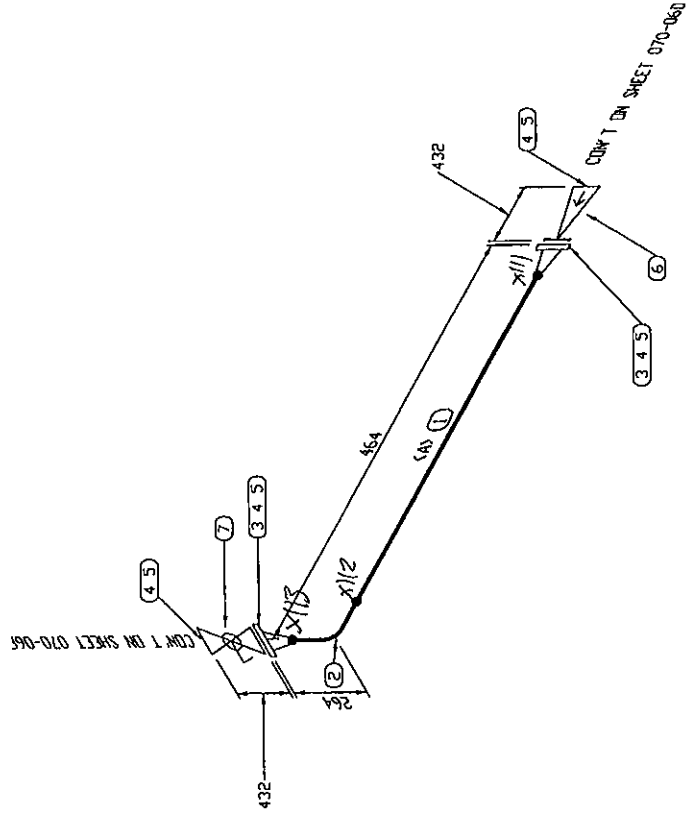


CADO INDUSTRIES INC.		CUSTOMER: PENNWEST EXPLORATION	
7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8		UNIT NO.: 2013-070-601	
TEL: (403) 279-6662; FAX: (403) 279-6687		MODEL: 4-WELL SEPARATOR SKID (8U-2000)	
PIPING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION.		LOCATION:	
PIPE SPEC.: CS	WELD PROC.: CAD0-5	LINE TAG: V-2200 PROCESS GAS OUTLET	
DESIGN PRESS.: 9376 KPA G	RADIOGRAPHY: 100%	DRAWING NO.: 070-06D	
DESIGN TEMP.: 90 DEG. C	PHWT: N/A	REV. 0	
DMT: -29 DEG. C	PICKLE & OIL: N/A		
C.A.: 1.6 mm	SANDBLAST: SP-6		
TEST PRESS.: 14064 KPA G	PAINT: WARM GREY		
TEST MEDIA: WOG	INSULATION: N/A		
ISSUED FOR CONSTRUCTION	NO. 0	DATE: 11/20/2013	BY: WC
REVISION	NO.	DATE	BY
			CHK: WC
			APR

BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	4	PIPE, SMLS, BW, SCH. 80, A106 GR B	198 MM	4.5
2	4	ELBOW, 90 DEG, LR, BW, SCH. 80, A234 GR	1	5.4
3	4	FLANGE, RFWN, CL600, SCH. 80 BORE, A105N	2	38.1
4	4	GASKET, CLOUD SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	4	4.0
5	7/8X146	(8) STUD BOLTS 1/2 NUTS, A193 GR B7N / A194 GR 2HM	4	4.0
6	4	VALVE, SWING CHECK, RF, NACE, CLASS 600 ASME, A105N	1	115.7
7	4	VALVE, BALL, RP, RF, NACE, CLASS 600 ASME, A105N	1	74.9
TOTAL FABRICATION WEIGHT				246.4

CUT PIPE LENGTH  
PIECE LENGTH (MM)  
SIZE (INCH)  
(A) 198 4

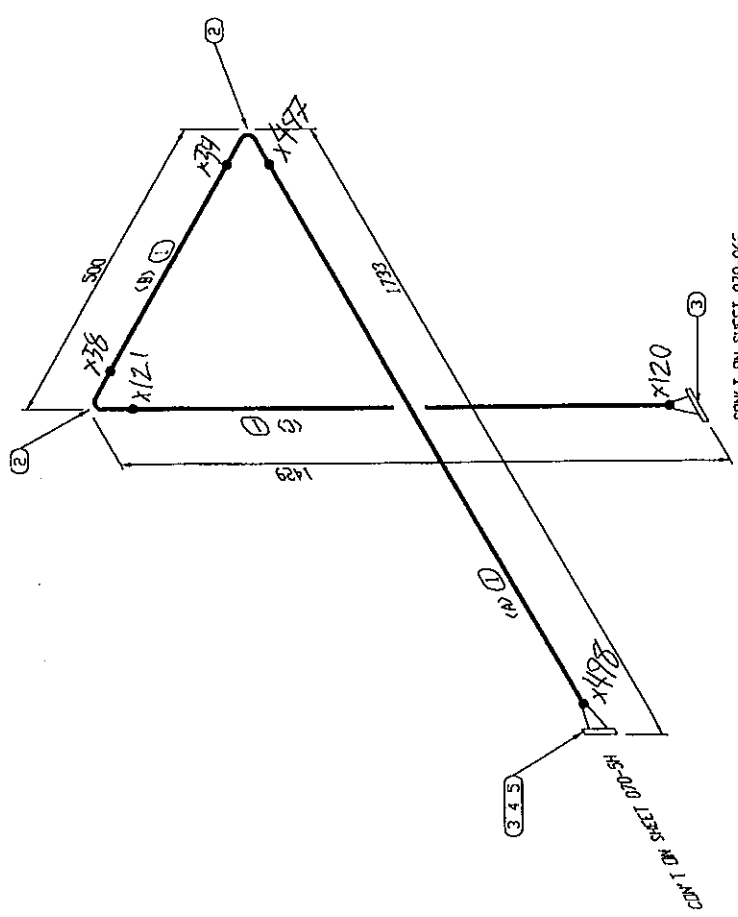


CADO INDUSTRIES INC.		PENNWEST EXPLORATION	
7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8		UNIT NO.: 2013-070-501	
TEL: (403) 279-6662; FAX: (403) 279-6687		MODEL: 4-WELL SEPARATOR SKID (BU-2000)	
PIPING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION.		LOCATION:	
PIPE SPEC.: CS	WELD PROC.: CADO-5	LINE TAG: V-2200 PROCESS GAS OUTLET	
DESIGN PRESS.: 9376 KPA	RADIOGRAPHY: 100%	DRAWING NO.: 070-06E	
DESIGN TEMP.: 90 DEG. C	PAINT: N/A	REV. C	
DMNT: -29 DEG. C	PICKLE & OIL: N/A		
C.A.: 1.6 mm	SANDBLAST: SP-5		
TEST PRESS.: 14064 KPA	PAINT: WARM GREY		
TEST MEDIA: WCG	INSULATION: N/A		
NO.	REVISION		
DATE	BY	CHK	APR
11/13/2013	AP	WC	WC

BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	4	PIPE, SMLS, BW, SCH. 80, A106 GR B	2816 MM	62.8
2	4	ELBOW, 90 DEG. LR, BV, SCH. 80, A234 GR	2	10.7
3	4	FLANGE, RFUN, CL600, SCH 80 BDRF, A105N	2	38.1
4	4	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	1	1.0
5	7/8X146	(B) STUD BOLTS W/ NUTS, A193 GR B7M / A194 GR 2HM	1	1.0
TOTAL FABRICATION WEIGHT				113.6

PIECE NUM	LENGTH (MM)	SIZE (INCH)
(A)	1467	4
(B)	188	4
(C)	1161	4



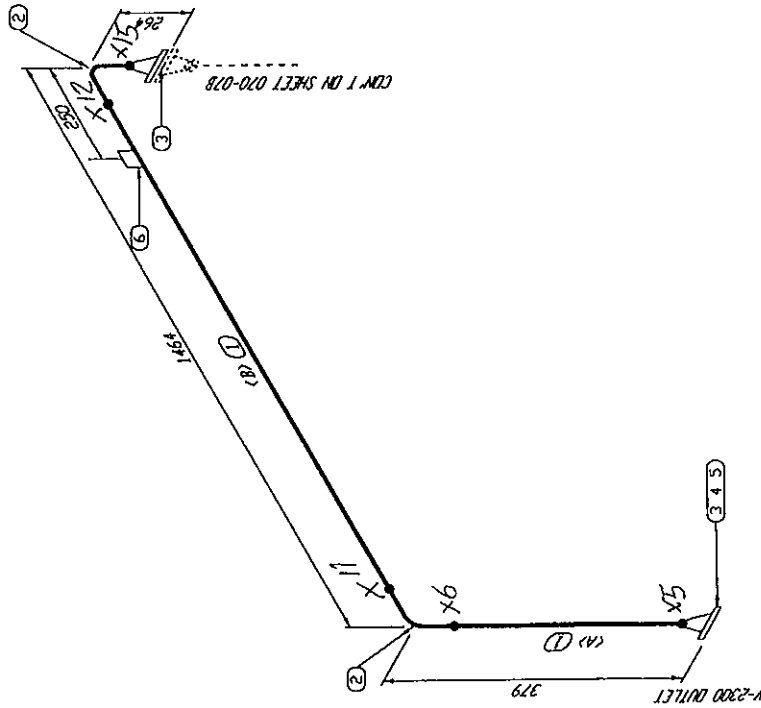
CADO INDUSTRIES INC.		PENNWEST EXPLORATION	
7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8		UNIT NO.: 2013-070-601	
TEL: (403) 278-6682; FAX: (403) 278-6687		MODEL: 4-WELL SEPARATOR SKID (BU-2000)	
DATE: 11/10/2013		LOCATION:	
AP	WC	LINE TAG: V-2200 PROCESS GAS OUTLET	
BY	CHK	DRAWING NO.: 070-066	
NO.	REV.	REV. C	

PIPE SPEC.: CS	WELD PROC.: CADO-5	DESIGN PRESS.: 9.376 MPaG	RADIOGRAPHY: 100%
DESIGN TEMP.: 90 DEG. C	PHRT: N/A	INSULATION: N/A	
MOHT: -29 DEG. C	PICKLE & OIL: N/A		
C.A.: 1.6 mm	SANDBLAST: SP-6		
TEST PRESS.: 14064 KPaG	PANT: WARM GREY		
TEST MEDIA: WOG			

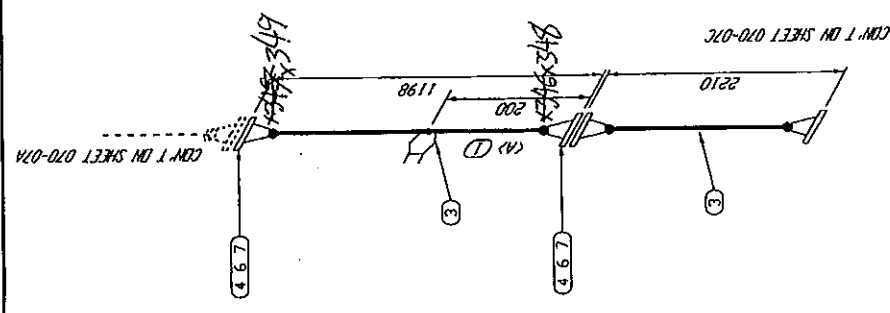
BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	4	PIPE, SMLS, BW, SCH. 80, A106 GR. B	1265 MM	28.3
2	4	ELBOW, 90 DEG, LR, BW, SCH. 80, A234 GR. WPB	2	10.7
3	4	FLANGE, RFWN, CL600, SCH. 80 BORE, A105N	2	38.1
4	4	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	1	1.0
5	7/8x1.46	(8) STUD BOLTS V7 NUTS, A193 GR B7M / A194 GR 2HH	1	1.0
6	1/2	CPLG 3000# NPT A105N	1	
TOTAL FABRICATION WEIGHT				79.0

CUT PIPE LENGTH		SIZE
PIECE NUM	LENGTH (MM)	(INCH)
<A>	112	4
<B>	1153	4



CADO INDUSTRIES INC.		CUSTOMER: PENNVEST EXPLORATION	
7491 - 110 AVE SE, CALGARY, ALBERTA, T2C 3B8		UNIT NO.:	2013-070-601
TEL: (403) 279-6682; FAX: (403) 279-6687		MODEL:	4-WELL SEPARATOR SKID (BU-2000)
		LOCATION:	
		LINE TAG:	V-2300 PROCESS OUTLET
		DRAWING NO.:	070-07A
			REV. 0
PIPING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION.		DATE:	11/19/2013
PIPE SPEC.: CS	WELD PROC.: CADO-5	BY:	WC
DESIGN PRESS.: 9376 KPAG	RADIOGRAPHY: 100%	CHK:	AP
DESIGN TEMP.: 90 DEG. C	PWHT: N/A	NO.:	0
NDMT: -29 DEG. C	PICKLE & QLT: N/A	REVISION:	
C.A.: 1.6 mm	SANDBLAST: SP-6		
TEST PRESS.: 14084 KPAG	PAINT: WARM GREY		
TEST MEDIA: WOC	INSULATION: N/A		



BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	4	PIPE, SMLS, BV, SCH 80, A106 GR B	976 MM	26.9
2	4	METER RUN	1	44.4
3	4X1/2	THREADED, CL 3000, A105N	1	0.2
4	4	FLANGE, RF, WN, CL 600, SCH 80 BORE, A105N	2	38.1
5	4	METER RUN	2	38.1
6	4	GASKET, CL 600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	2	2.0
7	7/8X146	(B) STUD BOLTS W/ NUTS, A193 GR 37H / A194 GR 2HM	2	2.0
TOTAL FABRICATION WEIGHT				151.5

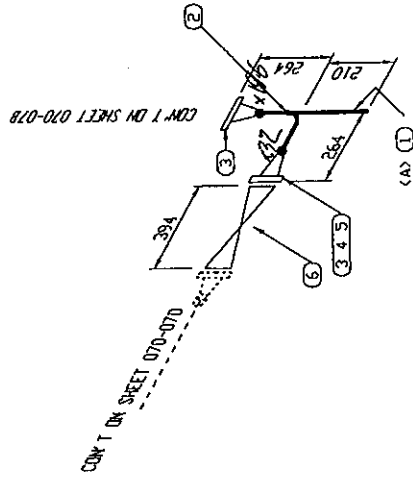
CUT PIPE LENGTH	
PIECE LENGTH (MM)	SIZE (INCH)
<A> 976	4

PIPING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION, PIPE SPEC.: CS WELD PROC.: CADO-5 DESIGN PRESS.: 9376 KPAQ RADIOGRAPHY: 100% DESIGN TEMP.: -29 DEG. C PWHT: N/A WDMT: -29 DEG. C PICKLE & OIL: N/A C.A.: 1.6 mm SANDBLAST: SP-6 TEST PRESS.: 14084 KPAQ PAINT: WARM GREY TEST MEDIA: H2O INSULATION: N/A		CADO INDUSTRIES INC. 7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8 TEL: (403) 279-6682; FAX: (403) 279-6687		CUSTOMER: PENNWEST EXPLORATION UNIT NO.: 2013-070-601 MODEL: 4-WELL SEPARATOR SKID (BU-2000) LOCATION: LINE TAG: V-2300 PROCESS OUTLET DRAWING NO.: 070-078 REV: 0	
ISSUED FOR CONSTRUCTION	11/10/2013	AP	WC	WC	
NO.	NO.	DATE	BY	CHK	APR

BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	2	PIPE, SMLS, BV, SCH. 80, A106 GR. B (STD-1-1)	253 MM	1.9
2	4	ELBOW, 90 DEG, LR, BV, SCH. 80, A234 GR. B	1	5.4
3	4	FLANGE, RFUN, CL600, SCH. 80 BORE, A105N	2	38.1
4	4	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	1	1.0
5	7/8X146	(B) STUD BOLTS W/ NUTS, A193 GR. B7M / A194 GR. 2HM	1	1.0
6	4	CONTROL VALVE, FISHER ET, 600LB FLG. RF	1	1.0
TOTAL FABRICATION WEIGHT				48.3

CUT PIPE LENGTH	
PIECE NUM	SIZE (INCH)
(A)	253
	2



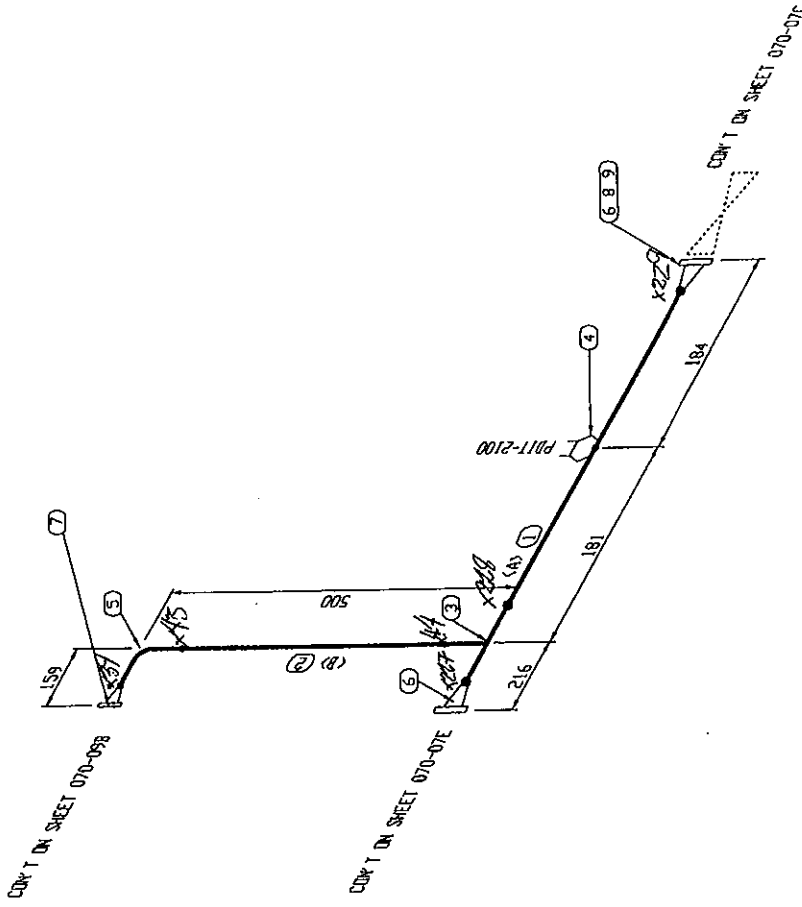
PIPING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION. PIPE SPEC: CS WELD PROC.: CADO-5 DESIGN PRESS.: 9375 KPA G RADIOGRAPHY: 100% DESIGN TEMP.: 90 DEG. C PWHT: N/A WDMT: -29 DEG. C PICKLE & OIL: N/A C.A.: 1.6 mm SANDBLAST: SP-5 TEST PRESS.: 14064 KPA G PAINT: WARM GREY TEST MEDIA: WOG INSULATION: N/A		CAD O INDUSTRIES INC. 7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8 TEL: (403) 279-6662; FAX: (403) 279-6687		CUSTOMER: PENNWEST EXPLORATION UNIT NO.: 2013-070-601 MODEL: 4-WELL SEPARATOR SKID (BU-2000) LOCATION:	
11/10/2013 AP WC WC DATE SY CHK APR NO. REVISION		0 ISSUED FOR CONSTRUCTION WARM GREY N/A		V-2300 PROCESS GAS OUTLET C70-07C REV. 0	

BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	4	PIPE, SMLS, BV, SCH. 80, A106 GR B	147 MM	3.3
2	2	PIPE, SMLS, BV, SCH. 80, A106 GR B	328 MM	2.5
3	4X2	TEE, RED, BV, SCH. 80, A234 GR VP8	1	4.9
4	4X1/2	THREADED, CL3000, A105N	1	0.2
5	2	ELBOW, 90 DEG, LR, BV, SCH. 80, A234 GR VP8	1	0.9
6	4	FLANGE, RFWN, CL600, SCH. 80 BORE, A105N	2	38.1
7	2	FLANGE, RFWN, CL600, SCH. 80 BORE, A105N	1	5.5
8	4	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	1	1.0
9	7/8X146	(8) STUD BOLTS 1/2 NUTS, A193 GR 8HM / A194 GR 2HM	1	1.0

TOTAL FABRICATION WEIGHT 57.1

CUT PIPE LENGTH		SIZE (INCH)
PIECE NUM	LENGTH (MM)	
<A>	147	4
<B>	328	2

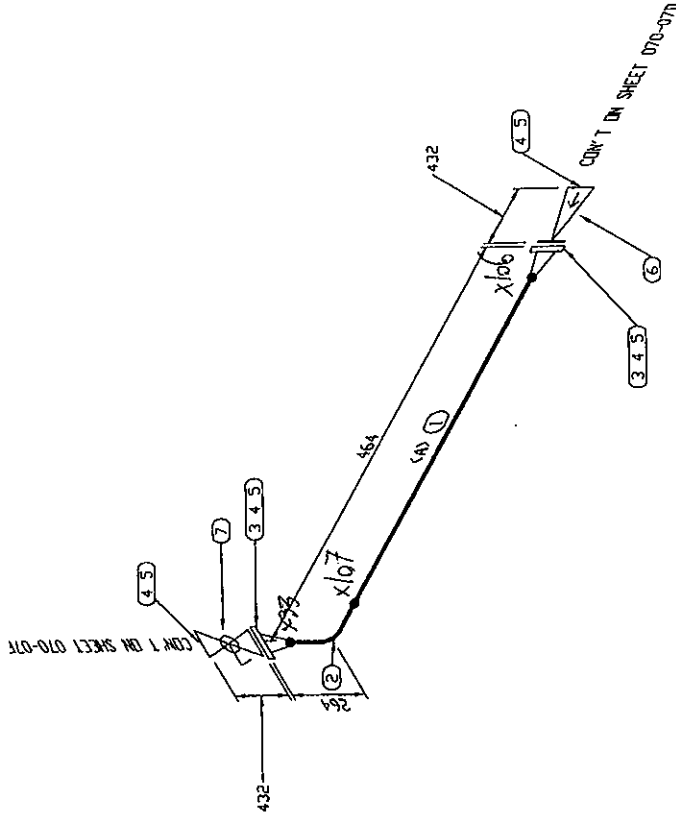


CADO INDUSTRIES INC.		CUSTOMER: PENNWEST EXPLORATION	
7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8		UNIT NO.: 2013-070-601	
TEL: (403) 279-6662; FAX: (403) 279-6887		MODEL: 4-WELL SEPARATOR SKID (BU-2000)	
PIPING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION.		LOCATION:	
PIPE SPEC.: CS	WELD PROC.: CADO-5	LINE TAG: V-2300 PROCESS GAS OUTLET	
DESIGN PRESS.: 9376 KPA G	RADIOGRAPHY: 100%	DRAWING NO.: 070-070	
DESIGN TEMP.: 90 DEG. C	PHWT: N/A	REV. C	
MMT: -29 DEG. C	PICKLE & OIL: N/A		
C.A.: 1.6 mm	SANDBLAST: SP-6		
TEST PRESS.: 14064 KPA G	PAINT: WARM GREY		
TEST MEDIA: WOG	INSULATION: N/A		
NO.	REVISION		
DATE	BY		
11/19/2013	AP		
WC	WC		
CHK	APR		

BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	4	PIPE, SMLS, BW, SCH 80, A106 GR B	198 MM	4.5
2	4	ELBOW, 90 DEG, LR, BW, SCH 80, A234 GR	1	5.4
3	4	FLANGE, RFWN, CL600, SCH 80 BORE, A105N	2	38.1
4	4	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	4	4.0
5	7/8X146	(B) STUD BOLTS V/ NUTS, A193 GR B7M / A194 GR 2HM	4	4.0
6	4	VALVE, SWING CHECK, RF, NACE, CLASS 600	1	115.7
7	4	VALVE, BALL, RP, RF, NACE, CLASS 600	1	74.9

TOTAL FABRICATION WEIGHT 246.4



CUT PIPE LENGTH

PIECE LENGTH (MM) SIZE (INCH)

(A) 198 4

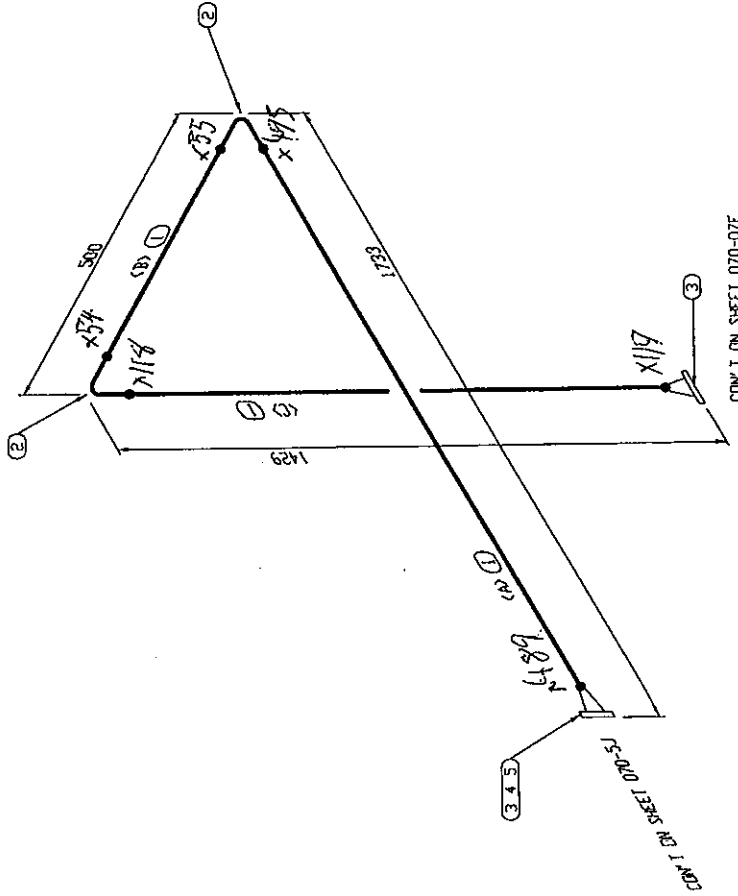
PIPEING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION.		CADO INDUSTRIES INC.		CUSTOMER: PENNWEST EXPLORATION	
PIPE SPEC.: CS	WELD PROC.: CA00-5	7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8		UNIT NO.: 2013-070-601	
DESIGN PRESS.: 9376 KPAG	RADIOGRAPHY: 100%	TEL: (403) 278-6662; FAX: (403) 279-8687		MODEL: 4-WELL SEPARATOR SKID (BU-2000)	
DESIGN TEMP.: 90 DEG. C	PHRT: N/A			LOCATION:	
SIGMT: -29 DEG. C	PICKLE & OIL: N/A			LINE TAG: V-2300 PROCESS GAS OUTLET	
C.A.: 1.6 mm	SANDBLAST: SP-6			DRAWING NO.: 070-07E	REV. 0
TEST PRESS.: 14064 KPAG	PAINT: WARM GREY	DATE: 11/10/2013	BY: AP		
TEST MEDIA: WOG	INSULATION: N/A				
		NO. 0	REVISION		



BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	4	PIPE, SMLS, BV, SCH. 80, A106 GR B	2816 MM	62.8
2	4	ELBOW, 90 DEG, LR, BV, SCH. 80, A234 GR	2	10.7
3	4	FLANGE, RFVNL, CL 600, SCH 80, BDRF, A105N	2	38.1
4	4	GASKET, CL 600, SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	1	1.0
5	7/8X1/4	(B) STUD BOLTS W/ NUTS, A193 GR B7M / A194 GR 2HM	1	1.0
<b>TOTAL FABRICATION WEIGHT</b>				<b>113.6</b>

CUT PIPE LENGTH		SIZE
PIECE NUM	LENGTH (MM)	(INCH)
<A>	1467	4
<B>	188	4
<C>	1161	4

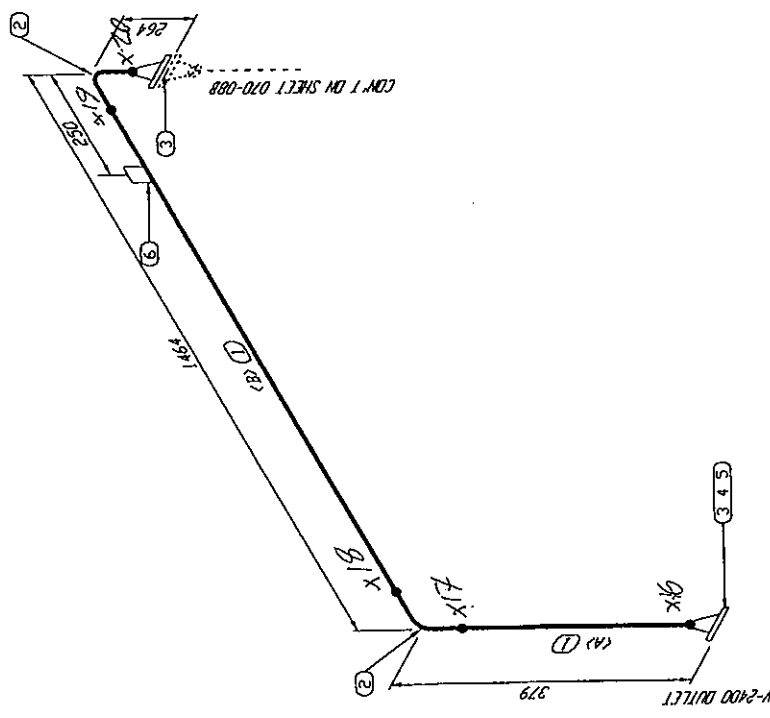


PIPING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION. PIPE SPEC.: CS WELD PROC.: CADO-5 DESIGN PRESS.: 9376 KPAC RADIOGRAPHY: 100% DESIGN TEMP.: 90 DEG. C PWHT: N/A DMNT: -29 DEG. C PICKLE & OIL: N/A C.A.: 1.6 mm SANDBLAST: SP-6 PAINT: WARM GREY TEST PRESS.: 14064 KPAC INSULATION: N/A TEST MEDIA: WOC		CAD INDUSTRIES INC. 7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8 TEL: (403) 279-6662; FAX: (403) 279-6887		CUSTOMER: PENNWEST EXPLORATION UNIT NO.: 2013-070-601 MODEL: 4-WELL SEPARATOR SKID (BU-2000) LOCATION:
ISSUED FOR CONSTRUCTION DATE: 11/10/2013 NO.: 0 REVISION:		LINE TAG: V-2300 PROCESS GAS OUTLET DRAWING NO.: 070-07E REV: 0	AP: HC SY: CHK APR:	

BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	4	PIPE, SMLS, BW, SCH. 80, A106 GR B	1265 MM	28.3
2	4	ELBOW, 90 DEG, LR, BW, SCH. 80, A234 GR VPB	2	10.7
3	4	FLANGE, RFVN, CL 600, SCH. 80 BURE, A105N	2	38.1
4	4	GASKET, CL 600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	1	1.0
5	7/8X146	(B) STUD BOLTS W/ NUTS, A193 GR B7M / A194 GR 2HM	1	1.0
6	1/2	CPLG 3000# NPT A-105N	1	
		TOTAL FABRICATION WEIGHT		79.0

CUT PIPE LENGTH		SIZE	
PIECE NUM	LENGTH (MM)	(A)	(B)
<A>	112	4	
<B>	1153		4

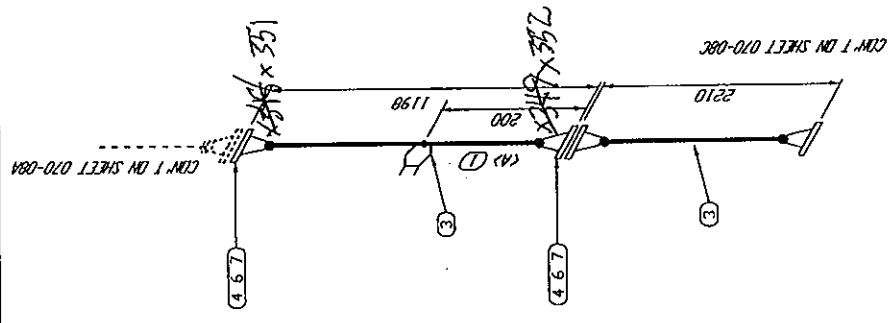


CADO INDUSTRIES INC. 7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8 TEL: (403) 279-8662; FAX: (403) 279-6887				CUSTOMER: PENNWEST EXPLORATION			
PIPING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION.				UNIT NO.: 2013-070-601			
PIPE SPEC.: CS	WELD PROC.: CADO-5	RADIOGRAPHY: 100%		MODEL: 4-WELL SEPARATOR SKID (BU-2000)			
DESIGN PRESS.: 9376 KPA G	PHWT: N/A	PICKLE & OIL: N/A		LOCATION:			
DESIGN TEMP.: 90 DEG. C	WDMT: -29 DEG. C	SANDBLAST: SP-6		LINE TAG: V-2400 PROCESS OUTLET			
C.A.: 1.6 mm	PAINT: WARM GREY	DATE: 11/19/2013	BY: WC	CHK: WC	REV: 0	DRAWING NO.: 070-08A	
TEST PRESS.: 14064 KPA G	INSULATION: N/A	REVISION	NO.				

BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	4	PIPE, SMLS, BN, SCH 80, A106 GR B	976 MH	26.9
2	4	METER RUN	1	44.4
3	4X1/2	THREDDLET, CL3000, A105N	1	0.2
4	4	FLANGE, RFMN, CL600, SCH 80 BORE, A105N	2	38.1
5	4	METER RUN	2	38.1
6	4	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	2	2.0
7	7/8X1.46	(8) STUD BOLTS W/ NUTS, A193 GR B7M / A194 GR 2HM	2	2.0
TOTAL FABRICATION WEIGHT				151.5

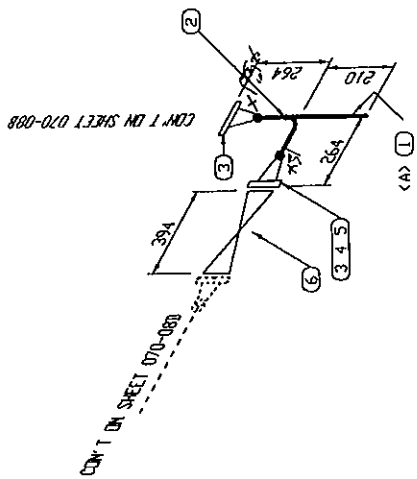
CUT PIPE LENGTH  
 PIECE LENGTH (MM) 976 4  
 SIZE (INCH) 4



PIPING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION. WELD PROC.: CADO-5 RADIOGRAPHY: 100% PWHT: N/A PICKLE & OIL: N/A SANDBLAST: SP-6 PAINT: WARM GREY INSULATION: N/A		CADO INDUSTRIES INC. 7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8 TEL: (403) 279-6862; FAX: (403) 279-6887		CUSTOMER: PENNWEST EXPLORATION UNIT NO.: 2013-070-601 MODEL: 4-WELL SEPARATOR SKID (BU-2000) LOCATION:	
DESIGN PRESS.: 9376 KPA DESIGN TEMP.: 90 DEG. C MDMT: -29 DEG. C C.A.: 1.5 mm TEST PRESS.: 14064 KPA TEST MEDIA: WOG	DATE: 11/10/2013 BY: AP CHECKED: WC APPROVED: WC	LINE TAG: V-2400 PROCESS OUTLET DRAWING NO.: 070-088	REV: 0	NO. 0	REVISION

BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	2	PIPE, SMLS, BW, SCH. 80, A106 GR B (STD-L-1)	253 MM	1.9
2	4	ELBOW, 90 DEG, LR, BW, SCH. 80, A234 GR WPB	1	5.4
3	4	FLANGE, RFVN, CL600, SCH. 80 BORE, A105N	2	38.1
4	4	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	1	1.0
5	7/8X146	(8) STUD BOLTS W/ NUTS, A193 GR B7N / A194 GR 2HM	1	1.0
6	4	CONTROL VALVE, FISHER ET, 60DLB FLG, RF	1	1.0
TOTAL FABRICATION WEIGHT				48.3



CUT PIPE LENGTH	PIECE LENGTH (MM)	SIZE (INCH)
(A)	253	2

PIPING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION. PIPE SPEC.: CS WELD PROC.: C400-S DESIGN PRESS.: 9376 KPAG RADIOGRAPHY: 100% DESIGN TEMP.: 90 DEG. C PART: N/A ADMT.: -29 DEG. C PICKLE & OIL: N/A C.A.: 1.6 mm SANDBLAST: SP-6 TEST PRESS.: 14064 KPAG PAINT: WARM GREY TEST MEDIA: HOC INSULATION: N/A		CADDO INDUSTRIES INC. 7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8 TEL: (403) 279-6662; FAX: (403) 279-6667		CUSTOMER: PENNWEST EXPLORATION UNIT NO.: 2013-070-601 MODEL: 4-WELL SEPARATOR SKID (BU-2000) LOCATION: LINE TAG: V-2400 PROCESS GAS OUTLET DRAWING NO.: 070-08C
DATE: 11/10/2013 BY: AP CHECK: WC APPROVE: WC	REVISION NO. 0	REV. 0		

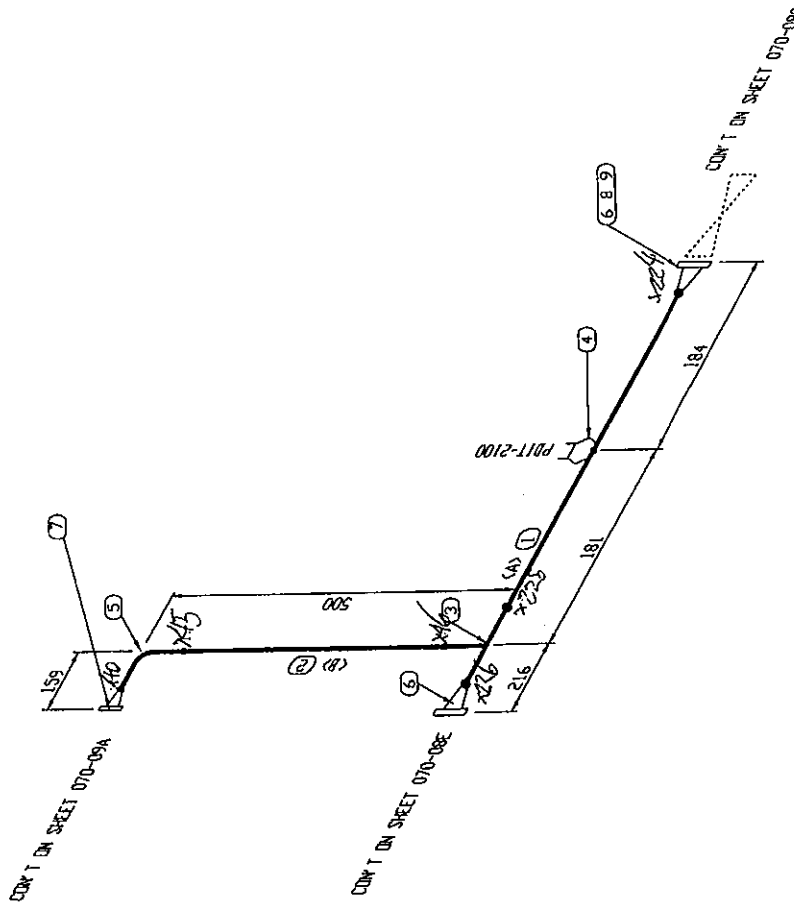
BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	4	PIPE, SMLS, BW, SCH 80, A106 GR B	147 MM	3.3
2	2	PIPE, SMLS, BW, SCH 80, A106 GR B	328 MM	2.5
3	4X2	TEE, RED, BW, SCH 80, A234 GR WPB	1	4.9
4	4X1/2	THROU-LET, CL3000, A105N	1	0.2
5	2	ELBOW, 90 DEG, LR, BW, SCH 80, A234 GR WPB	1	0.9
6	4	FLANGE, RFWN, CL600, SCH 80 BORE, A105N	2	38.1
7	2	FLANGE, RFWN, CL600, SCH 80 BORE, A105N	1	5.5
8	4	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	1	1.0
9	7/8X146	(B) STUD BOLTS V/ NUTS, A193 GR B7M / A194 GR 2HM	1	1.0

TOTAL FABRICATION WEIGHT 57.1

CUT PIPE LENGTH

PIECE NUM	LENGTH (MM)	SIZE (INCH)
<A>	147	4
<B>	328	2

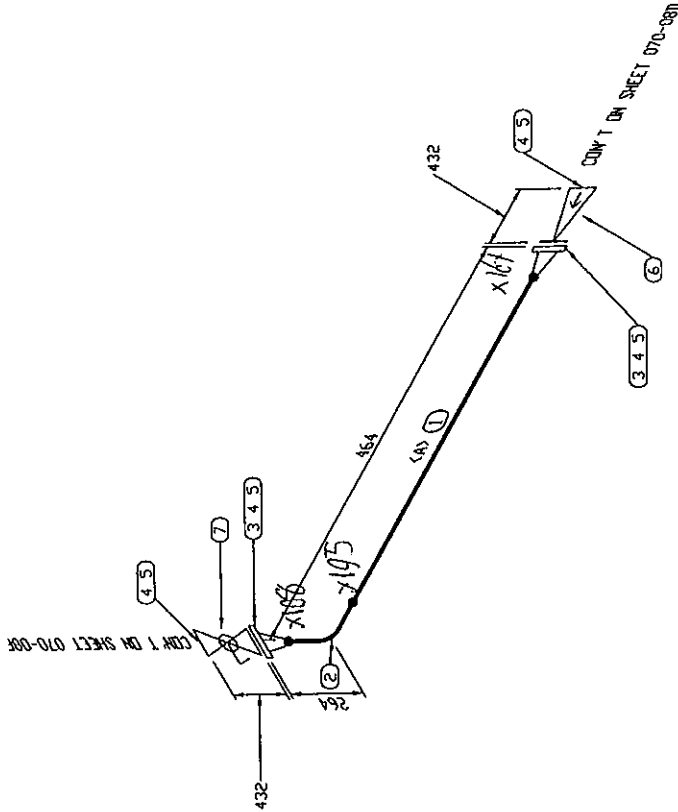


PIPING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION. WELD PROC.: CADO-5 RADIOGRAPHY: 100% PART: N/A PICKLE & OIL: N/A SANDBLAST: SP-5 PAINT: WASH GREY INSULATION: N/A		CADO INDUSTRIES INC. 7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8 TEL: (403) 279-8662; FAX: (403) 279-6887		CUSTOMER: PENNWEST EXPLORATION UNIT NO.: 2013-070-601 MODEL: 4-WELL SEPARATOR SKID (BU-2000) LOCATION: LINE TAG: V-2400 PROCESS GAS OUTLET DRAWING NO.: 070-08D REV: 0	
CS 9376 KPAC 90 DEG. C -29 DEG. C 1.6 mm 14064 KPAC WOG	NO. 0 REVISION DATE 11/13/2013 BY AP WC WC CHK APR	0 ISSUED FOR CONSTRUCTION REVISION	0 DATE 11/13/2013 BY AP WC WC CHK APR	0 DATE 11/13/2013 BY AP WC WC CHK APR	0 DATE 11/13/2013 BY AP WC WC CHK APR

BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	4	PIPE, SMLS., BV, SCH. 80, A106 GR B	198 MM	4.5
2	4	ELBOW, 90 DEG., LR, BW, SCH. 80, A234 GR	1	5.4
3	4	FLANGE, RFWN, CL600, SCH. 80 BDR, A105N	2	38.1
4	4	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	4	4.0
5	7/8X146	(8) STUD BOLTS W/ NUTS, A193 GR B7H / A194 GR 2HM	4	4.0
6	4	VALVE, SWING CHECK, RF, NACE, CLASS 600 ASME, A105N	1	115.7
7	4	VALVE, BALL, RF, NACE, CLASS 600 ASME, A105N	1	74.9
TOTAL FABRICATION WEIGHT				246.4

CUT PIPE LENGTH	PIECE LENGTH (MM)	SIZE (INCH)
(4)	198	4

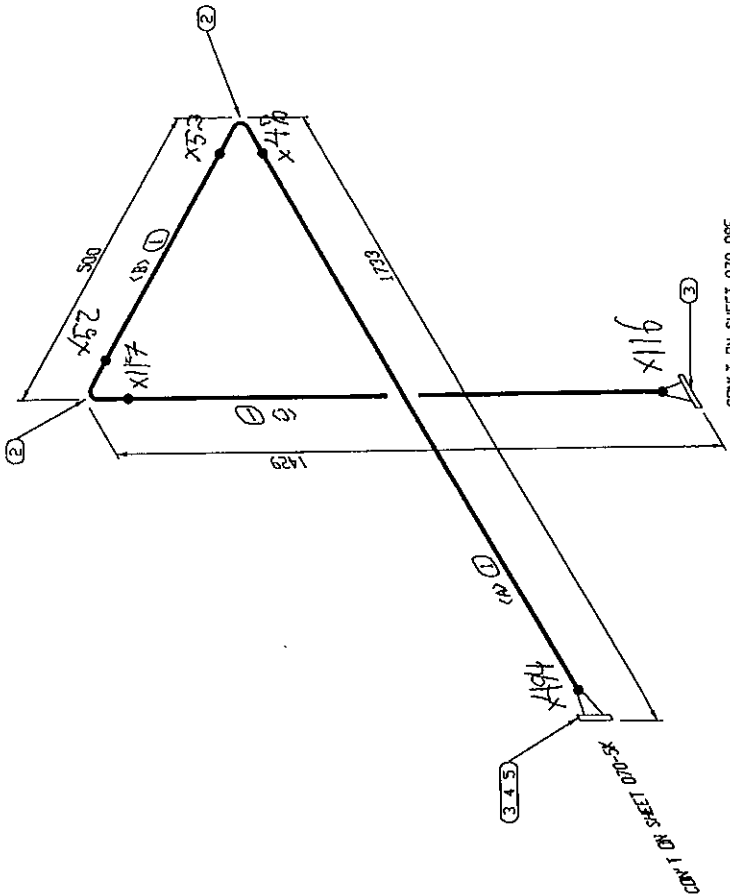


CADO INDUSTRIES INC.		PENNWEST EXPLORATION	
7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8		UNIT NO.: 2013-070-601	
TEL: (403) 279-6662; FAX: (403) 279-6687		MODEL: 4-WELL SEPARATOR SKID (BU-2000)	
		LOCATION:	
		LINE TAG: V-2400 PROCESS GAS OUTLET	
		DRAWING NO.: 070-08E	
		REV. C	
PIPING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION.			
PIPE SPEC.: CS	WELD PROC.: CADO-5		
DESIGN PRESS.: 9376 KPAC	RADIOGRAPHY: 100%		
DESIGN TEMP.: 50 DEG. C	PHWT: N/A		
NOHT: -29 DEG. C	PICKLE & OIL: N/A		
C.A.: 1.6 mm	SANDBLAST: SP-6		
TEST PRESS.: 14064 KPAC	PAINT: WARM GREY		
TEST MEDIA: WOG	INSULATION: N/A		
	NO.	DATE	BY
	0	11/10/2013	AP
			WC
			WC
			CHK
			APR

BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	4	PIPE, SMLS, BW, SCH 80, A106 GR B	2816 MM	62.8
2	4	ELBOW, 90 DEG, LR, BW, SCH 80, A234 GR	2	10.7
3	4	NPB		
4	4	FLANGE, CL600, SCH 80 BORE, A105N	2	38.1
4	4	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	1	1.0
5	7/8X146	(B) STUD BOLTS W/ NUTS, A193 GR B7M / A194 GR 2HM	1	1.0
TOTAL FABRICATION WEIGHT				113.6

PIECE NUM	LENGTH (MM)	SIZE (INCH)
(A)	1467	4
(B)	188	4
(C)	1161	4



PIPE SPEC:		WELD PROC:		RADIOGRAPHY:		PHWT:		PICKLE & OIL:		SANDBLAST:		PAINT:		INSULATION:	
CS		CADO-5		100%		N/A		N/A		SP-5		WARM GREY		N/A	
DESIGN PRESS:	9376 KPAG														
DESIGN TEMP:	-29 DEG. C														
ADM'T:	1.6 mm														
TEST PRESS:	14064 KPAG														
TEST MEDIA:	WOG														

**CADO INDUSTRIES INC.**

7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8  
 TEL: (403) 279-6662; FAX: (403) 279-6687

CUSTOMER:	PENNWEST EXPLORATION
UNIT NO.:	2013-070-601
MODEL:	4-WELL SEPARATOR SKID (BU-2000)
LOCATION:	
LINE TAG:	V-2400 PROCESS GAS OUTLET
DRAWING NO.:	070-08F
REV.:	0

DATE	BY	CHK	APR
11/10/2013	AP	WC	WC

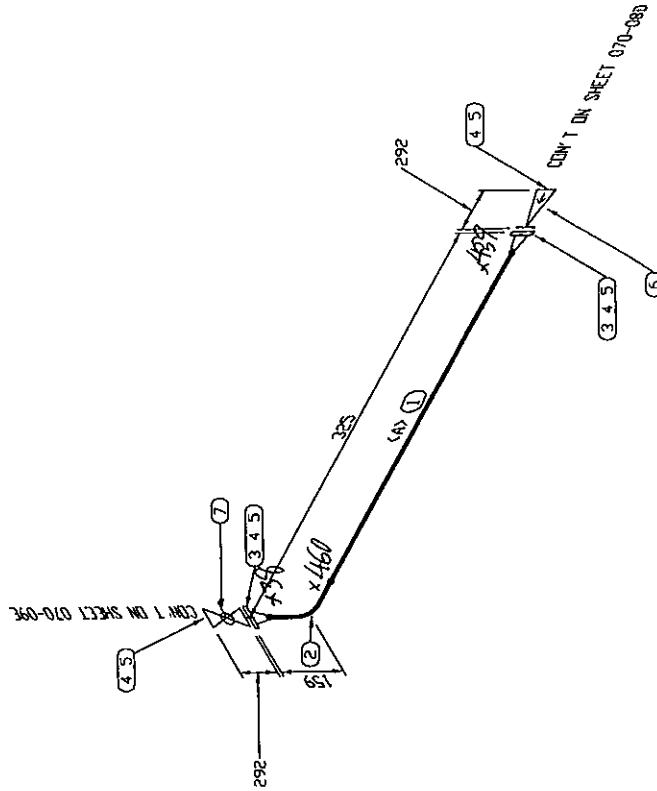
ISSUED FOR CONSTRUCTION  
 NO. 0  
 REVISION

BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	2	PIPE, SMLS, BW, SCH 80, A106 GR B	163 MM	1.3
2	2	ELBOW, 90 DEG, LR, BW, SCH 80, A234 GR	1	0.9
3	2	FLANGE, RFWN, CL600, SCH 80 BORE, A105N	2	10.9
4	2	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	4	4.0
5	5/8X108	(B) STUD BOLTS W/ NUTS, A193 GR B7H / A194 GR 2HM	4	4.0
6	2	VALVE, SWING CHECK, RF, NACE, CLASS 600	1	31.8
7	2	VALVE, BALL, RP, RF, NACE, CLASS 600	1	20.0
TOTAL FABRICATION WEIGHT				72.7

CUT PIPE LENGTH

PIECE NUM	LENGTH (MM)	SIZE (INCH)
(A)	163	2



**CADO INDUSTRIES INC.**

7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8  
 TEL: (403) 279-6662; FAX: (403) 279-6687

CUSTOMER: PENNWEST EXPLORATION

UNIT NO.: 2013-070-601

MODEL: 4-WELL SEPARATOR SKID (BU-2000)

LOCATION:

LINE TAG: FUEL GAS OUTLET

DRAWING NO.: 070-09A

REV. 0

PIPING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION.

WELD PROC.: CADO-5

RADIOGRAPHY: 100%

PHWT: N/A

PICKLE & OIL: N/A

SANDBLAST: SP-6

PAINT: WARM GREY

INSULATION: N/A

CS

DESIGN PRESS.: 9376 KPAC

DESIGN TEMP.: 90 DEG. C

MOULT: -29 DEG. C

C.A.: 1.6 mm

TEST PRESS.: 14064 KPAC

TEST MEDIA: WOG

NO.

ISSUED FOR CONSTRUCTION

REVISION

NO.

DATE

SY

CHK

AP

WC

WC

DATE

SY

CHK

APR

APR

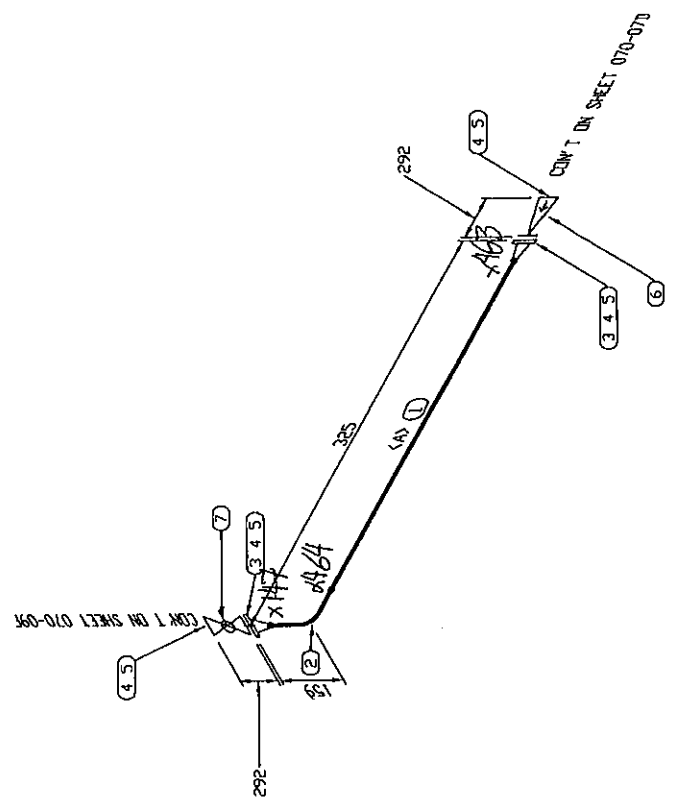
APR



BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	2	PIPE, SMLS, BV, SCH. 80, A106 GR B	163 MM	1.3
2	2	ELBOW, 90 DEG, LR, BV, SCH. 80, A234 GR	1	0.9
3	2	FLANGE, RFVN, CL600, SCH. 80 BORE, A105N	2	10.9
4	2	GASKET, CL600 SPIRAL WOUND, 316 SS /	4	4.0
5	5/8X108	FLEXIBLE GRAPHITE	4	4.0
6	2	(B) STUD BOLTS 1/2 NUTS, A193 GR B7M /	1	31.8
7	2	VALVE, SWING CHECK, RF, NACE, CLASS 600	1	20.0
		ASME, A105N		
		VALVE, BALL, RP, RF, NACE, CLASS 600		
		ASME, A105N		
		TOTAL FABRICATION WEIGHT		72.7

CUT PIPE LENGTH	PIECE LENGTH	SIZE
(MM)	(INCH)	(INCH)
<A>	163	2

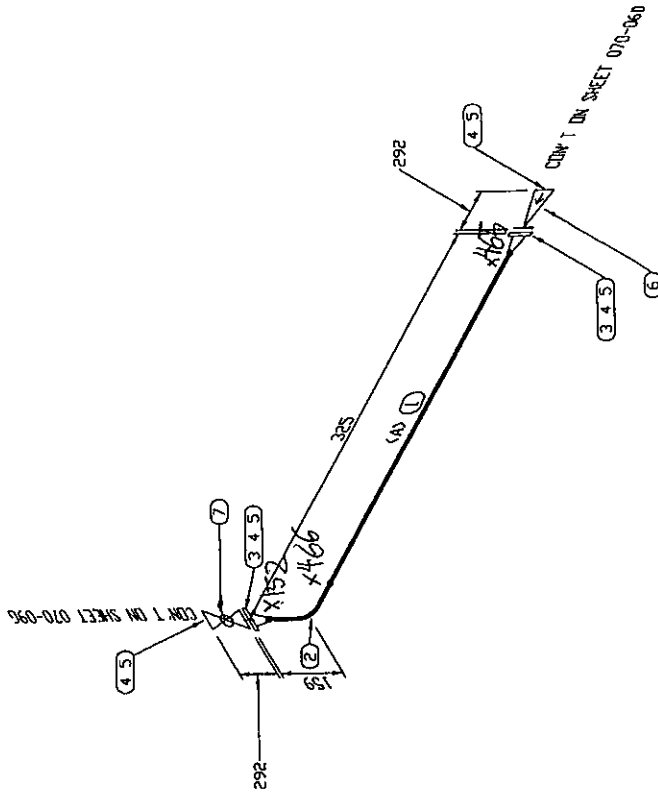


CADO INDUSTRIES INC.		PENNWEST EXPLORATION	
7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8		2013-070-601	
TEL: (403) 278-6662; FAX: (403) 278-6687		4-WELL SEPARATOR SKID (BU-2000)	
PIPE SPEC.: CS	WELD PROC.: CADO-5	UNIT NO.:	
DESIGN PRESS.: 9376 KPAC	RADIOGRAPHY: 100%	MODEL:	
DESIGN TEMP.: 90 DEG. C	PWHT: N/A	LOCATION:	
MDMT: -29 DEG. C	PICKLE & OIL: N/A	LINE TAG:	FUEL GAS OUTLET
C.A.: 1.6 mm	SANDBLAST: SP-6	DRAWING NO.:	070-098
TEST PRESS.: 14064 KPAC	PAINT: WARM GREY	REV.:	0
TEST MEDIA: WOG	INSULATION: N/A		
		DATE	BY
		CHK	APR
		DATE	BY
		CHK	APR
		DATE	BY
		CHK	APR

BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	2	PIPE, SMLS, BW, SCH 80, A106 GR B	1	1.3
2	2	ELBOW, 90 DEG, LR, BW, SCH 80, A234 GR	1	0.9
3	2	FLANGE, RFWN, CL600, SCH 80 BORE, A105N	2	10.9
4	2	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	4	4.0
5	5/8X108	(8) STUD BOLTS W/ NUTS, A193 GR B7M / A194 GR 2HM	4	4.0
6	2	VALVE, SWING CHECK, RF, NACE, CLASS 600	1	31.8
7	2	VALVE, BALL, RP, RF, NACE, CLASS 600	1	20.0
TOTAL FABRICATION WEIGHT				72.7

CUT PIPE LENGTH		SIZE
PIECE NUM	LENGTH (MM)	(INCH)
<A>	163	2



**CADO INDUSTRIES INC.**

7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8  
 TEL: (403) 279-6662; FAX: (403) 279-6687

CUSTOMER: PENNWEST EXPLORATION

UNIT NO.: 2013-070-601

MODEL: 4-WELL SEPARATOR SKID (BU-2000)

LOCATION:

LINE TAG: FUEL GAS OUTLET

DRAWING NO.: 070-09C

REV. 0

PIPE SPEC:	CS	WELD PROC:	CA00-5
DESIGN PRESS:	9376 KPAG	RADIOGRAPHY:	100%
DESIGN TEMP:	-28 DEG. C	PHWT:	N/A
MDMT:	1.6 mm	PICKLE & OIL:	N/A
C.A.:	14064 KPAG	SANDBLAST:	SP-6
TEST PRESS:	WOG	PAINT:	WARM GREY
TEST MEDIA:	WOG	INSULATION:	N/A

PIPING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION.

ISSUED FOR CONSTRUCTION  
 11/10/2013  
 DATE

BY: AP  
 DATE: 11/10/2013

CHK: WC  
 DATE: 11/10/2013

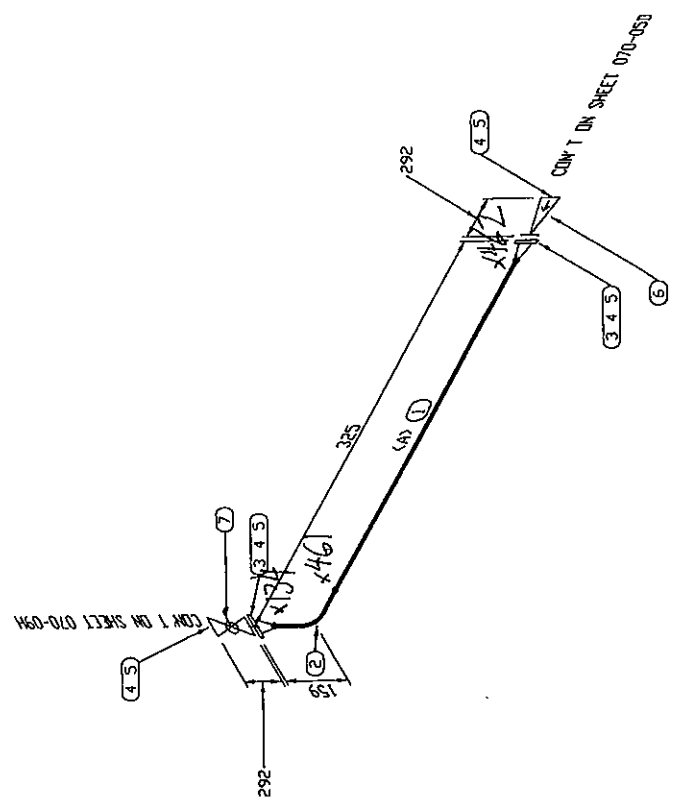
APR: WC  
 DATE: 11/10/2013

NO. 0

BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	2	PIPE, SHLS, BW, SCH. 80, A106 GR. B	163 MM	1.3
2	2	ELBOW, 90 DEG, LR, BW, SCH. 80, A234 GR. WPB	1	0.9
3	2	FLANGE, RFWN, CL600, SCH. 80 BORE, A105N	2	10.9
4	2	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	4	4.0
5	5/8X108	(8) STUD BOLTS 1/2 NUTS, A193 GR. B7M / A194 GR. 2HM	4	4.0
6	2	VALVE, SHING CHECK, RF, NACE, CLASS 600	1	31.8
7	2	VALVE, BALL, RP, RF, NACE, CLASS 600 ASME, A105N	1	20.0
TOTAL FABRICATION WEIGHT				72.7

CUT PIPE LENGTH	PIECE NUM	LENGTH (MM)	SIZE (INCH)
<A>	163	2	



**CADO INDUSTRIES INC.**

7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8  
 TEL: (403) 279-6682; FAX: (403) 279-6687

CUSTOMER: PENNWEST EXPLORATION

UNIT NO.: 2013-070-601

MODEL: 4-WELL SEPARATOR SKID (BU-2000)

LOCATION:

LINE TAG: FUEL GAS OUTLET

DRAWING NO.: 070-090

REV: 0

SPRING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION.

PIPE SPEC.: CS WELD PROC.: CADO-5

DESIGN PRESS.: 9376 KPAG RADIOGRAPHY: 100%

DESIGN TEMP.: 90 DEG. C PWHT: N/A

NDMT: -29 DEG. C PICKLE & OIL: N/A

C-AI: 1.6 mm SANDBLAST: SP-6

TEST PRESS.: 14064 KPAG PAINT: WARM GREY

TEST MEDIA: WOG INSULATION: N/A

ISSUED FOR CONSTRUCTION

REVISION

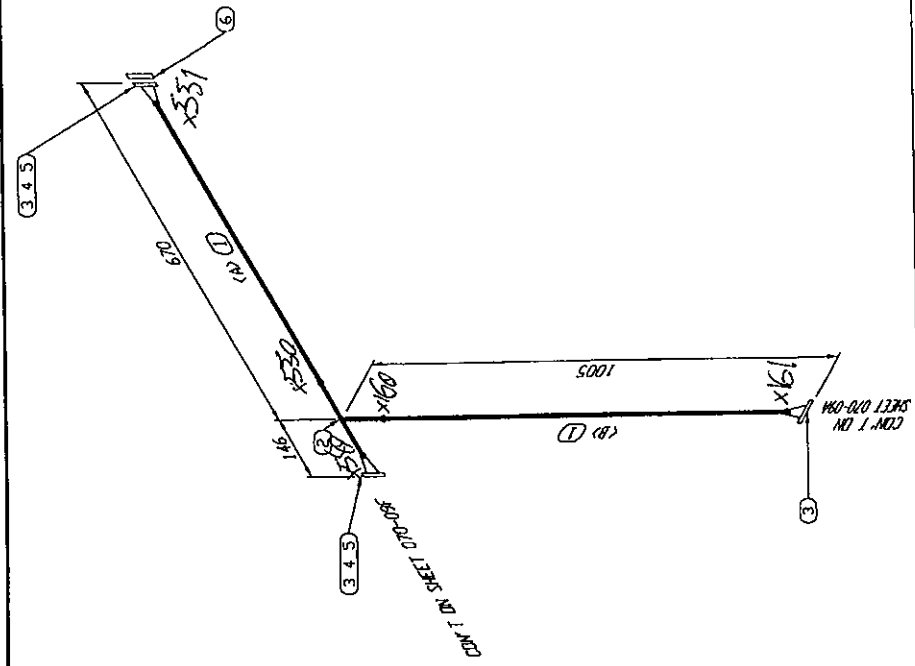
NO. 0

DATE 11/19/2013

BY WC

CHK WC

APR



BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	2	PIPE, SWLS, BV, SCH. 80, A106, GR. B	1376 MM	10.3
2	2X2	TEE, STR, BV, SCH. 80, A234, GR. WPB	1	1.2
3	2	FLANGE, RF, WN, CL600, SCH. 80 BURE, A105N	3	16.4
4	2	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	2	2.0
5	5/8X108	(B) STUD BOLTS W/ NUTS, A193 GR B7N / A194 GR 2HM	2	2.0
6	2	FLANGE, RF, BLIND, CL600, A105N	1	4.5
TOTAL FABRICATION WEIGHT				36.3

PIECE NUM	LENGTH (MM)	SIZE (INCH)
<A>	521	2
<B>	855	2

PIPING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION. PIPE SPEC.: CS WELD PROC.: CADO-5 DESIGN PRESS.: 9376 KPAG RADIOGRAPHY: 100% DESIGN TEMP.: 90 DEG. C PHRT: N/A ADMIT: -29 DEG. C PICKLE & OIL: N/A C.A.: 1.6 mm SANDBLAST: SP-6 TEST PRESS.: 14064 KPAG PAINT: WARM GREY TEST MEDIA: WOG INSULATION: N/A		CADO INDUSTRIES INC. 7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8 TEL: (403) 279-6662; FAX: (403) 279-6687		CUSTOMER: PENNWEST EXPLORATION UNIT NO.: 2013-070-601 MODEL: 4-WELL SEPARATOR SKID (BU-2000) LOCATION: LINE TAG: FUEL GAS OUTLET DRAWING NO.: 070-09E	
NO.	NO.	DATE	BY	CHK	APR
0	0	11/10/2013	AP	WC	WC
ISSUED FOR CONSTRUCTION REVISION					
REV. 0					

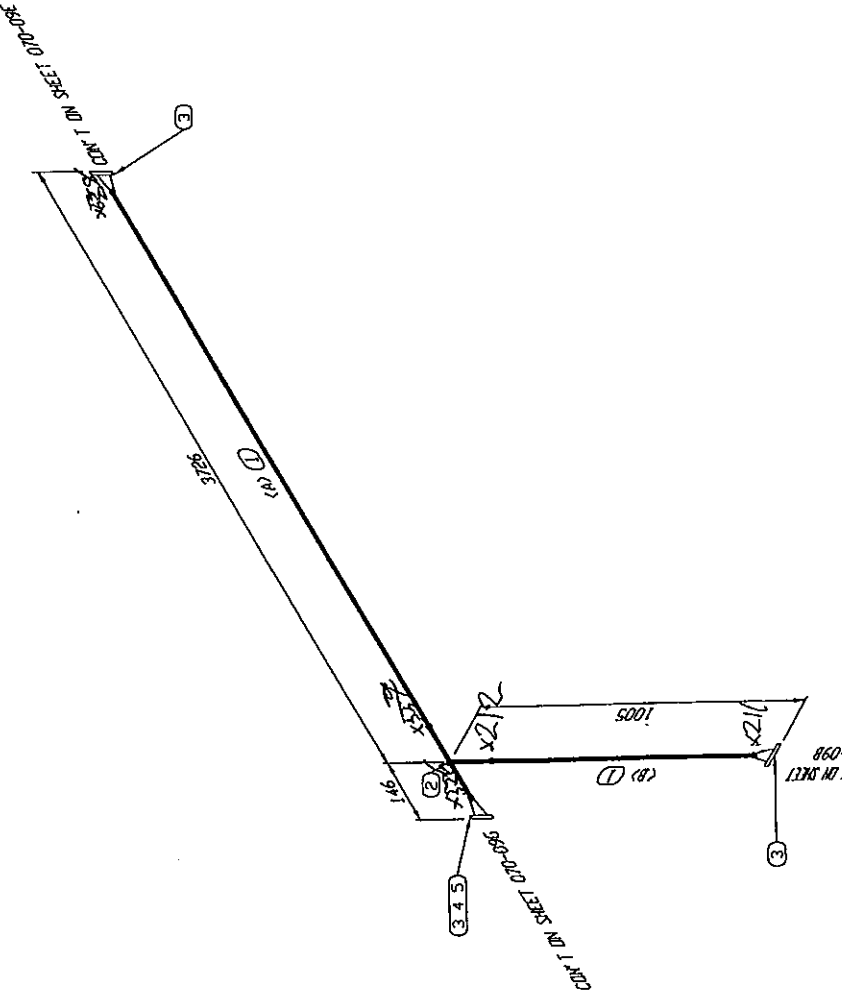
**BILL OF MATERIAL**

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	2	PIPE, SMLS, BW, SCH 80, A106 GR B	4431	33.1
2	2x2	TEE, STR, BW, SCH 80, A234 GR WPB	1	1.2
3	2	FLANGE, RFWN, CL600, SCH 80 BORE, A10SK	3	16.4
4	2	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	1	1.0
5	5/8x108	(8) STUD BOLTS V/ NUTS, A193 GR B7M / A194 GR 2HM	1	1.0

TOTAL FABRICATION WEIGHT

52.6

CUT PIPE LENGTH		SIZE
PIECE NUM	LENGTH (MM)	( INCH)
<A>	3576	2
<B>	855	2



**CADO INDUSTRIES INC.**

7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8  
 TEL: (403) 279-6662; FAX: (403) 279-6687

CUSTOMER: PENNWEST EXPLORATION

UNIT NO.: 2013-070-601

MODEL: 4-WELL SEPARATOR SKID (BU-2000)

LOCATION:

LINE TAG: FUEL GAS OUTLET

DRAWING NO.: 070-09F

REV. 0

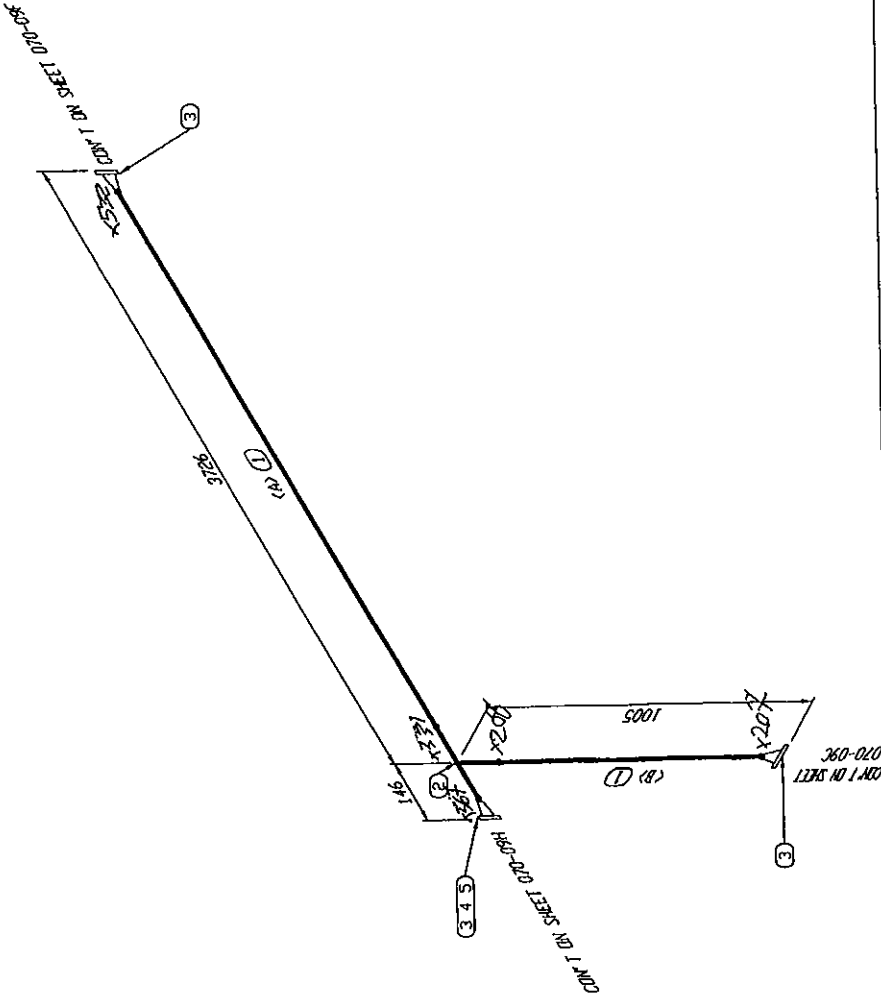
DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION,	WELD PROC.: CADO-5
PIPE SPEC.: CS	RADIOGRAPHY: 100%
DESIGN PRESS.: 9376 KPAC	PAINT: WARM GREY
DESIGN TEMP.: 90 DEG. C	INSULATION: N/A
DMNT: -29 DEG. C	
C.A.: 1.6 mm	
TEST PRESS.: 14064 KPAC	
TEST MEDIA: WOG	

NO.	REVISION	DATE	BY	CHK	APR
0	ISSUED FOR CONSTRUCTION	11/10/2013	AP	WC	WC

BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	2	PIPE, SHLS, BV, SCH. 80, A106 GR B	4431 MM	33.1
2	2X2	TEE, STR, BV, SCH. 80, A234 GR WPB	1	1.2
3	2	FLANGE, RFWN, CL600, SCH. 80 BORE, A105N	3	16.4
4	2	GASKET, CL600, SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	1	1.0
5	5/8X108	(8) STUD BOLTS V/ NUTS, A193 GR 37M / A194 GR 2HM	1	1.0
TOTAL FABRICATION WEIGHT				52.6

CUT PIPE LENGTH		
PIECE NUM	LENGTH (MM)	SIZE (INCH)
<A>	3576	2
<B>	855	2

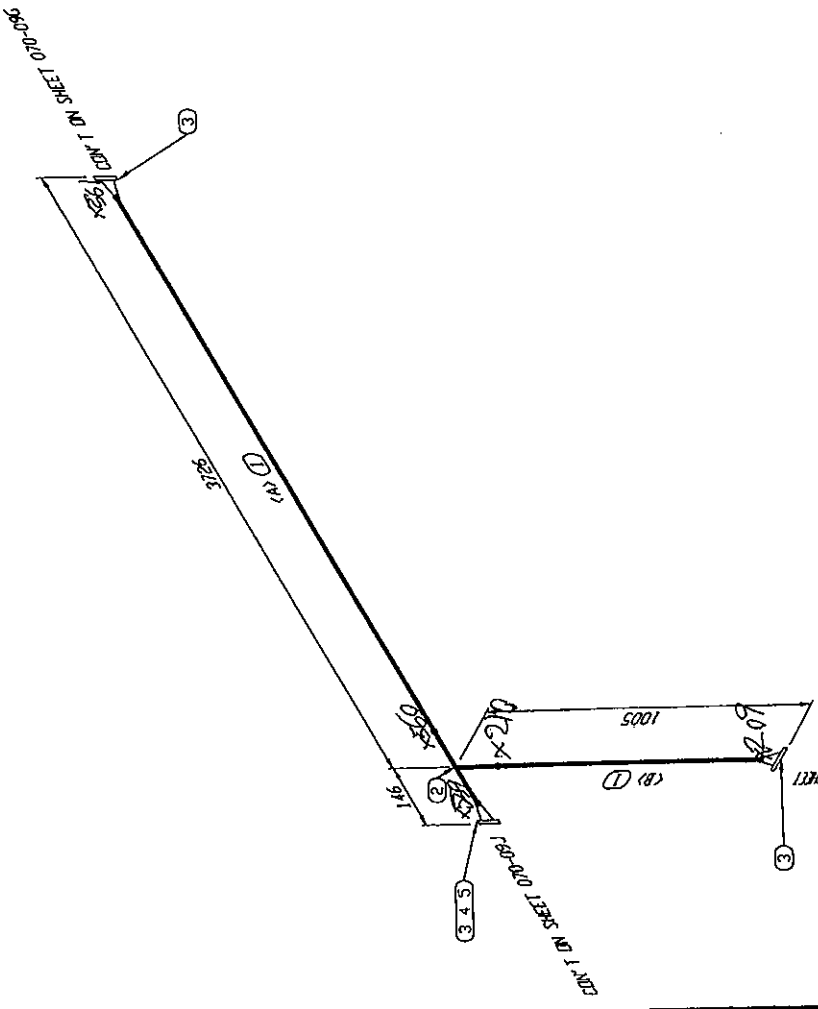


PIPING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION. PIPE SPEC.: CS WELD PROC.: CADO-5 DESIGN PRESS.: 9376 KPAG RADIOGRAPHY: 100% DESIGN TEMP.: 90 DEG. C PWHT: N/A MDMT: -29 DEG. C PICKLE & OIL: N/A C.A.: 1.6 mm SANDBLAST: SP-6 TEST PRESS.: 14064 KPAG PAINT: WARM GREY TEST MEDIA: HOG INSULATION: N/A		CADO INDUSTRIES INC. 7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8 TEL: (403) 279-6662; FAX: (403) 279-6687		CUSTOMER: PENNWEST EXPLORATION UNIT NO.: 2013-070-601 MODEL: 4-WELL SEPARATOR SKID (BU-2000) LOCATION: LINE TAG: FUEL GAS OUTLET DRAWING NO.: 070-098 REV. 0	
NO.	REVISION	DATE	BY	CHK	APR
0	ISSUED FOR CONSTRUCTION	11/09/2013	AP	WC	WC

BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	2	PIPE, SMLS, BV, SCH. 80, A106 GR B	4431 MM	33.1
2	2X2	TEE, STR, BV, SCH. 80, A234 GR VPB	1	1.2
3	2	FLANGE, RFVN, CL600, SCH. 80 BDRF, A105N	3	16.4
4	2	GASKET, CL600, SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	1	1.0
5	5/8X108	(8) STUD BOLTS 1/2 NUTS, A193 GR B7M / A194 GR 2HM	1	1.0
TOTAL FABRICATION WEIGHT				52.6

CUT PIPE LENGTH		SIZE
PIECE NUM	LENGTH (MM)	(INCH)
(A)	3576	2
(B)	855	2



CADO INDUSTRIES INC.		CUSTOMER: PENNWEST EXPLORATION	
7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8		UNIT NO.:	2013-070-601
TEL: (403) 279-6662; FAX: (403) 279-6687		MODEL:	4-WELL SEPARATOR SKID (BU-2000)
		LOCATION:	
		LINE TAG:	FUEL GAS OUTLET
		DRAWING NO.:	070-09H
		REV:	0

NO.	REVISION	DATE	BY	CHK	APR
0	ISSUED FOR CONSTRUCTION	11/10/2013	RP	WC	WC

TEST MEDIA:	WOG	INSULATION:	N/A
PAINT:	WARM GREY		
SANDBLAST:	SP-6		
PICKLE & OIL:	N/A		
PHRT:	N/A		
RADIOGRAPHY:	100%		
WELD PROC:	C400-5		

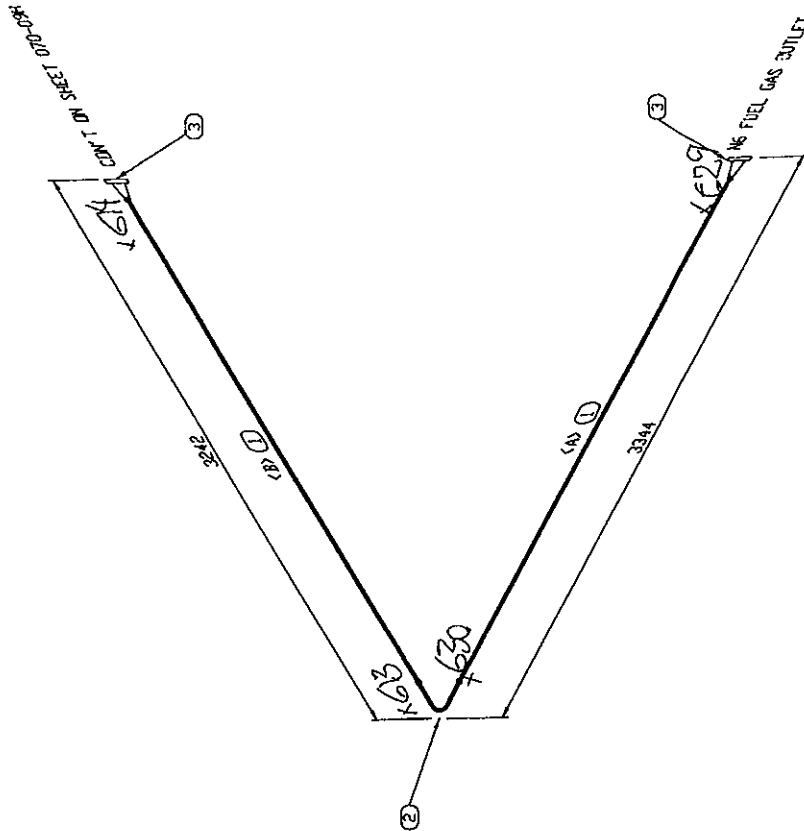
  

PIPING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION.	
PIPE SPEC.:	CS
DESIGN PRESS.:	9376 KPAC
DESIGN TEMP.:	90 DEG. C
ADMIT.:	-29 DEG. C
C.A.:	1.6 mm
TEST PRESS.:	14064 KPAC
TEST MEDIA:	WOG

BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	2	PIPE, SMLS, BW, SCH. 80, A106 GR. B	6262 MM	46.8
2	2	ELBOW, 90 DEG, LR, BW, SCH. 80, A234 GR	1	0.9
3	2	FLANGE, RFWN, CL600, SCH. 80 BORE, A105N	2	10.9
TOTAL FABRICATION WEIGHT				58.6

CUT PIPE LENGTH PIECE NUM	LENGTH (MM)	SIZE (INCH)
(A)	3182	2
(B)	3080	2



PIPING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION.		CADO INDUSTRIES INC.		CUSTOMER: PENNWEST EXPLORATION	
PIPE SPEC:	CS	WELD PROC:	CADO-5	UNIT NO.:	2013-070-601
DESIGN PRESS:	9376 KPAG	RADIOGRAPHY:	100%	MODEL:	4-WELL SEPARATOR SKID (BU-2000)
DESIGN TEMP.:	90 DEG. C	PWHT:	N/A	LOCATION:	
DMT:	-29 DEG. C	PICKLE & OIL:	N/A	LINE TAG:	FUEL GAS OUTLET
C.A.:	1.6 mm	SANDBLAST:	SP-6	DRAWING NO.:	070-09J
TEST PRESS:	14084 KPAG	PAINT:	WARM GREY	REV.	0
TEST MEDIA:	WOG	INSULATION:	N/A		
		ISSUED FOR CONSTRUCTION	0	DATE	11/10/2013
		REVISION		BY	AP
				CHK	WC
				APR	WC

7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8  
 TEL: (403) 279-6682; FAX: (403) 279-6687

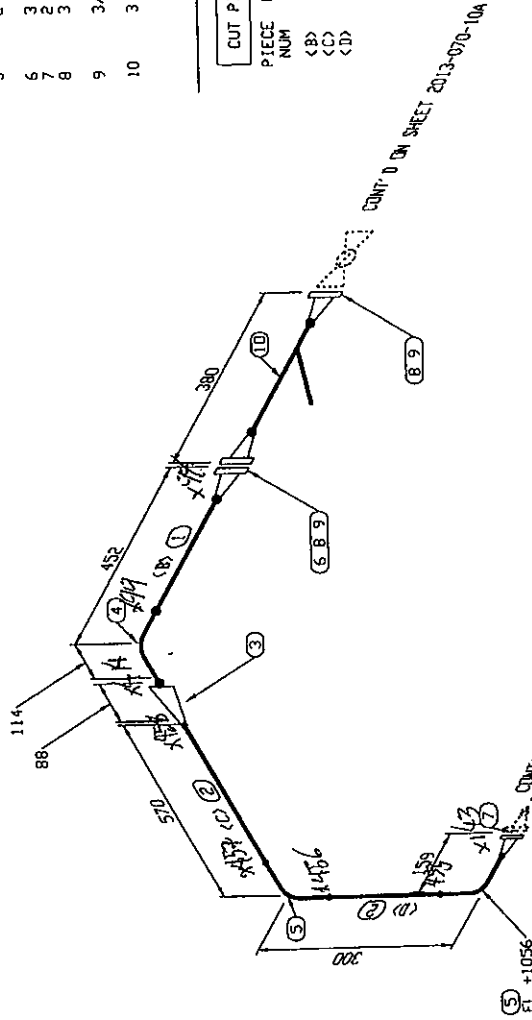




BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	3	PIPE, SMLS, BV, SCH. 80, A106 GR B	438 MM	5.0
2	2	PIPE, SMLS, BV, SCH. 80, A106 GR B	631 MM	4.8
3	3x2	REDUCER, CONC, BV, SCH. 80, A234 GR WPB	1	0.9
4	3	ELBOW, 90 DEG, LR, BV, SCH. 80, A234 GR WPB	1	2.1
5	2	ELBOW, 90 DEG, LR, BV, SCH. 80, A234 GR WPB	2	1.8
6	3	FLANGE, RFVN, CL600, SCH. 80 BORE, A105N	1	31.3
7	2	FLANGE, RFVN, CL600, SCH. 80 BORE, A105N	1	5.5
8	3	GASKET, CL600, SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	2	2.0
9	3/4x127	(B) STUB BOLTS W/ NUTS, A193 GR B7M / A194 GR 2HM	2	2.0
10	3	Y-STRAINER	1	
TOTAL FABRICATION WEIGHT				55.0

CUT PIPE LENGTH		
PIECE NUM	LENGTH (MM)	SIZE (INCH)
<B>	242	3
<C>	490	2
<D>	141	2



CONT'D ON SHEET 2013-070-10a

CONT'D ON SHEET 2013-070-10c

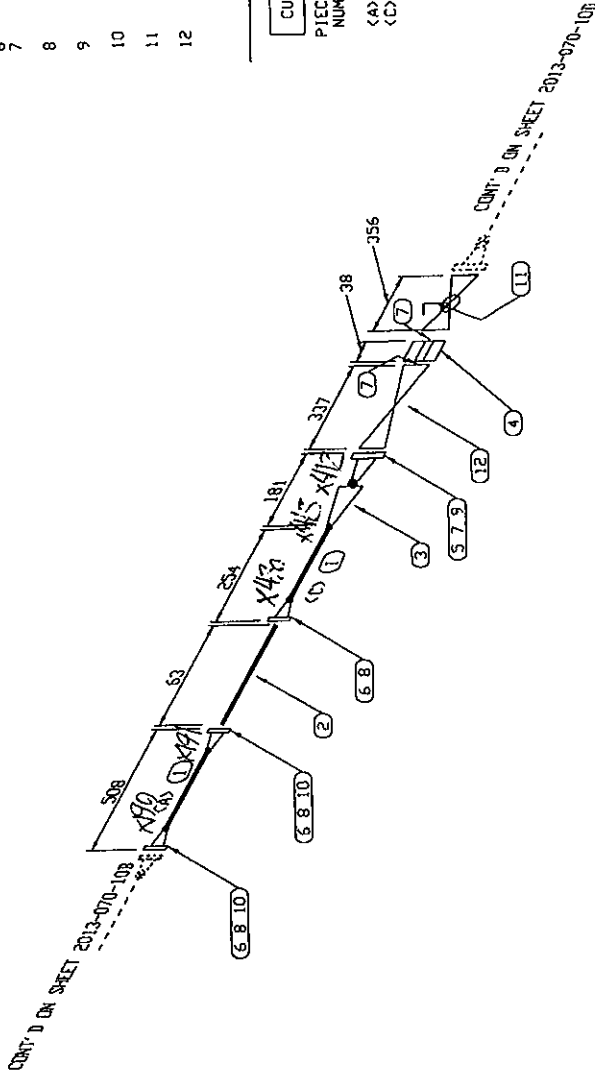
CADO INDUSTRIES INC.		PENNWEST EXPLORATION	
7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8		2013-070-601	
TEL: (403) 279-6662; FAX: (403) 279-6687		4-WELL SEPARATOR SKID (BU-2000)	
CUST: CADO-5		LOC: V-2100 CONDENSATE OUTLET	
DESIGN PROC: 100%		REV: 0	
DESIGN PRESS: 9375 KPA		DATE: 11/09/2013	
DESIGN TEMP: 90 DEG. C		BY: CHK	
MATERIAL: 9375 KPA		APR	
PICKLE & OIL: N/A		WC	
SANDBLAST: SP-6		WC	
PAINT: WARM GREY		APR	
INSULATION: N/A		APR	
TEST MEDIA: H2O		APR	
TEST PRESS: 14064 KPA		APR	
TEST TEMP: 1.6 mm		APR	
TEST PRESS: 14064 KPA		APR	
TEST MEDIA: H2O		APR	

BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	2	PIPE, SMLS, BW, SCH 80, A106 GR B	514 MM	3.9
2	2	TURBINE METER	1	0.9
3	3X2	REDUCER, CONC, BV, SCH 80, A234 GR WPB	1	1.0
4	3	BLEED RING, RF, 600#, RF, 21mm HOLE	1	10.5
5	3	FLANGE, RFWN, CL600, SCH 80 BORE, A105N	3	16.4
6	2	FLANGE, RFWN, CL600, SCH 80 BORE, A105N	3	3.0
7	3	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	3	3.0
8	2	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	1	1.0
9	3/4X127	(8) STUD BOLTS V/ NUTS, A193 GR B7M / A194 GR 2HM	2	2.0
10	5/8X108	(8) STUD BOLTS V/ NUTS, A193 GR B7M / A194 GR 2HM	1	38.5
11	3	VALVE, BALL, RP, RF, NACE, CLASS 600 ASME, A105N	1	1.0
12	3	CONTROL VALVE, FISHER ET, 600LB FLG, RF	1	81.5

TOTAL FABRICATION WEIGHT

PIECE NUM	CUT PIPE LENGTH (MM)	SIZE (INCH)
(A)	343	2
(C)	171	2



CADO INDUSTRIES INC.		PENNWEST EXPLORATION	
7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8		UNIT NO.: 2013-070-601	
TEL: (403) 279-6662; FAX: (403) 279-6667		MODEL: 4-WELL SEPARATOR SKID (BU-2000)	
ISSUED FOR CONSTRUCTION		LOCATION:	
DATE: 11/10/2013	BY: AP	LINE TAG: V-2100 CONDENSATE OUTLET	
NO. 0	REVISION: WASH GREY	DRAWING NO.: 070-10C	
INSULATION: N/A	TEST MEDIA: WOG	REV. 0	

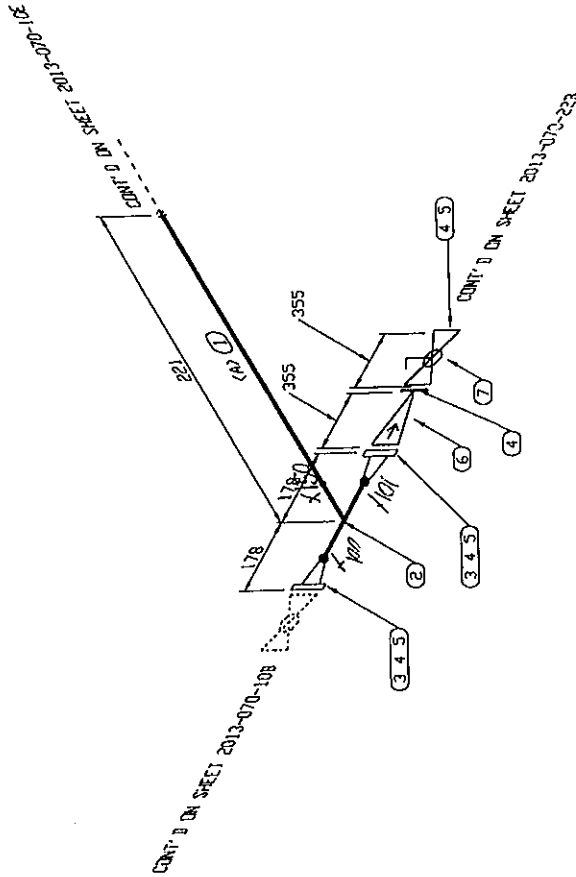
PIPE SPEC.: CS	WELD PROC.: CADO-5
DESIGN PRESS.: 9376 KPAG	RADIOGRAPHY: 100%
DESIGN TEMP.: 90 DEG. C	PHWT: N/A
MONTE: -29 DEG. C	PICKLE & OIL: N/A
C.A.: 1.6 mm	SANDBLAST: SP-6
TEST PRESS.: 14064 KPAG	PANT: WASH GREY
TEST MEDIA: WOG	INSULATION: N/A

PIPING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION.

BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1		PIPE, SMLS, BV, SCH 80, A106 GR B	141 MM	1.1
2	3X2	TEE, RED, BV, SCH 80, A234 GR WPB	1	2.2
3	3	FLANGE, RF/WN, CL600, SCH 80 BDR, A105N	2	20.9
4	3	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	4	4.0
5	3/4X127	(B) STUD BOLTS W/ NUTS, A193 GR B7M / A194 GR 2HM	3	3.0
6	3	VALVE, SWING CHECK, RF, NACE, CLASS 600 ASME, A105N	1	61.3
7	3	VALVE, BALL, RF, NACE, CLASS 600 ASME, A105N	1	38.6
TOTAL FABRICATION WEIGHT				130.8

CUT PIPE LENGTH	SIZE
PIECE LENGTH	( INCH
NUM	( MM)
(A) 141	2



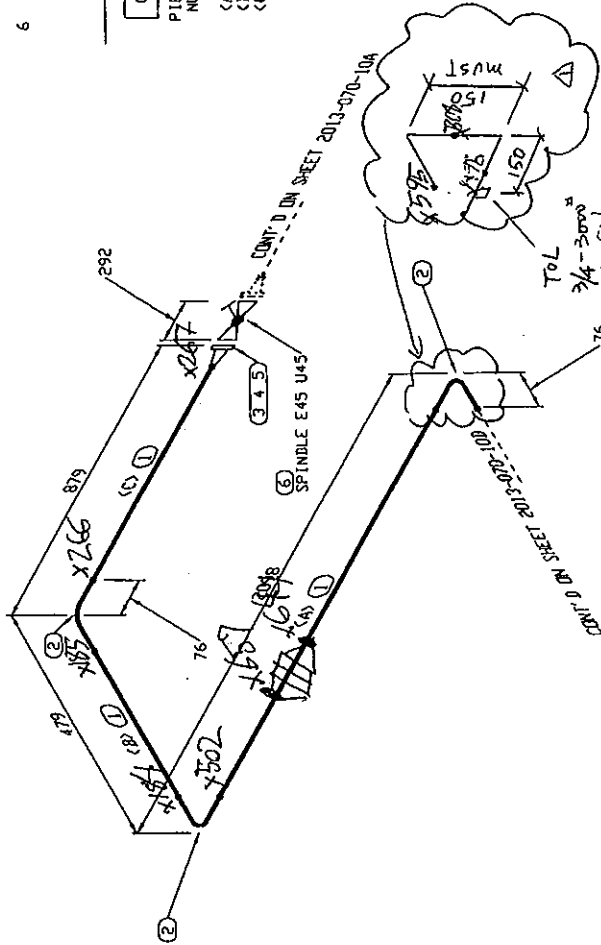
CADO INDUSTRIES INC.		CUSTOMER: PENNWEST EXPLORATION	
7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8		UNIT NO.:	2013-070-601
TEL: (403) 279-6662; FAX: (403) 279-6697		MODEL:	4-WELL SEPARATOR SKID (BU-2000)
		LOCATION:	
		LINE TAG:	V-2100 CONDENSATE OUTLET
		SPAWING NO.:	270-100
		REV.:	0
PIPING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION.	WELD PROC.:	CADO-5	
PIPE SPEC.:	RADIOGRAPHY:	100%	
DESIGN PRESS.: 9376 KPAC	PWHT:	N/A	
DESIGN TEMP.: 90 DEG. C	PICKLE & OIL:	N/A	
WOMI:	SANDBLAST:	SP-6	
C.A.:	PAINT:	WARRU GREY	
TEST PRESS.: 14064 KPAC	INSULATION:	N/A	
TEST MEDIA:	WGS		
ISSUED FOR CONSTRUCTION	NO.		
DATE	BY	CHK	APP
11/19/2013	AP	WC	WC
REVISION			

**BILL OF MATERIAL**

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	2	PIPE, SMLS, BV, SCH. 80, A106 GR B	2976 MM	22.0
2	2	ELBOW, 90 DEG, LR, BV, SCH. 80, A234 GR WPB	3	2.7
3	2	FLANGE, RFWN, CL600, SCH. 80 BORE, A105N	1	5.5
4	2	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	1	1.0
5	5/8x108	(8) STUD BOLTS W/ NUTS, A193 GR B7H / A194 GR 2RH	1	1.0
6	2	VALVE, GLOBE, RF, NACE, CLASS 600, ASME, A105N	1	40.9

TOTAL FABRICATION WEIGHT 72.8

PIECE NUM	CUT PIPE LENGTH (MM)	SIZE (INCH)
(A)	1939	2
(B)	320	2
(C)	717	2



CADO INDUSTRIES INC.		PENNWEST EXPLORATION	
7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8		CUSTOMER:	2013-070-601
TEL: (403) 279-6882; FAX: (403) 279-6687		UNIT NO.:	4--WELL SEPARATOR SKID (BU-2000)
		MODEL:	LOCATION:
			LINE TAG: V-2100 CONDENSATE OUTLET
			DRAWING NO.: 070-10E
			REV. 0
PIPING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION. WELD PROC.: CADO-5 RADIOGRAPHY: 100% PWHT: N/A PICKLE & OIL: N/A SANDBLAST: SP-6 PAINT: WARM GREY INSULATION: N/A TEST MEDIA: WOC		DATE: 11/03/2013 BY: WC CHK: WC APP: WC	REVISION: 0 DATE: 11/03/2013 BY: WC CHK: WC APP: WC

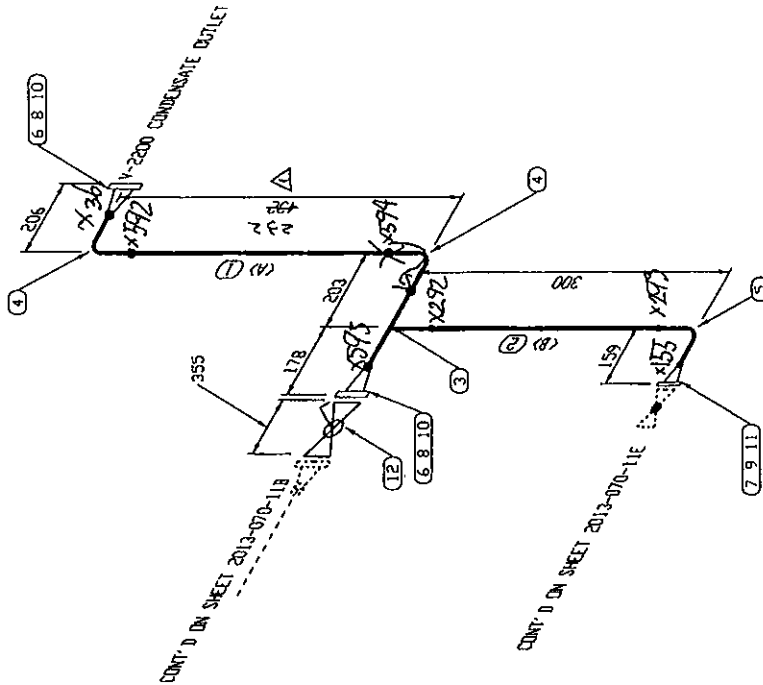
BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	3	PIPE, SMLS, BV, SCH 80, A106 GR B	197 MM	2.3
2	3	PIPE, SMLS, BM, SCH 80, A106 GR B	141 MM	1.1
3	3x2	TEE, RED, BV, SCH 80, A234 GR 4PB	1	2.2
4	3	ELBOW, 90 DEG, LR, BV, SCH 80, A234 GR 4PB	2	4.1
5	2	ELBOW, 90 DEG, LR, BV, SCH 80, A234 GR 4PB	1	0.9
6	3	FLANGE, RFVN, CL600, SCH 80 BORE, A105N	2	20.9
7	2	FLANGE, RFVN, CL600, SCH 80 BORE, A105N	1	5.5
8	3	GASKET, CL600, SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	2	2.0
9	2	GASKET, CL600, SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	1	1.0
10	3/4X127	(8) STUD BOLTS W/ NUTS, A193 GR B7M /	2	2.0
11	5/8X108	(8) STUD BOLTS W/ NUTS, A193 GR B7M /	1	1.0
12	3	VALVE, BALL, RP, RF, NACE, CLASS 600 ASME, A105N	1	38.6

TOTAL FABRICATION WEIGHT

81.2

CUT PIPE LENGTH	PIECE NUM	LENGTH (MM)	SIZE (INCH)
	<A>	497	Ø
	<B>	141	2

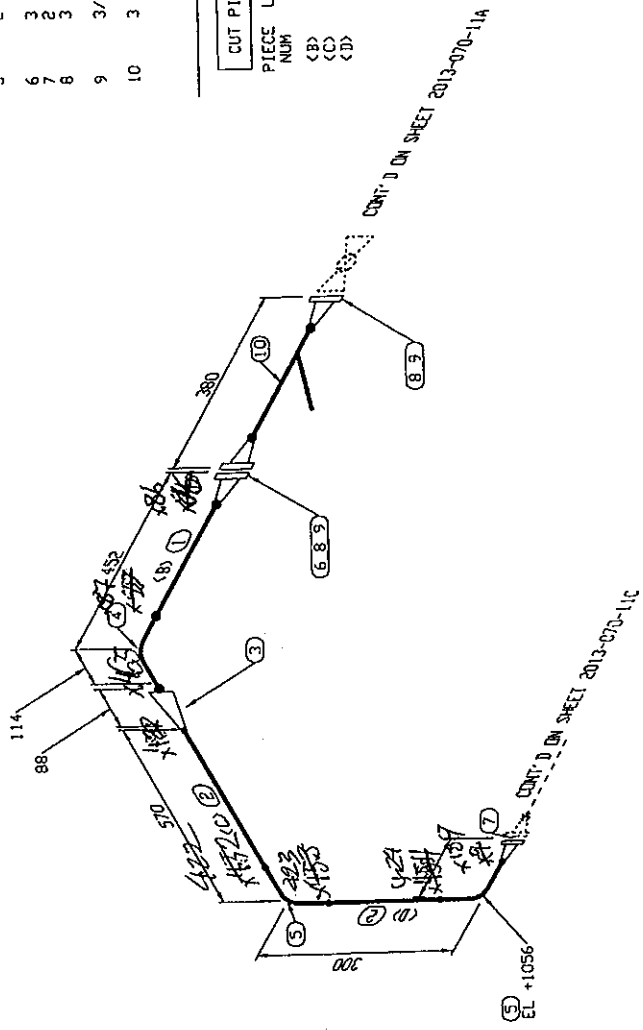


CADO INDUSTRIES INC.		PENNWEST EXPLORATION	
7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8		CUSTOMER:	
TEL: (403) 279-6662; FAX: (403) 279-6667		UNIT NO.: 2013-070-601	
		MODEL: 4-WELL SEPARATOR SKID (8U-2000)	
		LOCATION:	
		LINE TAG: V-2200 CONDENSATE OUTLET	
		DRAWING NO.: 070-11A	
		REV: 0	
PIPING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION.			
PIPE SPEC.: CS	WELD PROC.: C400-5		
DESIGN PRESS.: 9376 KPAC	RADIOGRAPHY: 100%		
DESIGN TEMP.: 90 DEG. C	PHWT: N/A		
MINI: -29 DEG. C	PICKLE & OIL: N/A		
C.A.: 1.6 mm	SANDBLAST: SP-6		
TEST PRESS.: 14064 KPAC	PAINT: WARM GREY		
TEST MEDIA: WOC	INSULATION: N/A		
	NO.	DATE	BY
		11/10/2013	AP
			WC
			WC
			CHK
			APR

BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	3	PIPE, SMLS, BW, SCH. 80, A106 GR B	438 MM	5.0
2	2	PIPE, SMLS, BW, SCH. 80, A106 GR B	631 MM	4.8
3	3X2	REDUCER, CONC, BW, SCH. 80, A234 GR WPB	1	0.9
4	3	ELBOW, 90 DEG, LR, BW, SCH. 80, A234 GR WPB	1	2.1
5	2	ELBOW, 90 DEG, LR, BW, SCH. 80, A234 GR WPB	2	1.8
6	3	FLANGE, RFVN, CL600, SCH. 80 SDRE, A105N	1	31.3
7	3	FLANGE, RFVN, CL600, SCH. 80 SDRE, A105N	1	5.5
8	3	GASKET, CL600 SPIRAL WOUND, 315 SS / FLEXIBLE GRAPHITE	2	2.0
9	3/4X127	(8) STUD BOLTS W/ NUTS, A193 GR 37M / A194 GR 2HM	2	2.0
10	3	Y-STRAINER	1	
TOTAL FABRICATION WEIGHT				55.0

CUT PIPE LENGTH		
PIECE NUM	LENGTH (MM)	SIZE (INCH)
(B)	242	3
(C)	490	2
(D)	141	2

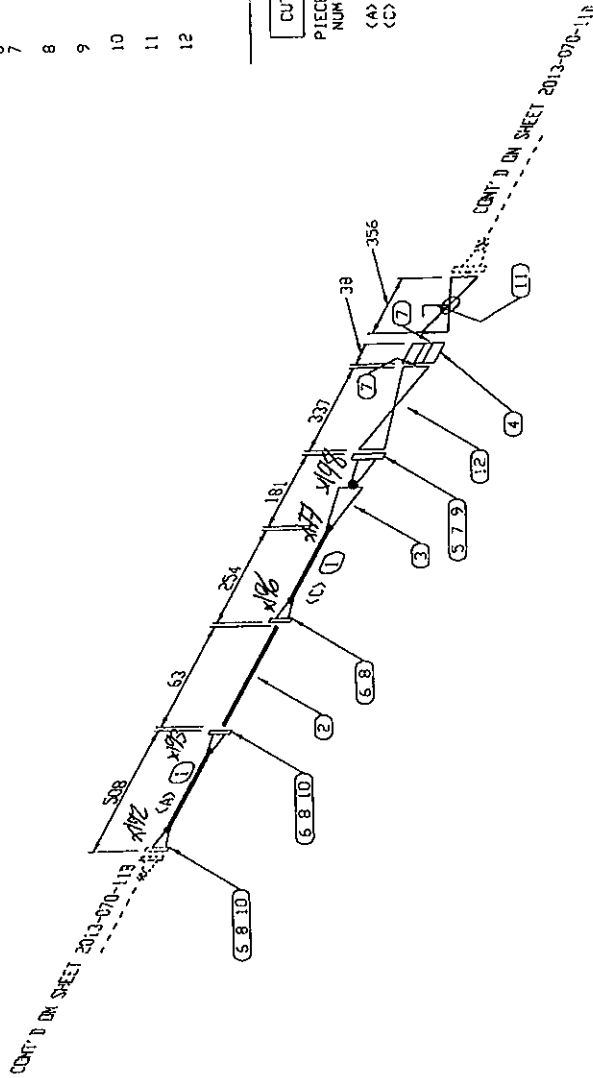


CADO INDUSTRIES INC.		PENNWEST EXPLORATION	
7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8		UNIT NO.: 2013-070-601	
TEL: (403) 279-6662, FAX: (403) 279-6687		MODEL: 4-WELL SEPARATOR SKID (BU-2000)	
ISSUED FOR CONSTRUCTION		LOCATION:	
DATE: 11/10/2013	BY: AP	LINE TAG: Y-2200 CONDENSATE OUTLET	
NO.:	REVISION:	DRAWING NO.: 070-113	
NO.:	REVISION:	REV. 0	
PIPE SPEC.: CS	WELD PROC.: CADO-5	CUSTOMER:	
DESIGN PRESS.: 9376 KPA G	RADIOGRAPHY: 100%	UNIT NO.:	
DESIGN TEMP.: 90 DEG. C	PAINT: N/A	MODEL:	
DMT: -29 DEG. C	PICKLE & OIL: N/A	LOCATION:	
C.A.: 1.5 mm	SANDBLAST: SP-6	LINE TAG:	
TEST PRESS.: 14084 KPA G	PAINT: WASH GREY	DRAWING NO.:	
TEST MEDIA: W22	INSULATION: N/A	REV. 0	

BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	2	PIPE, SMLS. BV, SCH. 80, A106 GR B	5.4 MM	3.9
2	2	TURBINE METER	1	0.5
3	3x2	REDUCER, CONC. BV, SCH. 80, A234 GR WPB	1	0.9
4	3	BLEED RING, RF, 600#, 21mm HOLE	1	1.0
5	3	FLANGE, RFMN, CL600, SCH. 80 BDR, A105N	1	10.5
6	2	FLANGE, RFMN, CL600, SCH. 80 BDR, A105N	3	16.4
7	3	GASKET, CL600 SPIRAL WOUND, 315 SS / FLEXIBLE GRAPHITE	3	3.0
8	2	GASKET, CL600 SPIRAL WOUND, 315 SS / FLEXIBLE GRAPHITE	3	3.0
9	3/4x127	(8) STUD BOLTS W/ NUTS, A193 GR B7M / A194 GR 2HM	1	1.0
10	5/8x108	(8) STUD BOLTS W/ NUTS, A193 GR B7M / A194 GR 2HM	2	2.0
11	3	VALVE, BALL, RP, RF, NACE, CLASS 600 ASME, A105N	1	38.6
12	3	CONTROL VALVE, FISHER ET. 600LB FLG. RF	1	1.0
TOTAL FABRICATION WEIGHT				81.5

PIECE NUM	CUT PIPE LENGTH (MM)	SIZE (INCH)
(A)	343	2
(C)	171	2



**CADO INDUSTRIES INC.**

7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8  
 TEL: (403) 279-6682; FAX: (403) 279-6687

CUSTOMER: PENNWEST EXPLORATION

UNIT NO.: 2013-070-601

MODEL: 4-WELL SEPARATOR SKID (BU-2000)

LOCATION:

LINE TAG: V-2200 CONDENSATE OUTLET

ISSUE NO.: 070-110

REV: 0

PIPING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION.

PIPE SPEC:	CS	WELD PROC:	CADO-S
DESIGN PRESS:	9375 KPA	RADIOGRAPHY:	100%
DESIGN TEMP:	90 DEG. C	PAINT:	N/A
NDMT:	-23 DEG. C	PICKLE & OIL:	N/A
C.A.:	1.6 mm	SANDBLAST:	SP-6
TEST PRESS:	14,561 KPA	PAINT:	WARM GREY
TEST MEDIA:	WCG	INSULATION:	N/A

DATE: 11/03/2011

BY: AP

WC

A2

REV: 0

ISSUED FOR CONSTRUCTION

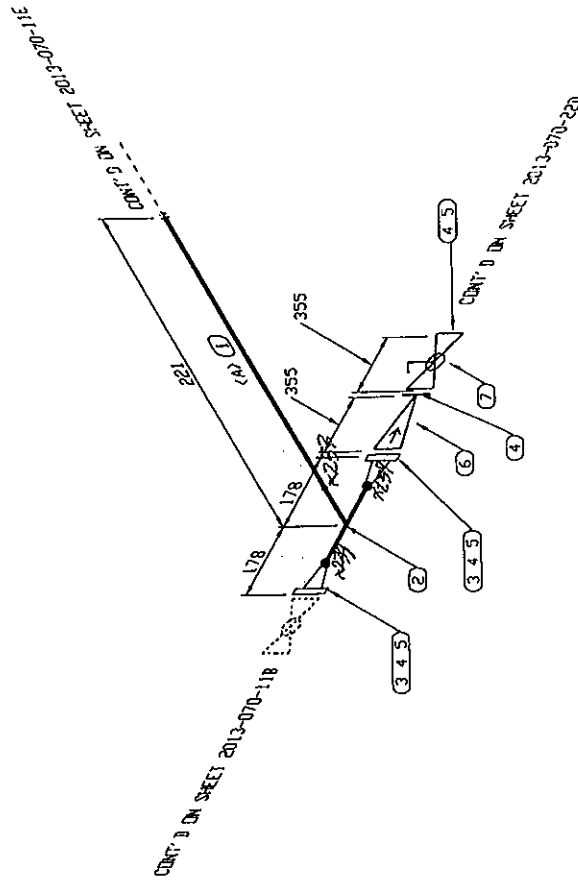
REASON:



BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	2	PIPE, SMLS, BW, SCH 80, A106 GR B	141 MM	1.1
2	3X2	TEE, RED, BW, SCH 80, A234 GR WPB	1	2.2
3	3	FLANGE, RF'WN, CL600, SCH 80 BORE, A105N	2	20.5
4	3	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	4	4.0
5	3/4X127	(8) STUD BOLTS V/ NUTS, A193 GR B7M / A194 GR 2HM	3	3.0
6	3	VALVE, SVING CHECK, RF, NACE, CLASS 600 ASME, A105N	1	61.3
7	3	VALVE, BALL RP, RF, NACE, CLASS 600 ASME, A105N	1	38.6
TOTAL FABRICATION WEIGHT				130.8

CUT PIPE LENGTH		SIZE
PIECE NUM	LENGTH (MM)	(INCH)
(A)	141	2



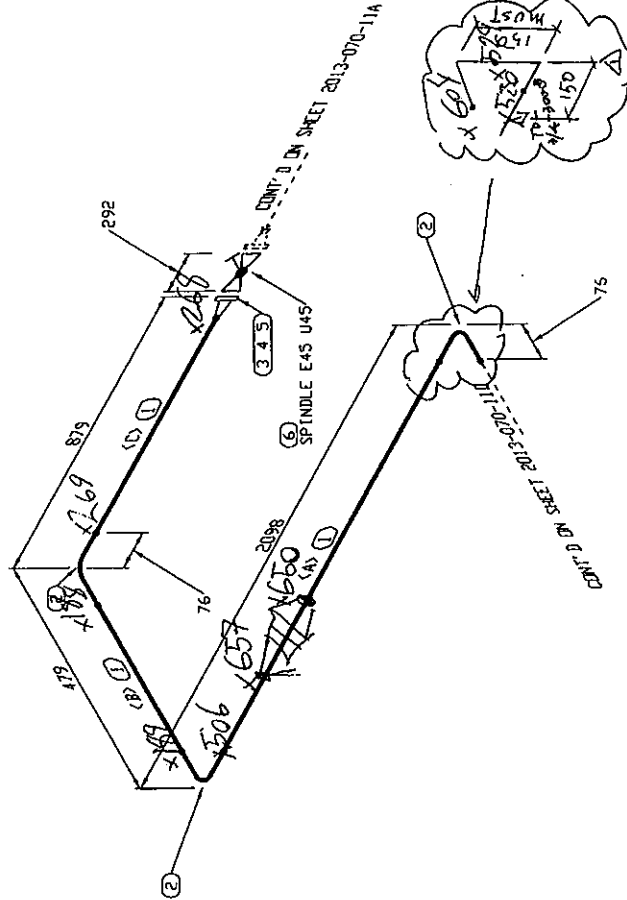
CADO INDUSTRIES INC.		PENNWEST EXPLORATION	
7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8			
TEL: (403) 279-6662; FAX: (403) 279-6667			
DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION,	WELD PROC.: CADO-5	UNIT NO.:	2013-070-601
PIPE SPEC.: CS	RADIOGRAPHY: 100%	MODEL:	4-WELL SEPARATOR SKID (BU-2000)
DESIGN PRESS.: 9376 KPAG	PAINT: N/A	LOCATION:	
DESIGN TEMP.: 90 DEG. C	PICKLE & OIL: N/A	LINE TAG:	V-2200 CONDENSATE OUTLET
ADMIN: -29 DEG. C	SANDBLAST: SP-6	DRAWING NO.:	070-110
C.A.: 1.6 mm	PAINT: WARM GREY	REV:	0
TEST PRESS.: 14054 KPAG	INSULATION: N/A		
TEST MEDIA: H2O			

DATE	BY	CHK	APP
11/19/2013	AP	MC	MC

BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	2	PIPE, SMLS, BV, SCH. 80, A106 GR B	2976 MM	22.0
2	2	ELBOW, 90 DEG, L.R. BV, SCH. 80, A234 GR	3	2.7
3	2	FLANGE, RFVN, CL600, SCH. 80 BORE, A105N	1	5.5
4	2	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	1	1.0
5	5/8X108	(8) STUD BOLTS W/ NUTS, A193 GR B7M / A194 GR 2HM	1	1.0
6	2	VALVE GLOBE, RF, NACE, CLASS 600, ASME, A105N	1	40.9
TOTAL FABRICATION WEIGHT:				72.8

PIECE NUM	CUT PIPE LENGTH (MM)	SIZE (INCH)
(A)	1939	2
(B)	320	2
(C)	717	2

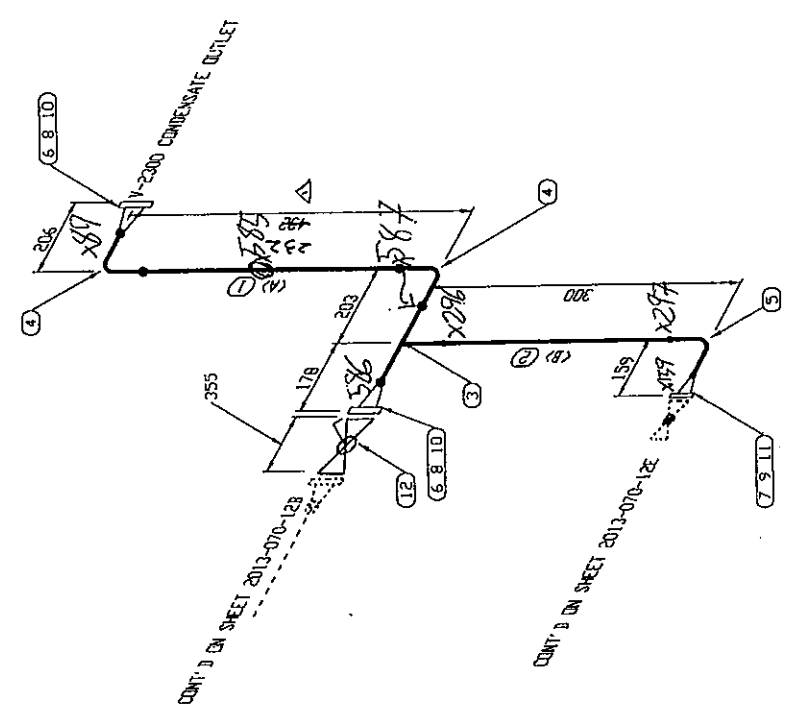


CADO INDUSTRIES INC.		CUSTOMER: PENNWEST EXPLORATION	
7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8		UNIT NO.: 2013-070-601	
TEL: (403) 279-6682; FAX: (403) 279-6687		MODEL: 4-WELL SEPARATOR SKID (BU-2000)	
ISSUED FOR CONSTRUCTION		LOCATION:	
11/16/2013	A2	LINE TAG: V-2200 CONDENSATE OUTLET	
DATE	BY	DRAWING NO.: 070-11E	
NO.	NO.	REV. 0	
WOG	N/A	REV. 0	
INSULATION:	N/A	REV. 0	
PAINT:	WARM GREY	REV. 0	
SANDBLAST:	SP-6	REV. 0	
PICKLE & OIL:	N/A	REV. 0	
PHFT:	N/A	REV. 0	
RADIOGRAPHY:	100%	REV. 0	
WELD PROC:	CAD0-5	REV. 0	
CS		REV. 0	
PIPING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION.			

BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	3	PIPE, SMLS, BW, SCH 80, A106 GR B	197 MM	2.3
2	2	PIPE, SMLS, BW, SCH 80, A106 GR B	141 MM	1.1
3	3x2	TEE, RED, BW, SCH 80, A234 GR WPB	1	2.2
4	3	ELBOW, 90 DEG, LR, BW, SCH 80, A234 GR WPB	2	4.1
5	2	ELBOW, 90 DEG, LR, BW, SCH 80, A234 GR WPB	1	0.9
6	3	FLANGE, RFVN, CL600, SCH 80 BDRE, A105N	2	20.9
7	2	FLANGE, RFVN, CL600, SCH 80 BDRE, A105N	1	5.5
8	3	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	2	2.0
9	2	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	1	1.0
10	3/4X127	(B) STUD BOLTS W/ NUTS, A193 GR B7M /	2	2.0
11	5/8X108	(B) STUD BOLTS W/ NUTS, A193 GR B7M /	1	1.0
12	3	VALVE, BALL, RP, RF, NACE, CLASS 600 ASME, A105N	1	38.6
TOTAL FABRICATION WEIGHT				81.2

CUT PIPE LENGTH		SIZE
PIECE NUM	LENGTH (MM)	(INCH)
(A)	1970	3
(B)	141	2



CONT'D ON SHEET 2013-070-12a

CONT'D ON SHEET 2013-070-12c

CADO INDUSTRIES INC.		CUSTOMER: PENNWEST EXPLORATION	
7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8		UNIT NO.:	2013-070-601
TEL: (403) 279-6662; FAX: (403) 279-6687		MODEL:	4-WELL SEPARATOR SKID (BU-2000)
		LOCATION:	
		LINE TAG:	V-2300 CONDENSATE OUTLET
		DRAWING NO.:	270-12a
		REV.:	0
PIPING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION. PIPE SPEC.: CS WELD PROC.: CADO-5 DESIGN PRESS.: 9376 KPAC RADIOGRAPHY: 100% DESIGN TEMP.: 90 DEG. C PHWT: N/A ADMT: -29 DEG. C PICKLE & OIL: N/A C-AI: 1.5 mm SANDBLAST: SP-6 TEST PRESS.: 14064 KPAC PAINT: WARM GREY TEST MEDIA: WOG INSULATION: N/A		DATE: 11/10/2013 BY: AP WC: WC CHK: WC APR: APR	REVISION NO. 9 ISSUED FOR CONSTRUCTION

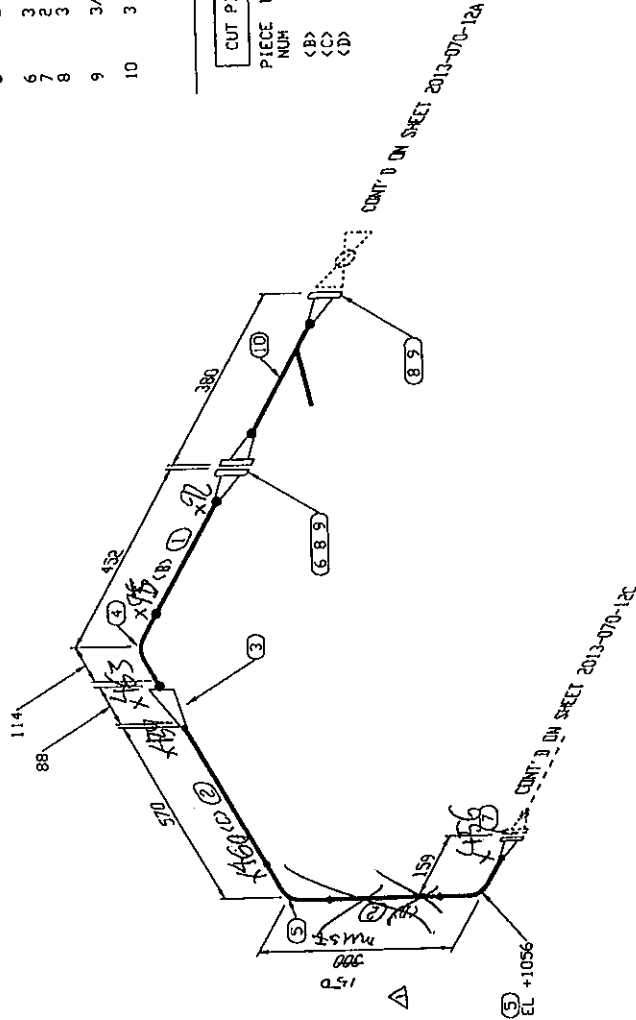
**BILL OF MATERIAL**

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	3	PIPE, SMLS, BV, SCH. 80, A105 GR B	438 MM	5.0
2	3	PIPE, SMLS, BV, SCH. 80, A105 GR B	631 MM	4.8
3	3/2	REDUCER, CONC, BV, SCH. 80, A234 GR WPB	1	0.9
4	3	ELBOW, 90 DEG, LR, BV, SCH. 80, A234 GR WPB	1	2.1
5	2	ELBOW, 90 DEG, LR, BV, SCH. 80, A234 GR WPB	2	1.8
6	3	FLANGE, RFIN, CL600, SCH. 80, B0PE, A105N	1	31.3
7	2	FLANGE, RFIN, CL600, SCH. 80, B0PE, A105N	1	5.5
8	3	GASKET, CL600, SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	2	2.0
9	3/4X127	(8) STUD BOLTS 7/8 NUTS, A193 GR B7N / A194 GR 2HM	2	2.0
10	3	Y-STRAINER	1	55.0

TOTAL FABRICATION WEIGHT

55.0

CUT PIPE LENGTH	PIECE LENGTH (MM)	SIZE (INCH)
(B)	242	3
(C)	490	2
(D)	1440	2



CUSTOMER: PENNWEST EXPLORATION

UNIT NO.: 2013-070-601

MODEL: 4-WELL SEPARATOR SKID (BU-2000)

LOCATION:

LINE TAG: V-2300 CONDENSATE OUTLET

DRAWING NO.: 070-123

REV. C

**CADO INDUSTRIES INC.**

7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8  
TEL: (403) 279-6662; FAX: (403) 279-6667

PIPING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION.

PIPE SPEC: CS WELD PROC: CADO-5

DESIGN PRESS: 9375 KPAG RADIOGRAPHY: 100%

DESIGN TEMP: 90 DEG. C PHRT: N/A

MONIT: -29 DEG. C PICKLE & OIL: N/A

C.A.: 1.6 mm SANDBLAST: SP-6

TEST PRESS: 14064 KPAG PAINT: WARRU GREY

TEST MEDIA: WOG INSULATION: N/A

ISSUED FOR CONSTRUCTION

REASON

NO.

NO.

DATE

BY

CHK

APR

WC

WC

AP

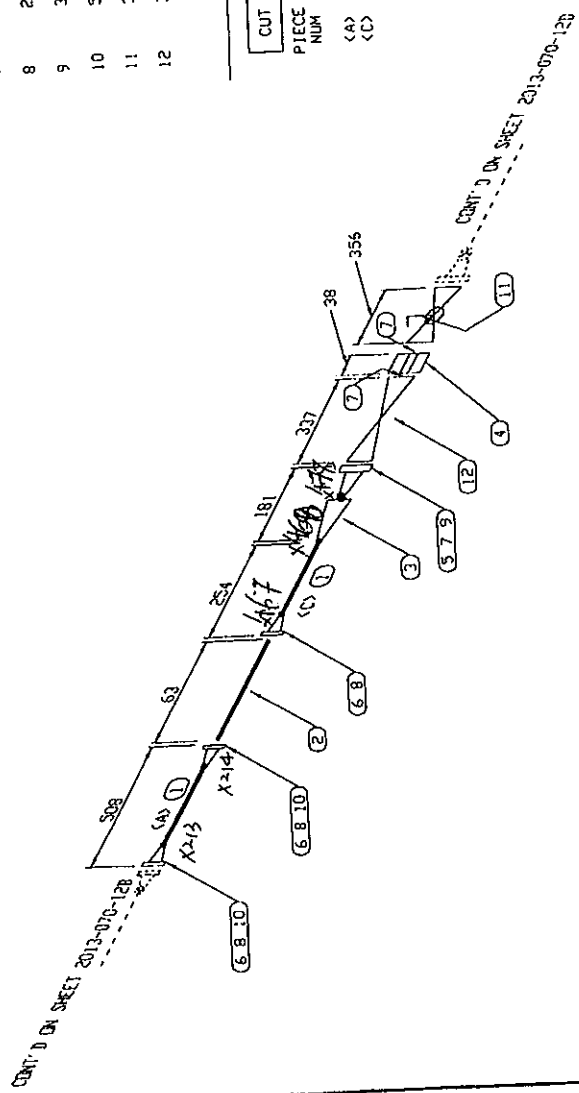
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11/10/2013

**BILL OF MATERIAL**

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	2	PIPE, SMLS, BW, SCH. 80, A106 GR 2	514 MM	3.9
2	2	TURBINE METER		0.5
3	3x2	REDUCER, CONC. BW, SCH. 80, A234 GR 1PB		0.9
4	3	BLEED RING, RF, 600H, RP, 21mm HOLE		1.0
5	3	FLANGE, RF, CL600, SCH. 80 BORE, A105N		10.5
6	2	FLANGE, RF, CL600, SCH. 80 BORE, A105N		16.4
7	3	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE		3.0
8	2	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE		3.0
9	3/4x127	(B) STUD BOLTS W/ NUTS, A193 GR B7M / A194 GR 2HM		1.0
10	5/8x108	(B) STUD BOLTS W/ NUTS, A193 GR B7M / A194 GR 2HM		2.0
11	3	VALVE, BALL, RP, RF, NACE, CLASS 600 ASME, A105N		38.5
12	3	CONTROL VALVE, FISHER ET, 600LB FLG, RF ASME, A105N		1.0
TOTAL FABRICATION WEIGHT				81.5

CUT PIPE LENGTH	PIECE LENGTH (MM)	SIZE (INCH)
<A>	343	2
<C>	171	2

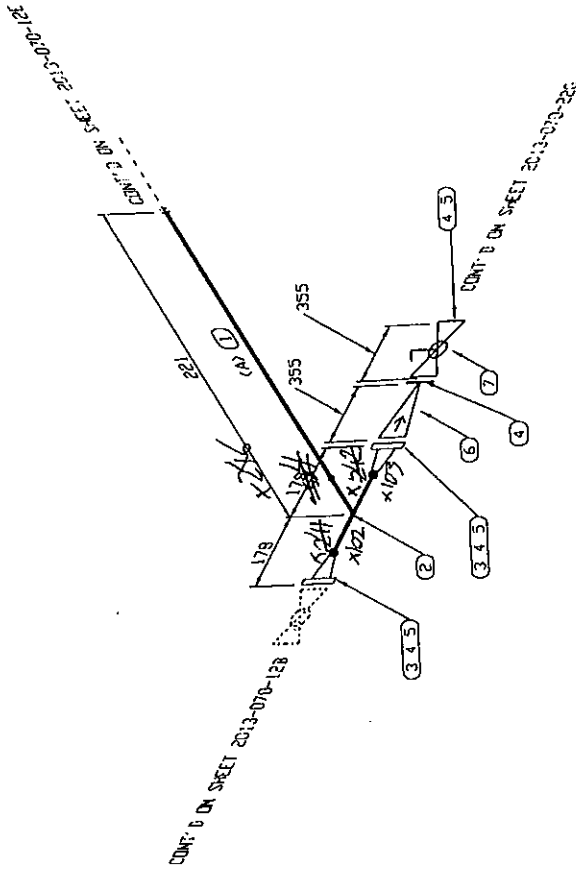


CADO INDUSTRIES INC.		CUSTOMER: PENNWEST EXPLORATION	
7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8		UNIT NO.: 2013-070-601	
TEL: (403) 279-6662; FAX: (403) 279-6687		MODEL: 4-WELL SEPARATOR SKID (BU-2000)	
ISSUED FOR CONSTRUCTION		LOCATION: V-2300 CONDENSATE OUTLET	
DATE: 11/19/2013	BY: HC	DATE: 070-12C	REV: 0
NO. 3	NO. 3	NO. 3	NO. 3
INSULATION: N/A	PAINT: HARM GREY	TEST MEDIA: H2O	TEST PRESS: 14054 KPA
WELD PROC.: CAD0-5	RADIOGRAPHY: 100%	DESIGN PRESS.: 9376 KPA	PIPE SPEC.: CS
PHRT: N/A	PICKLE & OIL: N/A	DESIGN TEMP.: 90 DEG. C	WDMG: -29 DEG. C
INSULATION: N/A	PAINT: HARM GREY	DESIGN TEMP.: 90 DEG. C	WDMG: -29 DEG. C
TEST MEDIA: H2O	TEST PRESS: 14054 KPA	PIPE SPEC.: CS	WELD PROC.: CAD0-5
INSULATION: N/A	PAINT: HARM GREY	DESIGN PRESS.: 9376 KPA	RADIOGRAPHY: 100%
TEST MEDIA: H2O	TEST PRESS: 14054 KPA	PIPE SPEC.: CS	WELD PROC.: CAD0-5

BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1		PIPE, SMLS, BV, SCH 80, A106 GR B	141 MM	1.1
2	3X2	TEE, RED, BV, SCH 80, A234 GR VPB	1	2.2
3	3	FLANGE, RF, CL 600, SCH 80 BORE, A105N	2	20.9
4	3	GASKET, CL 600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	4	4.0
5	3/4X127	(B) STUD BOLTS W/ NUTS, A193 GR 87M / A194 GR 2HH	3	3.0
6	3	VALVE, SWING CHECK, RF, NACE, CLASS 600 ASME, A105N	1	61.3
7	3	VALVE, BALL, RF, NACE, CLASS 600 ASME, A105N	1	38.6
TOTAL FABRICATION WEIGHT				130.8

CUT PIPE LENGTH	PIECE LENGTH	SIZE
NUM	(MM)	(INCH)
(A)	141	2



CADO INDUSTRIES INC.

7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8  
 TEL: (403) 279-6662; FAX: (403) 279-6667

CUSTOMER: PENNWEST EXPLORATION

LINE NO.: 2013-070-601

MODEL: 4-WELL SEPARATOR SKID (BU-2000)

LOCATION:

LINE TAG: V-2300 CONDENSATE OUTLET

DRAWING NO.: 070-120

REV. 0

PIPING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION.

PIPE SPEC.: CS WELD PROC.: CADO-5

DESIGN PRESS.: 9376 KPAC RADIOGRAPHY: 100%

DESIGN TEMP.: -29 DEG. C PAINT: N/A

NDING: PICKLE & OIL: N/A

C.A.: 1.6 mm SANDBLAST: SP-6

TEST PRESS.: 14084 KPAC PAINT: WARM GREY

TEST MEDIA: WOG INSULATION: N/A

NO.

ISSUED FOR CONSTRUCTION

DATE: 11/15/2013

BY: WC

CHK: WC

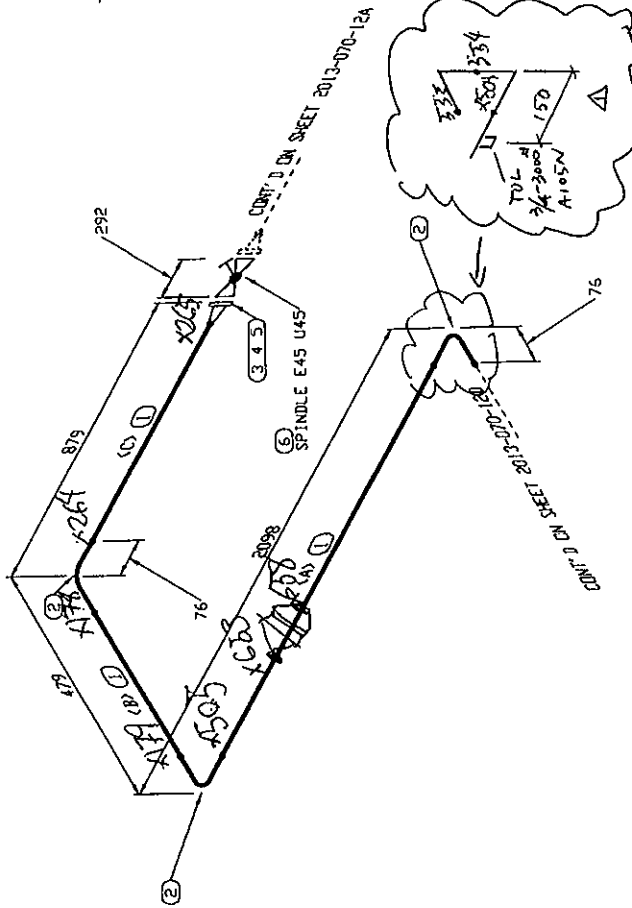
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BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	2	PIPE, SMLS, BW, SCH 80, A106 GR B	2976 MM	22.0
2	2	ELBOW, 90 DEG, LR, BW, SCH 80, A234 GR	3	2.7
3	2	FLANGE, RFWN, CL600, SCH 80 BORE, A105N	1	5.5
4	2	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	1	1.0
5	5/8X108	(B) STUD BOLTS W/ NUTS, A193 GR B7M / A194 GR 2HM	1	1.0
6	2	VALVE, GLOBE, RF, NACE, CLASS 600, ASME, A105N	1	40.9
TOTAL FABRICATION WEIGHT				72.8

CUT PIPE LENGTH		
PIECE NUM	LENGTH (MM)	SIZE (INCH)
(A)	1939	2
(B)	320	2
(C)	717	2



PIPING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION.	
PIPE SPEC:	CS WELD PROC: CADO-5
DESIGN PRESS:	9376 KPAC RADIOGRAPHY: 100%
DESIGN TEMP:	-29 DEG. C PWHT: N/A
WDMT:	PICKLE & OIL: N/A
C.A.:	1.6 mm SANDBLAST: SP-6
TEST PRESS:	14084 KPAC PAINT: WARM GREY
TEST MEDIA:	WOC INSULATION: N/A

**CADO INDUSTRIES INC.**  
 7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8  
 TEL: (403) 279-6662; FAX: (403) 279-6687

CUSTOMER: PENNWEST EXPLORATION

UNIT NO.: 2013-070-601

MODEL: 4-WELL SEPARATOR SKID (BU-2000)

LOCATION:

LINE TAG: V-2300 CONDENSATE OUTLET

DRAWING NO.: 070-12E

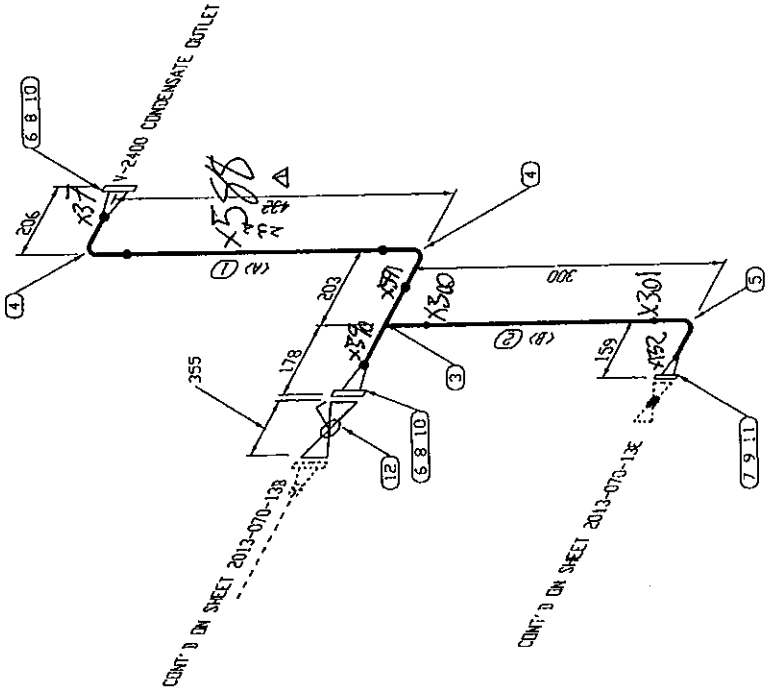
REV: 0

DATE	BY	CHK	APR
11/12/2013	AP	WC	WC

**BILL OF MATERIAL**

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	3	PIPE, SMLS, BW, SCH 80, A106 GR B	197 MM	2.3
2	3	PIPE, SMLS, BW, SCH 80, A106 GR B	141 MM	1.1
3	3X2	TEE, RED, BW, SCH 80, A234 GR VPB	1	2.2
4	3	ELBOW, 90 DEG, LR, BW, SCH 80, A234 GR VPB	2	4.1
5	2	ELBOW, 90 DEG, LR, BW, SCH 80, A234 GR VPB	1	0.9
6	3	FLANGE, REWN, CL600, SCH 80 BDRF, A105N	2	20.9
7	3	FLANGE, REWN, CL600, SCH 80 BDRF, A105N	1	5.5
8	3	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	2	2.0
9	2	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	1	1.0
10	3/4X127	(B) STUD BOLTS V/ NUTS, A193 GR B7N / A194 GR 2HM	2	2.0
11	5/8X108	(B) STUD BOLTS V/ NUTS, A193 GR B7N / A194 GR 2HM	1	1.0
12	3	VALVE, BALL, RP, RF, NACE, CLASS 600 ASME, A105N	1	38.6
TOTAL FABRICATION WEIGHT				81.2

CUT PIPE LENGTH		SIZE
PIECE NUM	LENGTH (MM)	(INCH)
<A>	197	Ø 3
<B>	141	Ø 2



**CADO INDUSTRIES INC.**  
 7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B6  
 TEL: (403) 278-6682; FAX: (403) 278-6887

CUSTOMER: PENNWEST EXPLORATION  
 UNIT NO.: 2013-070-601  
 MODEL: 4-WELL SEPARATOR SKID (BU.-2000)  
 LOCATION:  
 LINE TAG: V-2400 CONDENSATE OUTLET  
 DRAWING NO.: 070-13A  
 REV: 0

DATE	BY	CHK	APR
11/10/2013	AP	WC	WC

NO.	REVISION
0	ISSUED FOR CONSTRUCTION

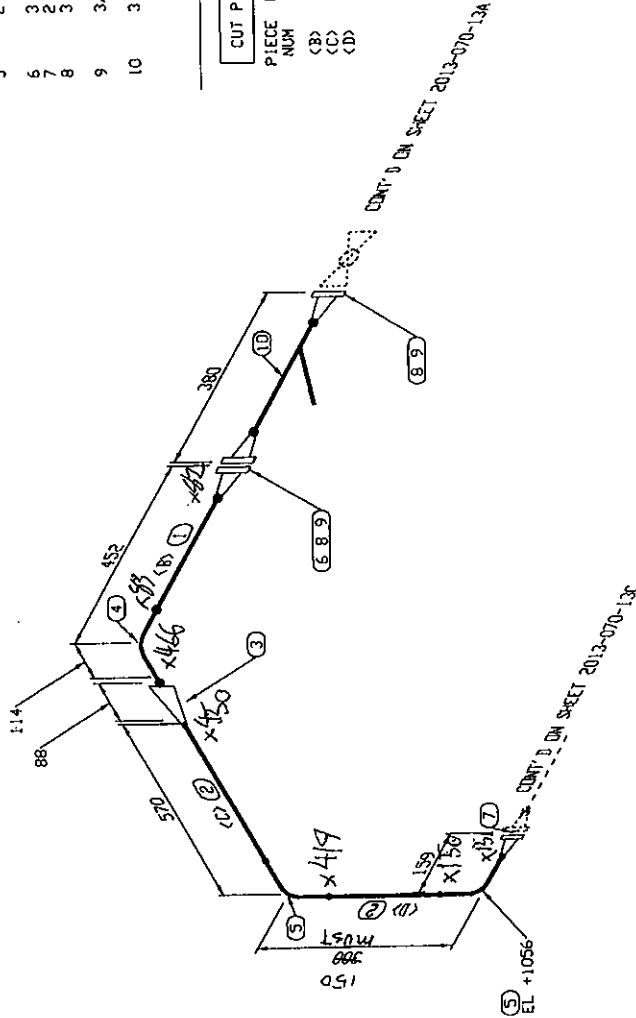
PIPING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION.  
 PIPE SPEC.: CS WELD PROC.: CADD-5  
 DESIGN PRESS.: 9376 KPA G RADIOGRAPHY: 100%  
 DESIGN TEMP.: 90 DEG. C PWHT: N/A  
 MONT: -29 DEG. C PICKLE & OIL: N/A  
 C.A.: 1.6 mm SANDBLAST: SP-6  
 TEST PRESS.: 14054 KPA G PAINT: WARRU GREY  
 TEST MEDIA: WCG INSULATION: N/A



BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	3	PIPE, SMLS, BV, SCH. 80, A106 GR B	438 MM	5.0
2	2	PIPE, SMLS, BV, SCH. 80, A106 GR B	631 MM	4.8
3	3X2	REDUCER, CONC, BV, SCH. 80, A234 GR PB	1	0.9
4	3	ELBOW, 90 DEG, LR, BV, SCH. 80, A234 GR	1	2.1
5	2	VPB	2	1.8
6	2	ELBOW, 90 DEG, LR, BV, SCH. 80, A234 GR	2	1.8
7	3	VPB	1	31.3
8	3	FLANGE, RFWN, CL600, SCH. 80 BORE, A105N	1	5.5
9	3	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	2	2.0
10	3/4X1/27	(8) STUD BOLTS V/ NUTS, A193 GR B7M / A194 GR 2HM	2	2.0
10	3	Y-STRAINER	1	
TOTAL FABRICATION WEIGHT				55.0

PIECE NUM	LENGTH (MM)	SIZE (INCH)
(B)	242	3
(C)	490	2
(D)	144	D



CADO INDUSTRIES INC.		PENNWEST EXPLORATION	
7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8		CUSTOMER:	PENNWEST EXPLORATION
TEL: (403) 279-6662; FAX: (403) 279-6687		UNIT NO.:	2013-070-601
		MODEL:	4-WELL SEPARATOR SKID (BU-2000)
		LOCATION:	
		LINE TAG:	V-2400 CONDENSATE OUTLET
		DRAWING NO.:	C70-13B
		REV.:	0

DATE	BY	CHK	APR
11/10/2013	AP	WC	WC

ISSUED FOR CONSTRUCTION	REVISION
0	

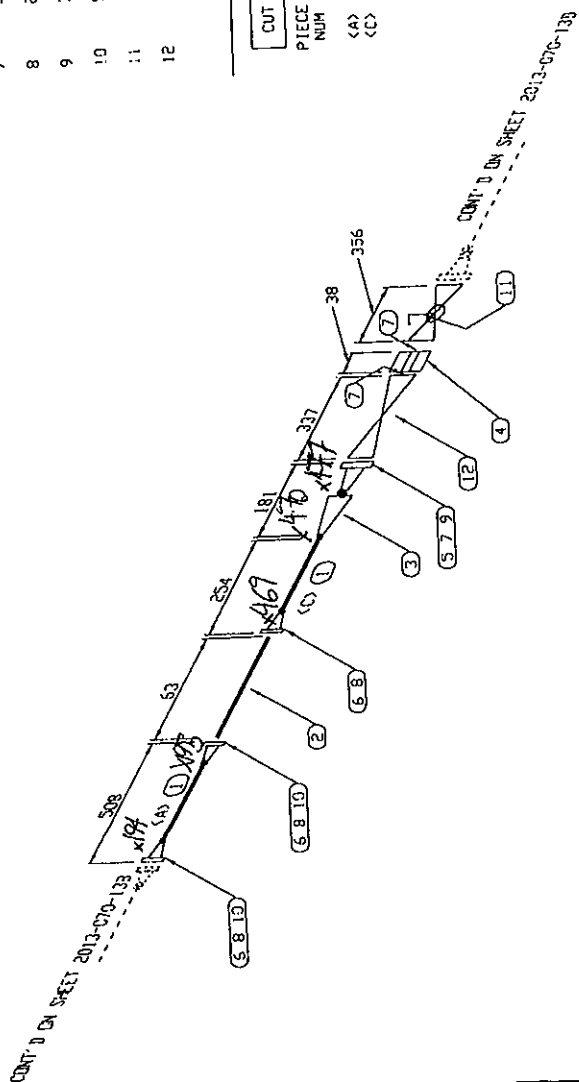
  

NO.	INSULATION:	PAINT:	SANDBLAST:	PICKLE & OIL:	PHRF:	RADIOGRAPHY:	WELD PROC.:	ASME B31.3 2010 EDITION.
	N/A	WARM GREY	SP-6	N/A	N/A	100%	CADO-5	

**BILL OF MATERIAL**

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1		PIPE, SMLS, BV, SCH 80, A106 GR B	514 MM	3.5
2		TURBINE METER	1	0.5
3	3X2	REDUCER, CONC, BV, SCH 80, A234 GR WP3	1	0.9
4		BLEED RING, RF, 600#, 21mm HOLE	1	1.0
5		FLANGE, RFVN, CL600, SCH 80, BDRS, A105N	3	10.5
6		FLANGE, RFVN, CL600, SCH 80, BDRS, A105N	3	18.4
7		GASKET, CL600, SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	3	3.0
8		GASKET, CL600, SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	3	3.0
9	3/4X127	(B) STUD BOLTS W/ NUTS, A193 GR B7M / A194 GR 2HM	1	1.0
10	5/8X108	(B) STUD BOLTS W/ NUTS, A193 GR B7M / A194 GR 2HM	2	2.0
11	3	VALVE, BALL, RF, NACE, CLASS 600 ASME A105N	1	38.6
12	3	CONTROL VALVE, FISHER ET, 600LB FLG, RF	1	1.0
TOTAL FABRICATION WEIGHT				81.5

PIECE NUM	CUT PIPE LENGTH (MM)	LENGTH (INCH)	SIZE (INCH)
(A)	343	13.5	2
(C)	171	6.7	2

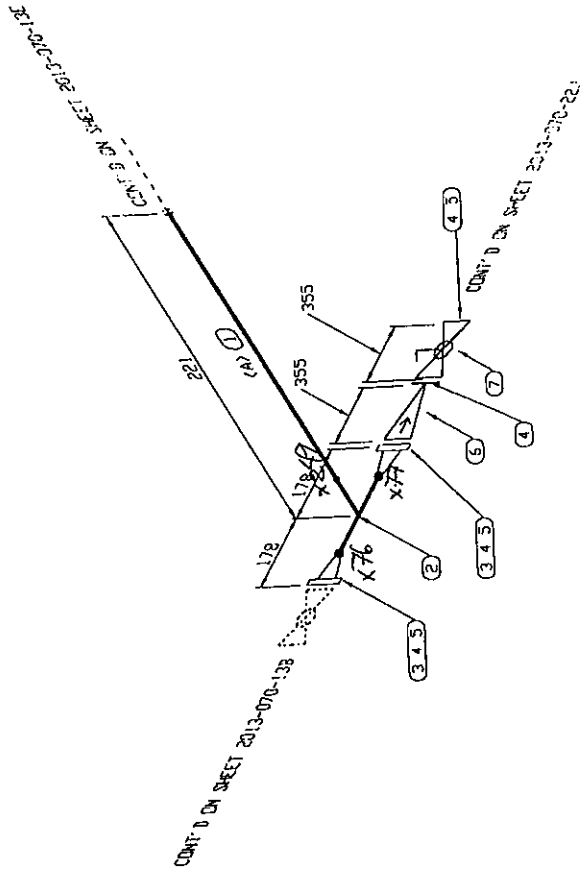


CADO INDUSTRIES INC.		CUSTOMER: PENNWEST EXPLORATION	
7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8		2013-070-601	
TEL: (403) 279-8662; FAX: (403) 279-8687		4-WELL SEPARATOR SKID (BU-2000)	
ISSUED FOR CONSTRUCTION		V-2400 CONDENSATE OUTLET	
DATE: 11/16/2013	BY: AP	DATE: 070-13C	REV: 0
NO. 0	REVISION		
WELD PROC: CADO-5	RADIOGRAPHY: 100%		
DESIGN PRESS: 9376 KPA	PHRT: N/A		
DESIGN TEMP: 90 DEG. C	PICKLE & OIL: N/A		
WDMT: -29 DEG. C	SAMPLAST: SP-6		
C.A.: 1.6 mm	PAVE: HARM GREY		
TEST PRESS: 14084 KPA	INSULATION: N/A		
TEST MEDIA: WOG			

BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	2	PIPE, SMLS, BW, SCH 80, A106 GR B	141 MM	1.1
2	3x2	TEE, RED, BW, SCH 80, A234 GR WPB	1	2.2
3	3	FLANGE, RFMN, CL600, SCH 80 BORE, A105N	2	20.9
4	3	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	4	4.0
5	3/4x127	(8) STUD BOLTS 1/2 NUTS, A193 GR B7H / A194 GR 2HM	3	3.0
6	3	VALVE, SWING CHECK, RF, NACE, CLASS 600 ASME, A105N	1	61.3
7	3	VALVE, BALL RP, RF, NACE, CLASS 600 ASME, A105N	1	38.6
TOTAL FABRICATION WEIGHT				130.8

CUT PIPE LENGTH	
PIECE LENGTH (MM)	SIZE (INCH)
(A) 141	2

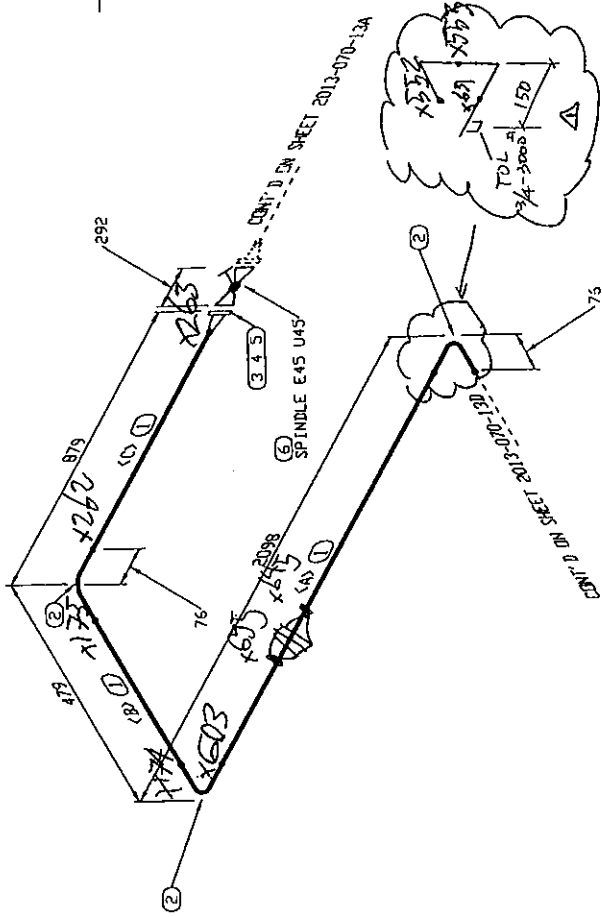


CADO INDUSTRIES INC.		PENNWEST EXPLORATION	
7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8		2013-070-601	
TEL: (403) 279-6662; FAX: (403) 278-6687		4-WELL SEPARATOR SKID (BU-2000)	
PIPING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION.		LOCATION: V-2400 CONDENSATE OUTLET	
PIPE SPEC: CS	WELD PROC: CADO-5	LINE TAG:	DRAWING NO.: 070-130
DESIGN PRESS: 9376 KPA G	RADIOGRAPHY: 100%	REV:	0
DESIGN TEMP: 90 DEG. C	PAINT: N/A		
MON: -25 DEG. C	PICKLE & OIL: N/A		
C.A.: 1.6 mm	SANDBLAST: SP-6		
TEST PRESS: 14084 KPA G	PAINT: WARM GREY		
TEST MEDIA: WDG	INSULATION: N/A		
		DATE: 11/19/2013	BY: WC
			CHK: WC
			APR: WC
			REV: 0

**BILL OF MATERIAL**

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	2	PIPE, SMLS, BW, SCH 80, A106 GR B	2976 MM	22.0
2	2	ELBOW, 90 DEG, LR, BW, SCH 80, A234 GR	3	2.7
3	2	FLANGE, RFYN, CL600, SCH 80 BORE, A105N	1	5.5
4	2	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	1	1.0
5	5/8X108	(B) STUD BOLTS W/ NUTS, A193 GR B7M / A194 GR 2HM	1	1.0
6	2	VALVE, GLOBE, RF, NACE, CLASS 600, ASME, A105N	1	40.9
TOTAL FABRICATION WEIGHT				72.8

PIECE LENGTH (MM)	SIZE (INCH)
1939	2
350	2
717	2

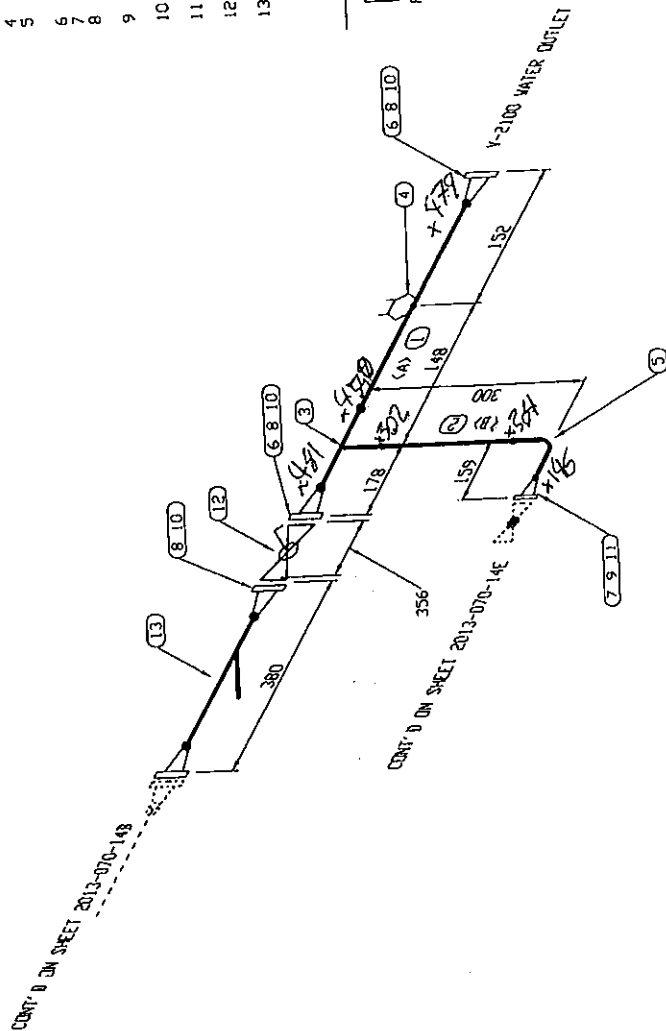


CADO INDUSTRIES INC.		PENNYWEST EXPLORATION	
7491 - 110 AVE SE, CALGARY, ALBERTA, T2C 3B8		2013-070-601	
TEL: (403) 279-6682; FAX: (403) 279-6687		4--WELL SEPARATOR SKID (BU-2000)	
ISSUED FOR CONSTRUCTION		V-2400 CONDENSATE OUTLET	
NO.	DATE	BY	CHK
0	11/07/2013	AP	MC
REVISION		APR	MC
INSULATION: N/A		DRAWING NO.: 070-13C	
TEST MEDIA: WOG		REV. 0	
TEST PRESS: 14064 KPAG			
GAL: 1.6 mm			
SANDBLAST: SP-5			
PICKLE & OIL: N/A			
PHRT: N/A			
RADIOGRAPHY: 100%			
WELD PROC.: CADO-5			
DESIGN PRESS: 9376 KPAG			
DESIGN TEMP: -29 DEG. C			
PIPE SPEC: CS			
PIPING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION.			

BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	3	PIPE, SMLS, BW, SCH 80, A106 GR B	119 MM	3.6
2	3	PIPE, SMLS, BW, SCH 80, A106 GR B	141 MM	1.0
3	3X2	TEE, RED, BW, SCH 80, A234 GR WPB	1	2.2
4	3X1/2	THREDLET, CL3000, A105N	1	0.2
5	2	ELBOW, 90 DEG, LR, BW, SCH 80, A234 GR WPB	1	0.9
6	3	FLANGE, RFWN, CL600, SCH 80 BORE, A105N	2	41.8
7	2	GASKET, CL600, SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	1	5.5
8	3	GASKET, CL600, SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	3	3.0
9	2	GASKET, CL600, SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	1	1.0
10	3/4X127	(8) STUD BOLTS W/ NUTS, A193 GR B7M / A194 GR 2HM	3	3.0
11	5/8X108	(8) STUD BOLTS W/ NUTS, A193 GR B7M / A194 GR 2HM	1	1.0
12	3	VALVE, BALL, RP, RF, NACE, CLASS 600 ASME, A105N	1	38.5
13	3	Y-STRAINER	1	1.0
TOTAL FABRICATION WEIGHT				101.4

CUT PIPE LENGTH	SIZE
PIECE LENGTH NUM	(INCH)
(A) 119	3
(B) 141	2



CADO INDUSTRIES INC.		PENNWEST EXPLORATION	
7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8			
TEL: (403) 279-6662; FAX: (403) 279-6687			
PIPING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION.	WELD PROC: CADO-5	CUSTOMER:	PENNWEST EXPLORATION
PIPE SPEC: CS	RADIOGRAPHY: 100%	UNIT NO.:	2013-070-601
DESIGN PRESS: 8376 KPAC	PHWT: N/A	MODEL:	4-WELL SEPARATOR SKID (BU-2000)
DESIGN TEMP: 90 DEG. C	PICKLE & OIL: N/A	LOCATION:	
HDMT: -29 DEG. C	SANDBLAST: SP-3	LINE TAG:	V-2100 WATER OUTLET
CAI: 1.6 mm	PAINT: WSPW GREY	DRAWING NO.:	070-14A
TEST PRESS: 14054 KPAC	INSULATION: N/A	REV.:	0
TEST MEDIA: WATER			

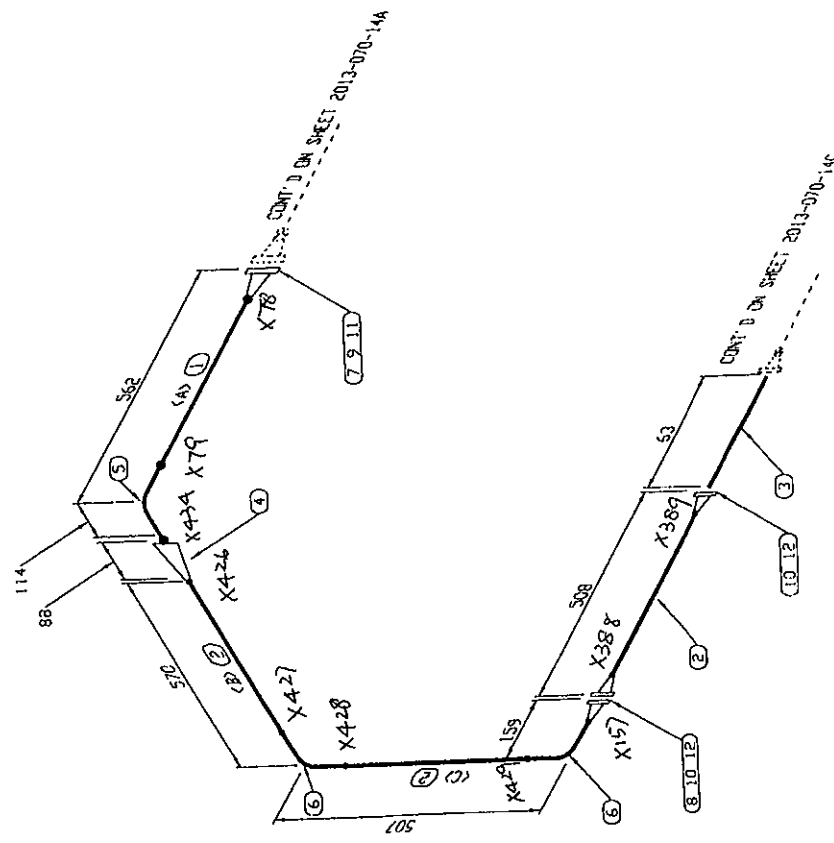
DATE	BY	CHK	APR
11/10/2013	AP	WC	WC

ISSUED FOR CONSTRUCTION	REVISION
0	NO

BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	3	PIPE, SMLS, BW, SCH 80, A106 GR B	352 MM	4.0
2	2	PIPE, SMLS, BW, SCH 80, A136 GR B	1181 MM	8.2
3	2	TURBINE METER	63 MM	0.3
4	3X2	REDUCER, CONC. BW, SCH 80, A234 GR WPB	1	0.9
5	3	ELBOW, 90 DEG. LR, BW, SCH 80, A234 GR WPB	1	2.1
6	2	ELBOW, 90 DEG. LR, BW, SCH 80, A234 GR WPB	2	1.8
7	3	FLANGE, RFVN, CL600, SCH 80 BORE, A105N	1	10.5
8	3	FLANGE, RFVN, CL600, SCH 80 BORE, A105N	1	16.4
9	3	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	1	1.0
10	2	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	2	2.0
11	3/4X127	(8) STUD BOLTS W/ NUTS, A193 GR B7M / A194 GR 2HM	1	1.0
12	5/8X108	(8) STUD BOLTS W/ NUTS, A193 GR B7M / A194 GR 2HM	2	2.0
TOTAL FABRICATION WEIGHT				50.7

PIECE NUM	LENGTH (MM)	SIZE (INCH)
<A>	352	3
<B>	490	2
<C>	348	2
<D>	343	2

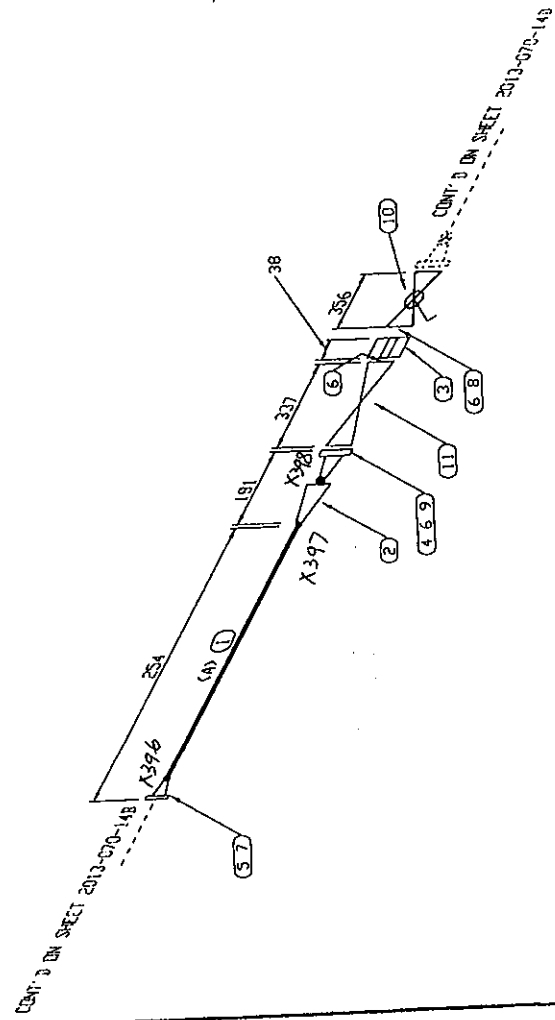


CADO INDUSTRIES INC.		PENNWEST EXPLORATION	
7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8		UNIT NO: 2013-070-601	
TEL: (403) 279-6662; FAX: (403) 279-6667		MODEL: 4-WELL SEPARATOR SKID (BU-2000)	
PIPING DESIGNED IN ACCORDANCE WITH ASME B31.3, 2010 EDITION.		LOCATION:	
PIPE SPEC: CS	WELD PROC: CADO-5	LINE TAG: 7-2100 WATER CULET	
DESIGN PRESS: 9376 KPA(G)	RADIOGRAPHY: 100%	DRAWING NO: 2013-143	
DESIGN TEMP: 90 DEG. C	PHMT: N/A	REV: 0	
JOINT: -29 DEG. C	PICKLE & OIL: N/A		
C.A.: 1.5 FTR	SANDBLAST: SP-6		
TEST PRESS: 14264 KPA(G)	PAINT: WARM GREY		
TEST MEDIA: WATER	INSULATION: N/A		

BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	2	PIPE, SMLS, BV, SCH. 80, A106 GR B	1.71 MM	1.3
2	3X2	REDUCER, CONC. BV, SCH. 80, A234 GR WPB		0.9
3	3	BLEED RING, RF, 600#, RF, 21MM HOLE		1.0
4	3	FLANGE, RFVN, CL600, SCH. 80 BORE, A105N		10.5
5	2	FLANGE, RFVN, CL600, SCH. 80 BORE, A105N		5.5
6	3	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	3	3.0
7	2	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	1	1.0
8	3/4X171	(8) STUD BOLTS W/ NUTS, A193 GR B7M / A194 GR 2HM	1	1.0
9	3/4X127	(8) STUD BOLTS W/ NUTS, A193 GR 97M / A194 GR 2HM	1	1.0
10	3	VALVE, BALL, RP, RF, NACE, CLASS 600 ASME, A105N	1	38.6
11	3	CONTROL VALVE, FISHER ET, 600LB FLG, RF	1	1.0
TOTAL FABRICATION WEIGHT				64.5

CUT PIPE LENGTH	SIZE
PIECE LENGTH (MM)	(INCH)
(4) 171	2

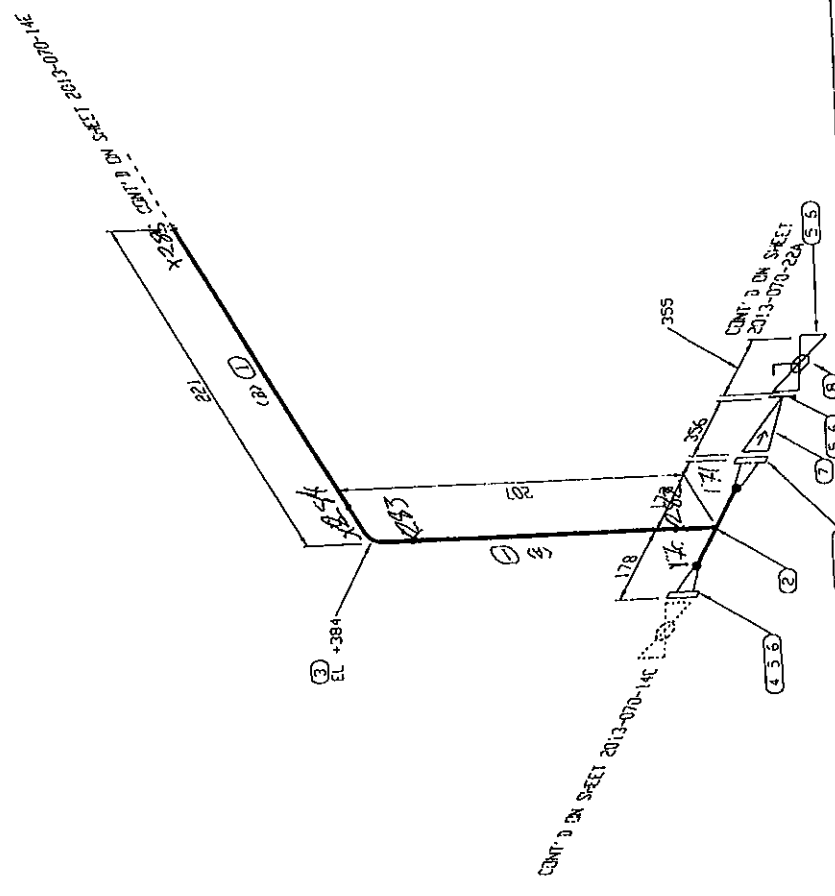


<b>CADO INDUSTRIES INC.</b> 7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8 TEL: (403) 279-6662; FAX: (403) 279-6667		CUSTOMER: PENNWEST EXPLORATION UNIT NO.: 2013-070-601 MODEL: 4-WELL SEPARATOR SKID (BU-2000) LOCATION: LINE TAG: V-2100 WATER OUTLET DRAWING NO.: 370-14C REV: 0	
PIPING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION, WELD PROC.: CADD-5 RADIOGRAPHY: 100% PWHT: N/A PICKLE & OIL: N/A SANDBLAST: SP-5 PAINT: WARM GREY INSULATION: N/A	TEST PRESS.: 14394 KPAG TEST MEDIA: WATER	0 ISSUED FOR CONSTRUCTION DATE: 11/15/2013 BY: CJK APP:	NO. PERSON

BILL OF MATERIALS

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	2	PIPE, 3M.S., 2W, SCH 80, A106 GR B	189 MM	1.5
2	3X2	TEE, RED. 90 DEG, LR. 2W, SCH 80, A234 GR WPB	1	2.2
3	2	ELBOW, 90 DEG, LR. 2W, SCH 80, A234 GR WPB	1	0.9
4	3	FLANGE, RFVN, CL600, SCH 80 BORE, A105N	2	20.9
5	3	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	4	4.0
6	3/4X127	(8) STUD BOLTS V/ NUTS, A193 GR B7M / A194 GR 2HM	4	4.0
7	3	VALVE, SWING CHECK, RF, NACE, CLASS 600	1	61.3
8	3	VALVE, BALL, RP, RF, NACE, CLASS 600 ASME, A105N	1	38.6
TOTAL FABRICATION WEIGHT				133.2

CUT PIPE LENGTH		SIZE
PIECE NUM	LENGTH (MM)	(INCH)
(A)	48	2
(B)	141	2



**CADO INDUSTRIES INC.**

7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8  
 TEL: (403) 279-6662; FAX: (403) 279-6687

CUSTOMER:	PENWEST EXPLORATION
UNIT NO.:	2013-070-601
MODEL:	4-WELL SEPARATOR SKID (BU-2000)
LOCATION:	
LINE TAG:	V-2103 WATER OUTLET
DRAWING NO.:	270-140
REV.:	2

PIPE SPEC:	CS	WELD PROC:	CADO-5
DESIGN PRESS:	9376 KPA G	RADIOGRAPHY:	100%
DESIGN TEMP:	-29 DEG. C	PWHT:	N/A
MONIT:	1.5 mm	PICKLE & OIL:	N/A
TEST PRESS:	14294 KPA G	SANDBLAST:	SP-5
TEST MEDIA:	AIR	PAINT:	WARM GREY
		INSULATION:	N/A

ISSUED FOR CONSTRUCTION  
 DATE: 11/12/2013  
 BY: C-K  
 APPROVED: P-7430N

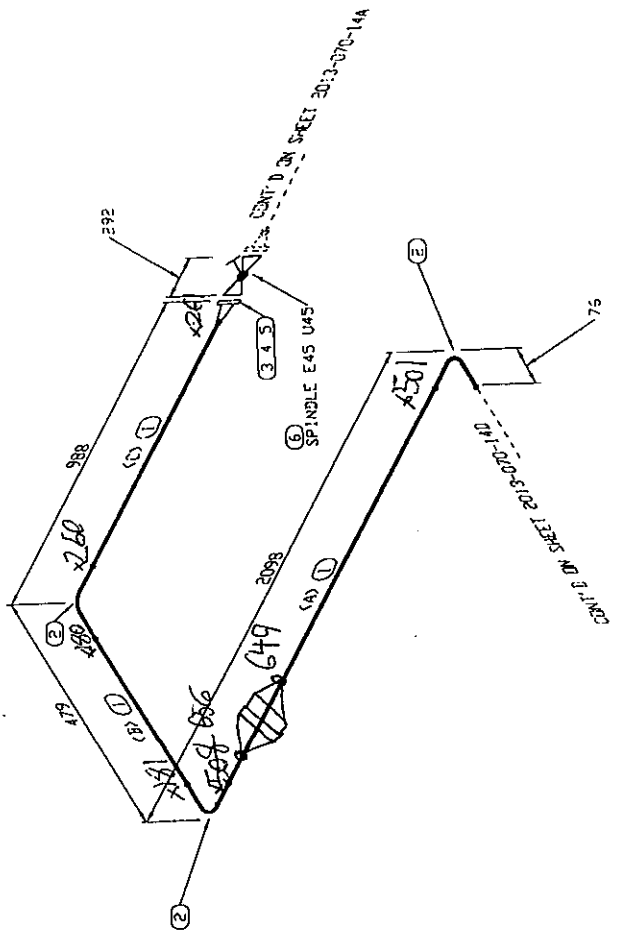
PIPING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION.



BILL OF MATERIALS

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	2	PIPE, SMLS., BW, SCH. 80, A106 GR B	3085 MM	22.8
2	2	ELBOW, 90 DEG, LR, BW, SCH. 80, A234 GR	3	2.7
3	2	VPB	1	5.5
4	2	FLANGE, REVN, CL600, SCH. 80 BORE, A105N	1	1.0
5	S/8X108	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	1	1.0
6	2	(8) STUD BOLTS W/ NUTS, A193 GR B7M / A194 GR 2HH / VALVE, GLOBE, RF, NACE, CLASS 603, ASME, A105N	1	40.9
TOTAL FABRICATION WEIGHT				73.7

CUT PIPE LENGTH	PIECE LENGTH (MM)	SIZE (INCH)
(A)	1939	2
(B)	320	2
(C)	826	2



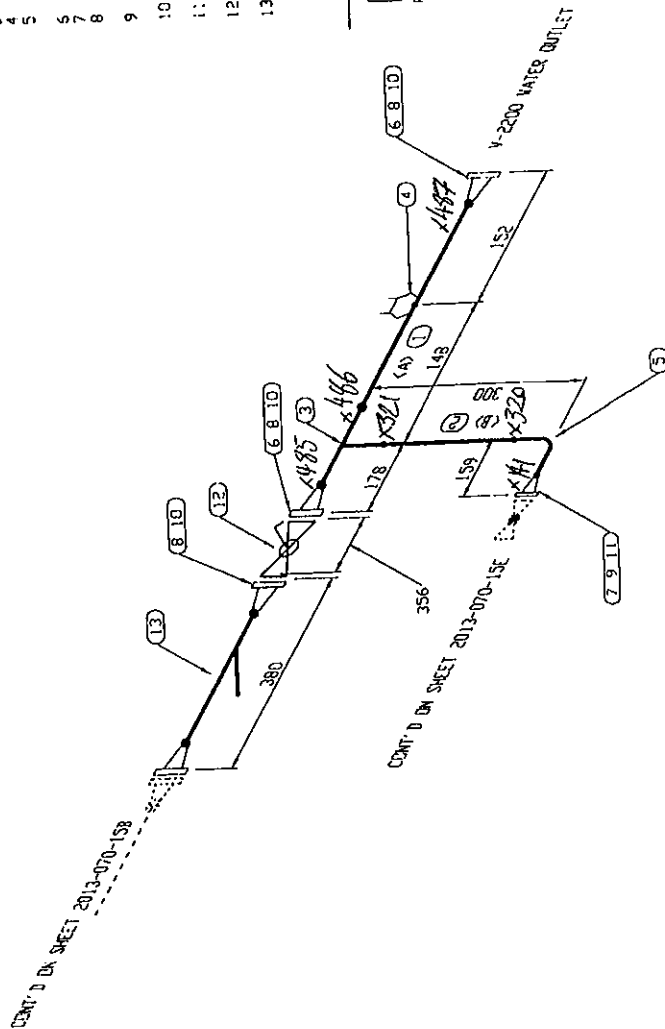
CADO INDUSTRIES INC.		CUSTOMER: PENNWEST EXPLORATION	
7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8		UNIT NO.:	2013-070-601
TEL: (403) 279-6662; FAX: (403) 279-6667		MODEL:	4-WELL SEPARATOR SKID (BU-2000)
PIPING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION.		LOCATION:	
PIPE SPEC.: CS	WELD PROC.: CADO-5	LINE TAG:	V-2100 WATER OUTLET
DESIGN PRESS.: 9376 KPA	RADIOGRAPHY: 100%	DRAWING NO.:	070-14E
DESIGN TEMP.: 90 DEG. C	PHWT: N/A	REV.:	0
NDMT: -29 DEG. C	PICKLE & OIL: N/A		
C.A.: 1.6 mm	SANDBLAST: SP-6		
TEST PRESS.: 14284 KPA	PAINT: WARM GREY		
TEST MEDIA: WATER	INSULATION: N/A		
		DATE:	11/10/2013
		BY:	AP
		CHK:	WC
		APP:	WC
		NO.:	0
		REVISION:	

BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	3	PIPE, SMLS, BW, SCH. 80, A106 GR B	119 MM	2.6
2	2	PIPE, SMLS, BW, SCH. 80, A106 GR B	141 MM	1.0
3	3X2	TEE, RED, BW, SCH. 80, A234 GR WPB	1	2.2
4	3X1/2	THREEDOLET, CL3000, A105N	1	0.9
5	2	ELBOW, 90 DEG, LR, BW, SCH. 80, A234 GR WPB	1	0.9
6	3	FLANGE, RFWN, CL600, SCH. 80 BORE, A105N	2	41.8
7	2	FLANGE, RFWN, CL600, SCH. 80 BORE, A105N	1	5.5
8	3	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	3	3.0
9	2	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	1	1.0
10	3/4X127	(B) STUD BOLTS V/ NUTS, A193 GR B7M / A194 GR 2HM	3	3.0
11	5/8X108	(B) STUD BOLTS V/ NUTS, A193 GR B7M / A194 GR 2HM	1	1.0
12	3	VALVE, BALL, RP, RF, NACE, CLASS 600 VALVE, ASME, A105N	1	38.6
13	3	Y-STRAINER	1	1.0

TOTAL FABRICATION WEIGHT 101.4

PIECE NUM	LENGTH (MM)	SIZE (INCH)
(A)	119	3
(B)	141	2



**CADO INDUSTRIES INC.**

7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8  
 TEL: (403) 279-6662; FAX: (403) 279-6687

CUSTOMER: PENNWEST EXPLORATION

LINE NO.: 2013-070-601

MODEL: 4-WELL SEPARATOR SKID (BU-2000)

LOCATION:

LINE TAG: V-2200 WATER OUTLET

DRAWING NO.: C70-154

REV: C

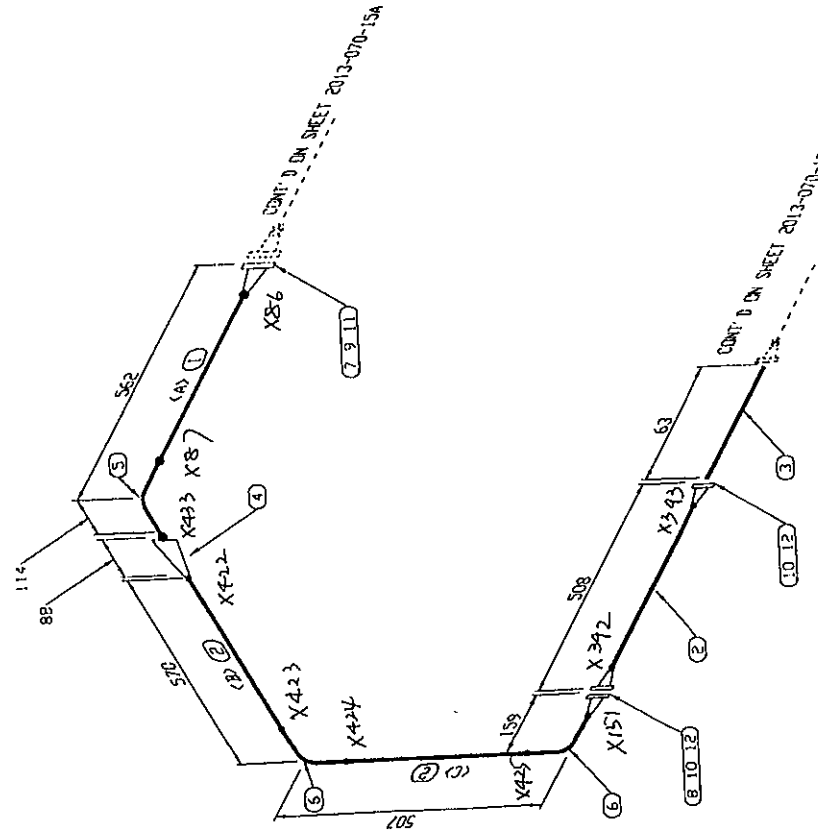
PIPE SPEC:	CS	WELD PROC:	CADO-5
DESIGN PRESS:	9375 KPAG	RADIOGRAPHY:	100%
DESIGN TEMP:	90 DEG. C	PHWT:	N/A
WDMT:	-29 DEG. C	PICKLE & OIL:	N/A
C.A.:	1.6 mm	SANDBLAST:	SP-6
TEST PRESS:	14264 KPAG	PAINT:	HARM GREY
TEST MEDIA:	WATER	INSULATION:	N/A

ISSUED FOR CONSTRUCTION  
 DATE: 11/13/2011  
 BY: JAC  
 CHECKED: JAC  
 REVISION NO.

**BILL OF MATERIAL**

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	3	PIPE, SMLS, BV, SCH. 80, A106 GR B	352 MM	4.0
2	2	PIPE, SMLS, BV, SCH. 80, A106 GR B	1181 MM	8.9
3	2	TURBINE METER	63 MM	0.5
4	3X2	REDUCER, CONC, BV, SCH. 80, A234 GR WPB	1	2.1
5	3	ELBOW, 90 DEG, LR, BV, SCH. 80, A234 GR WPB	1	1.8
6	2	ELBOW, 90 DEG, LR, BV, SCH. 80, A234 GR	2	1.8
7	3	FLANGE, RFWN, CL600, SCH. 80 BORE, A106N	1	10.5
8	2	FLANGE, RFWN, CL600, SCH. 80 BORE, A106N	1	16.4
9	3	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	1	1.0
10	2	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	2	2.0
11	3/4X127	(8) STUD BOLTS V/ NUTS, A193 GR B7M / A194 GR 2HM	1	1.0
12	5/8X108	(8) STUD BOLTS V/ NUTS, A193 GR B7M / A194 GR 2HM	2	2.0
TOTAL FABRICATION WEIGHT				50.7

CUT PIPE LENGTH		SIZE
PIECE NUM	LENGTH (MM)	(INCH)
(A)	352	3
(B)	490	2
(C)	348	2
(D)	343	2



**CADO INDUSTRIES INC.**  
 7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8  
 TEL: (403) 279-6662; FAX: (403) 279-6687

CUSTOMER: PENNWEST EXPLORATION  
 UNIT NO.: 2013-070-601  
 MODEL: 4-WELL SEPARATOR SKID (BU-2000)  
 LOCATION:  
 LINE TAG: V-2230 WATER OUTLET  
 DRAWING NO.: 070-153

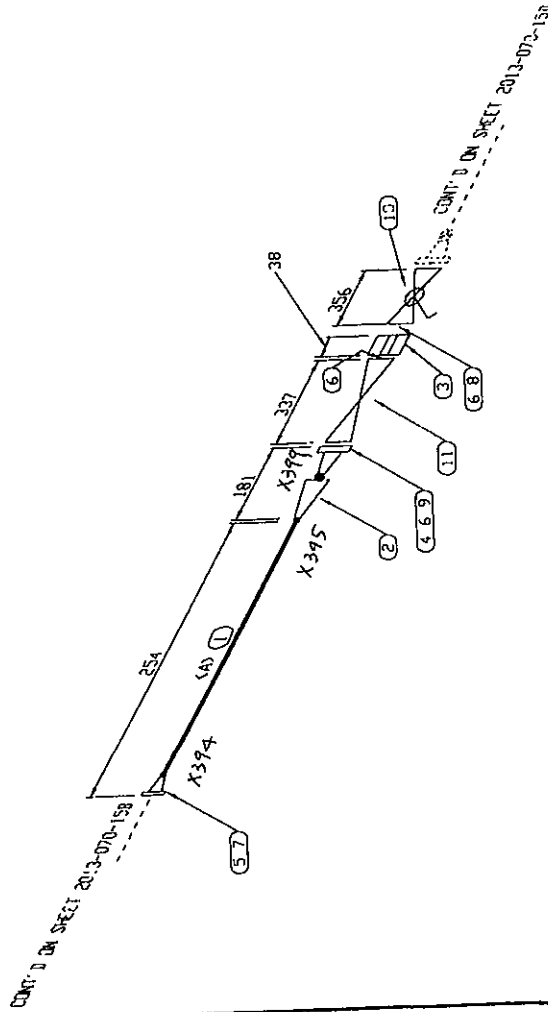
PPING DESIGNED IN ACCORDANCE WITH ASME 331.3 2010 EDITION.	WELD PROC: CADO-5
PIPE SPEC: CS	RADIOGRAPHY: 100%
DESIGN PRESS: 9376 KPA G	PHWT: N/A
DESIGN TEMP: 90 DEG. C	PICKLE & OIL: N/A
MONTE: -25 DEG. C	SANDBLAST: SP-5
C.A.: 1.6 mm	PAINT: WARM GREY
TEST PRESS: A234 KPA G	INSULATION: V/A
TEST MEDIA: WATER	

ISSUED FOR CONSTRUCTION  
 DATE: 11/12/2013  
 BY: [Signature]  
 CHECK: [Signature]  
 APPRO: [Signature]

BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	2	PIPE, SMLS, BV, SCH. 80, A106 GR B	171 MM	1.3
2	3X2	REDUCER, CONG, BV, SCH. 80, A234 GR WP3	1	0.9
3	3	BLEED RING, RF, 600#, 21mm HOLE	1	1.0
4	3	FLANGE, RFVN, CL600, SCH. 80 BORE, A105N	1	10.5
5	3	FLANGE, RFVN, CL600, SCH. 80 BORE, A105N	1	5.5
6	3	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	3	3.0
7	2	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	1	1.0
8	3/4X171	(8) STUD BOLTS V/ NUTS, A193 GR B7M / A194 GR 2HM	1	1.0
9	3/4X127	(8) STUD BOLTS V/ NUTS, A193 GR B7M / A194 GR 2HM	1	1.0
10	3	VALVE BALL, RP, RF, NACE, CLASS 600 ASME, A105N	1	38.6
11	3	CONTROL VALVE, FISHER ET, 600LB FLG, RF	1	1.0
TOTAL FABRICATION WEIGHT				64.5

PIECE LENGTH (MM)	SIZE (INCH)
<A>	2
171	

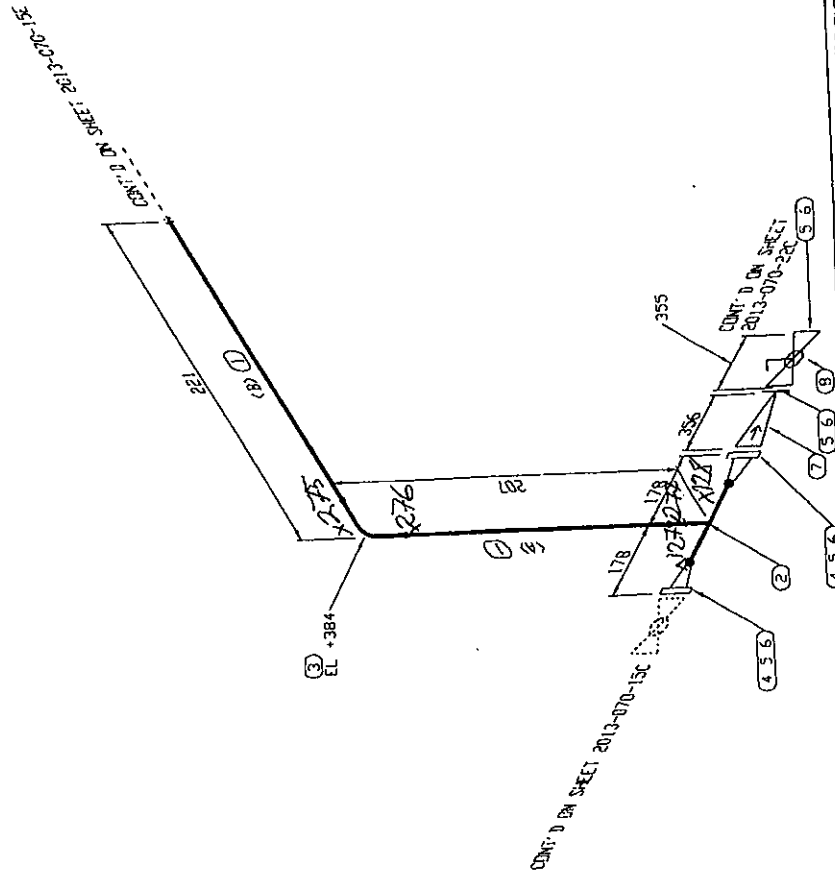


CADO INDUSTRIES INC.		PENNWEST EXPLORATION	
7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8		CUSTOMER:	
TEL: (403) 279-6662; FAX: (403) 279-6687		UNIT NO.: 2013-070-601	
		MODEL: 4-WELL SEPARATOR SKID (8U-2000)	
		LOCATION:	
		LINE TAG: V-2200 WATER OUTLET	
		DRAWING NO.: 070-15C	
		REV. 0	
DATE	BY	CHK	APP
11/17/2013	AP	WC	WC
ISSUED FOR CONSTRUCTION			
REV. 0N			
PIPING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION.		WELD PROC.: CADO-5	
PIPE SPEC.: CS		RADIOGRAPHY: 100%	
DESIGN PRESS.: 9376 KPAQ		PWT: N/A	
DESIGN TEMP.: 90 DEG. C		PICKLE & OIL: N/A	
NDMT: -29 DEG. C		SANDBLAST: SP-6	
CA: 1.6 mm		PAINT: HARM GREY	
TEST PRESS.: 14064 KPAQ		INSULATION: N/A	
TEST MEDIA: WATER			

BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	2	PIPE, SMLS, BW, SCH. 80, A106 GR B	189 MM	1.5
2	3X2	TEE, RED, BW, SCH. 80, A234 GR WPB	1	2.2
3	2	ELBOW, 90 DEG, LR, BW, SCH. 80, A234 GR WPB	1	0.9
4	3	FLANGE, RFWN, CL600, SCH. 40 BORE, A105N	2	20.9
5	3	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	4	4.0
5	3/4X127	(8) STUD BOLTS W/ NUTS, A193 GR B7M / A194 GR 2HM	4	4.0
7	3	VALVE, SWING CHECK, RF, NACE, CLASS 600	1	61.3
8	3	VALVE, BALL, RP, RF, NACE, CLASS 600	1	38.6
		ASME, A135N		
		ASME, A135N		
		TOTAL FABRICATION WEIGHT		133.2

CUT PIPE LENGTH		SIZE
PIECE LENGTH NUM	(MM)	(INCH)
(A)	48	2
(B)	141	2



**CADO INDUSTRIES INC.**

7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8  
 TEL: (403) 279-6662; FAX: (403) 279-6687

CUSTOMER: PENNWEST EXPLORATION

UNIT NO.: 2013-070-601

MODEL: 4-WELL SEPARATOR SKID (BU-2000)

LOCATION:

LINE TAG: V-2200 WATER OUTLET

DRAWING NO.: 070-153

REV. 0

PIPEING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION.

PIPE SPEC:	CS	WELD PROC:	CADO-5
DESIGN PRESS:	9376 KPA	RADIOGRAPHY:	100%
DESIGN TEMP:	90 DEG. C	PAINT:	N/A
WOM:	-29 DEG. C	PICKLE & OIL:	N/A
C.A.:	1.6 mm	SANDBLAST:	SP-6
TEST PRESS:	14094 KPA	PAINT:	WASH GREY
TEST MEDIA:	WATER	INSULATION:	N/A

ISSUED FOR CONSTRUCTION

DATE: 23/03/11

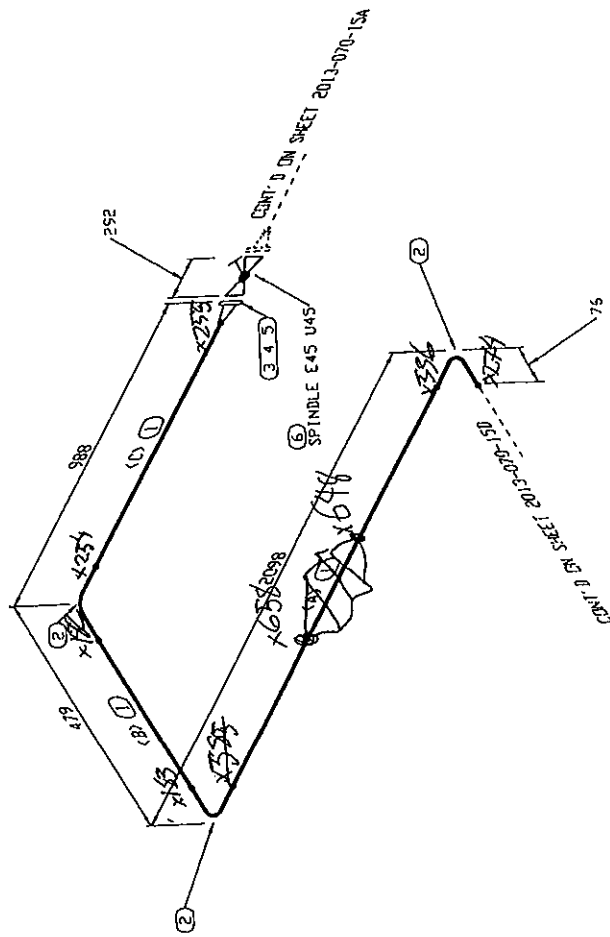
BY: JCH

APR

BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	2	PIPE, SMLS, BN, SCH. 80, A105 GR B	3085 MM	22.8
2	2	ELBOW, 90 DEG. LR, 90, SCH. 80, A234 GR	3	2.7
3	2	NPB RFVN, CL600, SCH. 80, BDRP, A105N	1	5.5
4	2	FLANGE, CL600, SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	1	1.0
5	5/8X108	(B) STUD BOLTS 1/2 NUTS, A193 GR B7N / A194 GR 2HM	1	1.0
6	2	VALVE, GLOBE, RF, NACE, CLASS 600, ASME, A105N	1	40.9
TOTAL FABRICATION WEIGHT				73.7

PIECE NUM	CUT PIPE LENGTH (MM)	LENGTH (MM)	SIZE (INCH)
(A)	1939	2	2
(B)	320	2	2
(C)	886	2	2



CAD INDUSTRIES INC. 7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8 TEL: (403) 279-6662; FAX: (403) 279-6687		CUSTOMER: PENNWEST EXPLORATION	
UNIT NO.: 2013-070-601		MODEL: 4-WELL SEPARATOR SKID (BU-2000)	
LOCATION: V-2250 WATER OUTLET		DRAWING NO.: 370-15E	
DATE: 11/10/2011		REV: 0	
ISSUED FOR CONSTRUCTION	NO.	BY	CHK
0			
WARM GREY			
INSULATION: N/A			
TEST MEDIA: WATER			
DESIGNED IN ACCORDANCE WITH: ASME B31.3 2010 EDITION.	WELD PROC.: CADO-5	RADIOGRAPHY: 100%	
PIPE SPEC.: CS	RADIATION: N/A	PWHT: N/A	
DESIGN PRESS.: 9376 KPAC	PICKLE & OIL: N/A	SANDBLAST: SP-5	
DESIGN TEMP.: 90 DEG. C	PAINT: WARM GREY	INSULATION: N/A	
WDMT: -29 DEG. C			
CA: 1.6 mm			
TEST PRESS.: 14064 KPAC			

CONT. 3 ON SHEET 2013-070-15A

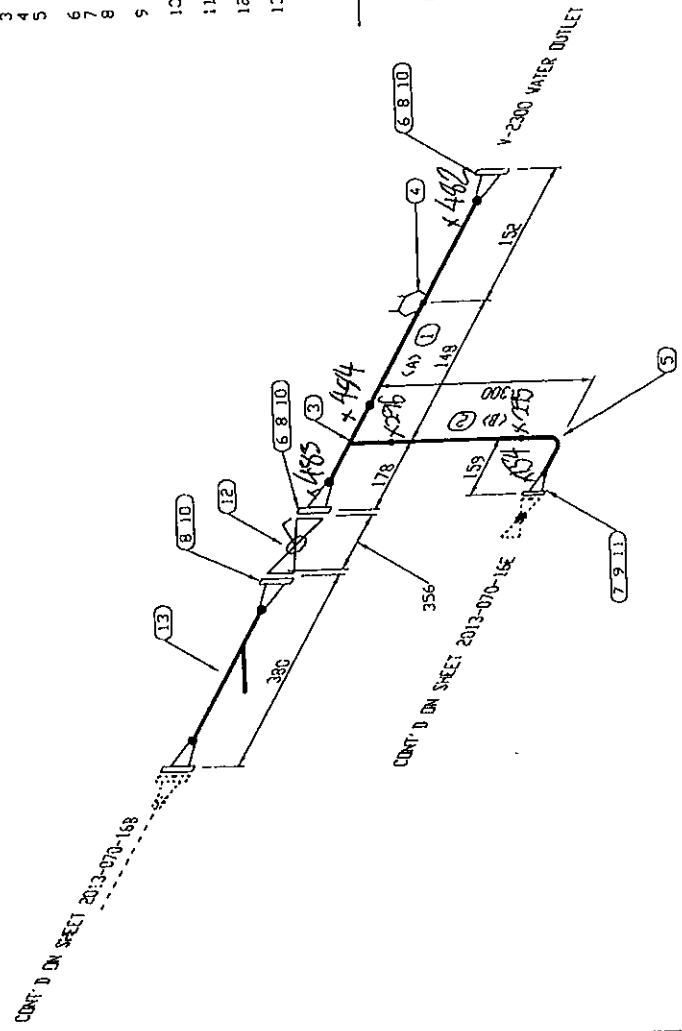
CONT. 1 ON SHEET 2013-070-15B

BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	3	PIPE, SMLS. BW, SCH. 80, A106 GR B	119 MM	3.6
2	2	PIPE, SMLS. BW, SCH. 80, A106 GR B	141 MM	1.0
3	3X2	TEE, RED. BW, SCH. 80, A234 GR WPB	1	2.2
4	3X1/2	THREDELET, CL3000, A105N	1	0.2
5	2	ELBOW, 90 DEG. LR, BW, SCH. 80, A234 GR WPB	1	0.9
6	2	FLANGE, RFVN, CL600, SCH. 80 BORE, A105N	2	41.8
7	2	FLANGE, RFVN, CL600, SCH. 80 BORE, A105N	1	5.5
8	3	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	3	3.0
9	2	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	1	1.0
10	3/4X127	(B) STUD BOLTS W/ NUTS, A193 GR B7M / A194 GR 2HM	3	3.0
11	5/8X108	(B) STUD BOLTS W/ NUTS, A193 GR B7M / A194 GR 2HM	1	1.0
12	3	VALVE, BALL, RP, REF. NACE, CLASS 600 ASME, A105N	1	38.6
13	3	Y-STRAINER	1	1.0

TOTAL FABRICATION WEIGHT 101.4

CUT PIPE LENGTH	PIECE LENGTH (MM)	SIZE (INCH)
(A)	119	3
(B)	141	2



**CADO INDUSTRIES INC.**  
 7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8  
 TEL: (403) 278-6662; FAX: (403) 279-6987

CUSTOMER:	PENNWEST EXPLORATION
UNIT NO.:	2013-070-601
MODEL:	4-WELL SEPARATOR SKID (BU-2000)
LOCATION:	
LINE TAG:	V-2300 WATER OUTLET
DRAWING NO.:	970-16A
	REV. 0

PIPE SPEC.:	CS	WELD PROC.:	C400-5
DESIGN PRESS.:	8376 KPA	RADIOGRAPH:	100%
DESIGN TEMP.:	90 DEG. C	PAINT:	N/A
WDMT:	-29 DEG. C	PICKLE & OIL:	N/A
C.A.:	1.5 mm	SANDBLAST:	SP-6
TEST PRESS.:	14064 KPA	PAINT:	WARM GREY
TEST MEDIA:	WATER	INSULATION:	N/A

PIPING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION.

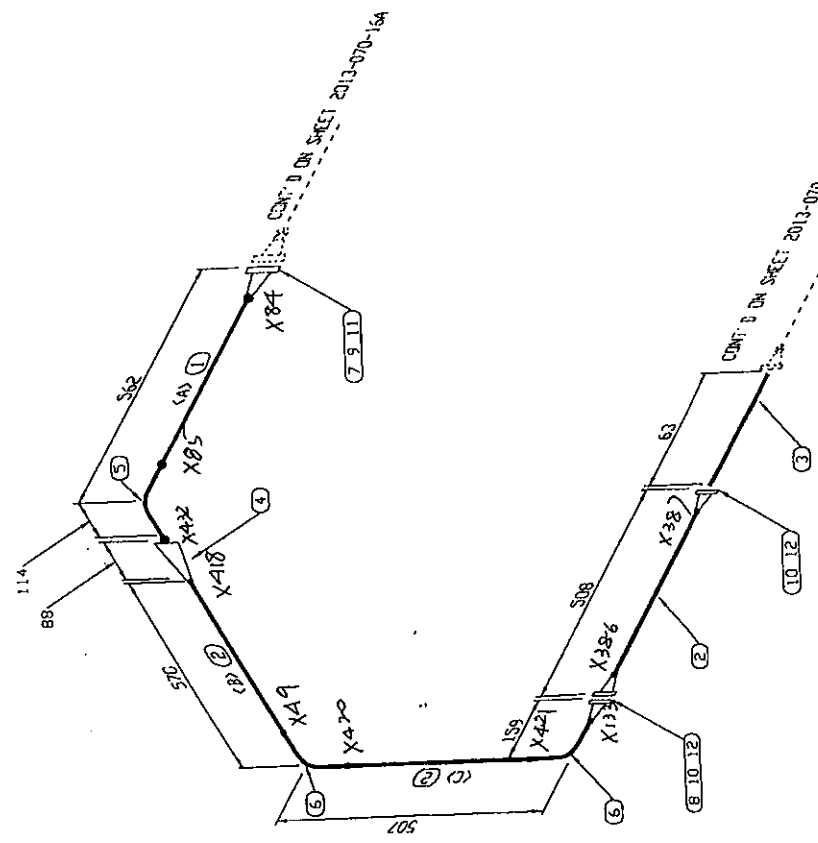
ISSUED FOR CONSTRUCTION  
 DATE: 11/10/2013  
 BY: WC  
 CHECKED: WC  
 APPROVED: APR

REV. 0

BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	3	PIPE, SMLS, BW, SCH 80, A106 GR B	352 MM	4.0
2	2	PIPE, SMLS, BW, SCH 80, A106 GR B	1181 MM	8.9
3	2	TURBINE METER	63 MM	0.5
4	3X2	REDUCER, CONC. BW, SCH 80, A234 GR WPB	1	0.9
5	3	ELBOW, 90 DEG. LR, BW, SCH 80, A234 GR WPB	1	2.1
6	2	ELBOW, 90 DEG. LR, BW, SCH 80, A234 GR WPB	2	1.8
7	3	FLANGE, RFWN, CL600, SCH 80 BORE, A10SN	1	10.5
8	2	FLANGE, RFWN, CL600, SCH 80 BORE, A10SN	1	16.4
9	3	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	1	1.0
10	2	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	2	2.0
11	3/4X127	(B) STUD BOLTS W/ NUTS, A193 GR B7M / (B) A194 GR 2HM	1	1.0
12	5/8X108	(B) STUD BOLTS W/ NUTS, A193 GR B7M / (B) A194 GR 2HM	2	2.0
TOTAL FABRICATION WEIGHT				50.7

CUT PIPE LENGTH		SIZE (INCH)
PIECE NUM	LENGTH (MM)	
(A)	352	3
(B)	490	2
(C)	348	2
(D)	343	2



**CADO INDUSTRIES INC.**

7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8  
 TEL: (403) 279-6862; FAX: (403) 279-6887

CUSTOMER:	PENNWEST EXPLORATION
UNIT NO.:	2013-070-601
MODEL:	4-WELL SEPARATOR SKID (BU-2000)
LOCATION:	
LINE TAG:	V-2300 WATER OUTLET
DRAWING NO.:	070-168
REV:	0

DESIGN PRESS:	9376 KPAC	INSULATION:	N/A
PIPE SPEC:	CS	WELD PROC.:	CADO-5
DESIGN TEMP:	93 DEG. C	RADIOGRAPHY:	100%
WDMT:	-29 DEG. C	PHWT:	N/A
C.A.:	1.8 mm	PICKLE & OIL:	N/A
TEST PRESS:	14064 KPAC	SANDBLAST:	SP-5
TEST MEDIA:	WATER	PAINT:	WARM GREY
		NO.:	

ISSUED FOR CONSTRUCTION

PERSON

DATE

BY

AP

WC

WC

APR

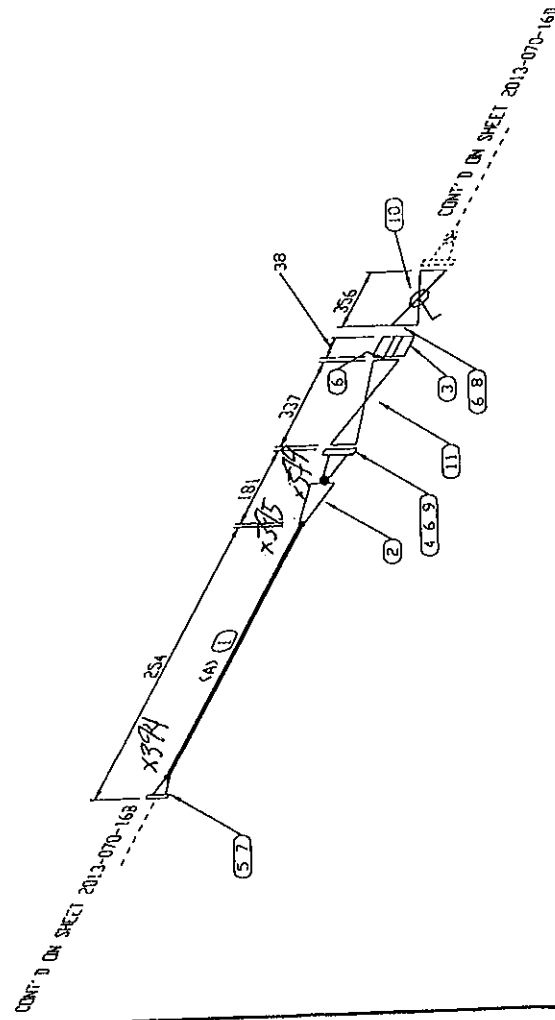
NO.



BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1		PIPE, SMLS, BW, SCH 80, A106 GR B	171 MM	1.3
2	3x2	REDUCER, CONC, BW, SCH 80, A234 GR WPB	1	0.9
3	3	BLEED RING, RF, 600#, RF, 21mm HOLE	1	1.0
4	3	FLANGE, RFWN, CL600, SCH 80 BORE, A10SN	1	10.5
5	3	FLANGE, RFWN, CL600, SCH 80 BORE, A10SN	1	5.5
6	3	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	3	3.0
7	2	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	1	1.0
8	3/4X171	(8) STUD BOLTS V/ NUTS, A193 GR B7M / A194 GR 2HM	1	1.0
9	3/4X127	(8) STUD BOLTS V/ NUTS, A193 GR B7M / A194 GR 2HM	1	1.0
10	3	VALVE, BALL, RP, RF, NACE, CLASS 600 ASME, A10SN	1	38.6
11	3	CONTROL VALVE, FISHER ET, 600LB FLG, RF	1	1.0
TOTAL FABRICATION WEIGHT				64.5

CUT PIPE LENGTH	PIECE LENGTH (MM)	SIZE (INCH)
<A>	171	2



**CADO INDUSTRIES INC.**

7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8  
 TEL: (403) 279-6662; FAX: (403) 279-6687

CUSTOMER: PENNWEST EXPLORATION

UNIT NO.: 2013-070-601

MODEL: 4-WELL SEPARATOR SKID (BU-2000)

LOCATION:

LINE TAG: V-2300 WATER OUTLET

DRAWING NO.: 070-16C

PIPING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION.	WELD PROC.: CA00-5
PIPE SPEC.: CS	RADIOGRAPHY: 100%
DESIGN PRESS.: 9376 KPAC	PHWT: N/A
DESIGN TEMP.: 90 DEG. C	PICKLE & OIL: N/A
NDMT: -29 DEG. C	SANDBLAST: SP-6
C.A.: 1.5 mm	PAINT: WARM GREY
TEST PRESS.: 14064 KPAC	INSULATION: N/A
TEST MEDIA: WATER	

DATE	BY	CHK	APR
11/19/2013	AP	WC	WC

ISSUED FOR CONSTRUCTION

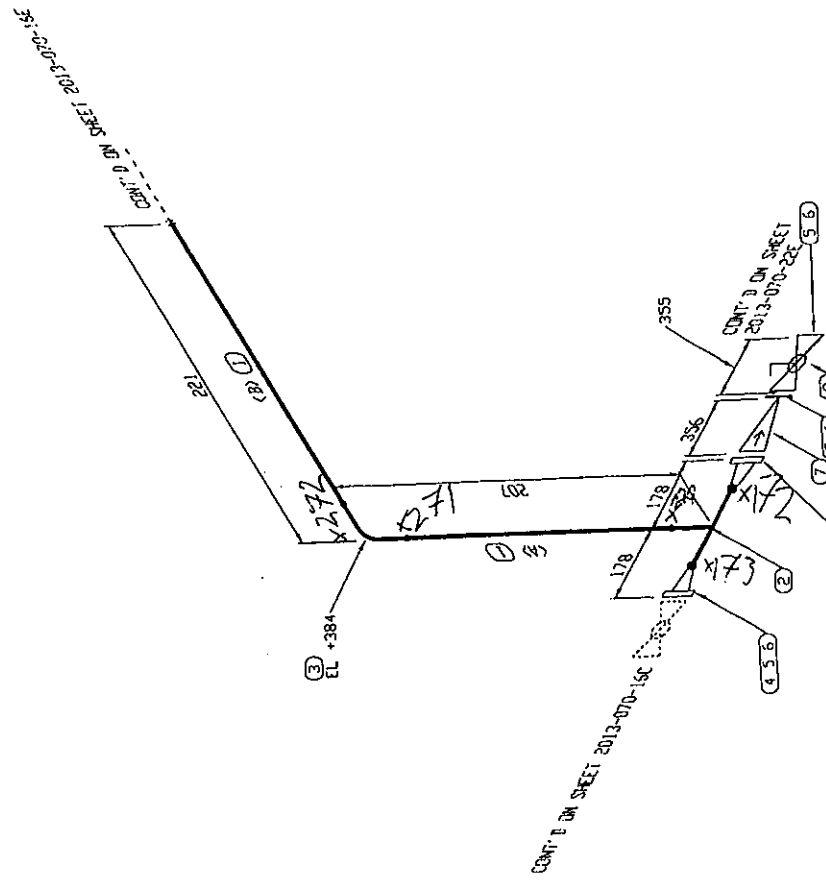
NO. 0

REV. 0

BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	3	PIPE, SMLS. BV, SCH. 80, A106 GR B	189 MM	1.5
2	3x2	TEE, RED. BV, SCH. 80, A234 GR VPB	1	2.2
3	2	ELBOW, 90 DEG. LR, 3W, SCH. 80, A234 GR VPB	1	0.9
4	3	FLANGE, RFVN, CL600, SCH. 80 BDR, A105N	2	20.8
5	3	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	4	4.0
6	3/4x127	(B) STUD BOLTS W/ NUTS, A193 GR B7M / A194 GR 2HM	4	4.0
7	3	VALVE, SWING CHECK, RF, NACE, CLASS 600 ASME, A105N	1	51.3
8	3	VALVE, BALL, RP, RF, NACE, CLASS 600 ASME, A105N	1	38.6
TOTAL FABRICATION WEIGHT				133.2

CUT PIPE LENGTH		SIZE
PIECE LENGTH NUM	(MM)	(INCH)
(A)	48	2
(B)	141	2



**CADO INDUSTRIES INC.**

7491 - 110 AVE SE, CALGARY, ALBERTA T2C 9B8  
TEL: (403) 279-6662; FAX: (403) 279-6667

CUSTOMER: PENNVEST EXPLORATION

UNIT NO.: 2013-070-601

MODEL: 4-WELL SEPARATOR SKID (BU-2000)

LOCATION:

LINE TAG: V-2300 WATER OUTLET

DRAWING NO.: 070-160

REV: 0

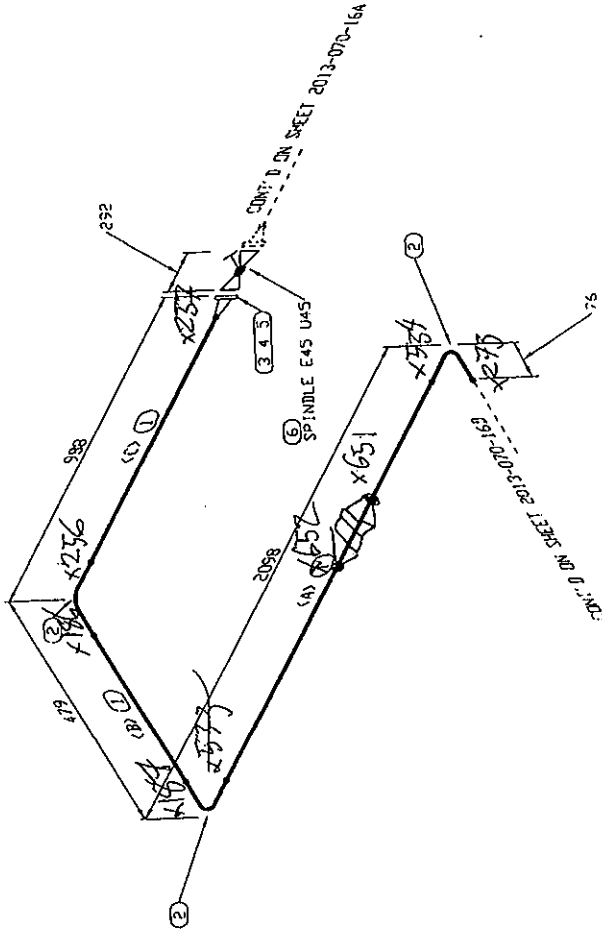
DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION.

DESIGN SPEC:	CS	WELD PROC:	CADO-5
DESIGN PRESS:	9376 KPA G	RADIOGRAPHY:	100%
DESIGN TEMP:	-29 DEG. C	FWHT:	N/A
WDMT:	1.6 MP	PICKLE & OIL:	N/A
TEST PRESS:	14064 KPA G	SANDBLAST:	SP-6
TEST MEDIA:	WATER	PAINT:	WARM OPEY
		INSULATION:	N/A
			NO
			REVISION

BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	2	PIPE, SMLS, BV, SCH. 80, A106 GR B	3085 MM	22.8
2	2	ELBOW, 90 DEG, LR, BV, SCH. 80, A234 GR	3	2.7
3	2	W/B	1	5.5
4	2	FLANGE, RF WN, CL 600, SCH. 80 BDR, A105N	1	1.0
5	5/8X108	GASKET, CL 600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	1	1.0
6	2	(8) STUD BOLTS V/ NUTS, A193 GR B7M / A194 GR 2HM VALVE, GLOBE, RF, NACE, CLASS 600, ASME, A105N	1	40.9
TOTAL FABRICATION WEIGHT				73.7

CUT PIPE LENGTH	SIZE
PIECE LENGTH (MM)	( INCH)
NUM	NUM
(A) 1939	2
(B) 320	2
(C) 886	2



CADO INDUSTRIES INC.		PENNWEST EXPLORATION	
7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8		2013-070-601	
TEL: (403) 279-6682; FAX: (403) 279-6687		4-WELL SEPARATOR SKID (BU-2000)	
CADO INDUSTRIES INC.		LOCATION:	
ISSUED FOR CONSTRUCTION		LINE TAG: V-2300 WATER OUTLET	
DATE: 11/12/2013		DRAWING NO.: 070-15E	
BY: [Signature]		REV: 0	
CHECKED: [Signature]			
APPROVED: [Signature]			
TEST PRESSURE: 14.284 MPa			
INSULATION: N/A			
TEST MEDIA: WATER			
WELD PROC.: CADO-5			
RADIOGRAPHY: 100%			
PHRT: N/A			
PICKLE & OIL: N/A			
SANDBLAST: SP-6			
PAINT: WARM GREY			
NO.:			
DATE:			
BY:			
CHK:			
WC:			
AP:			
WC:			
APR:			

PIPING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION.

PIPE SPEC.: CS

DESIGN PRESS.: 9376 KPaC

DESIGN TEMP.: 90 DEG. C

WELD PROC.: CADO-5

RADIOGRAPHY: 100%

PHRT: N/A

PICKLE & OIL: N/A

SANDBLAST: SP-6

PAINT: WARM GREY

INSULATION: N/A

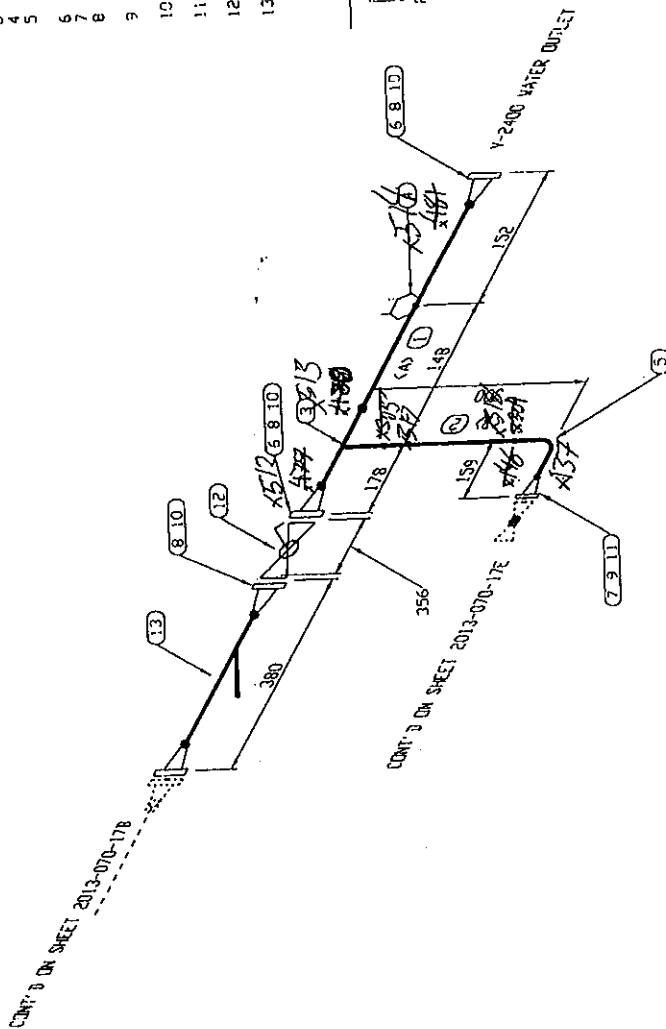
TEST MEDIA: WATER

BILL OF MATERIAL

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	3	PIPE, SMLS. BV, SCH. 80, A106 GR. B	119 MM	3.6
2	2	PIPE, SMLS. BV, SCH. 80, A106 GR. B	141 MM	1.0
3	3X2	TEE, RED. BV, SCH. 80, A234 GR. WPB	1	2.2
4	3X1/2	THREEDOLET, CL3000, A105N	1	0.2
5	2	ELBOW, 90 DEG. LR, 8W, SCH. 80, A234 GR. WPB	1	0.9
6	3	FLANGE, RFVN, CL600, SCH. 80 BORE, A105N	2	41.8
7	3	FLANGE, RFVN, CL600, SCH. 80 BORE, A105N	1	5.5
8	3	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	3	3.0
9	2	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	1	1.0
10	3/4X127	(B) STUD BOLTS W/ NUTS, A193 GR. B7M / A194 GR. 2HM	3	3.0
11	5/8X108	(B) STUD BOLTS W/ NUTS, A193 GR. B7M / A194 GR. 2HM	1	1.0
12	3	VALVE BALL RP, RF, NACE, CLASS 600 ASME, A105N	1	38.6
13	3	Y-STRAINER	1	1.0

TOTAL FABRICATION WEIGHT 101.4

PIECE NO.	LENGTH (MM)	SIZE (INCH)
(A)	119	3
(B)	141	2



CADO INDUSTRIES INC.		CUSTOMER: PENNWEST EXPLORATION	
7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8		UNIT NO.:	2013-070-501
TEL: (403) 279-6662; FAX: (403) 279-6667		MODEL:	4-WELL SEPARATOR SKID (BU-2000)
		LOCATION:	
		LINE TAG:	V-2400 WATER OUTLET
		DRAWING NO.:	070-17A
		REV.:	0

DATE	BY	CHK	APP
11/10/2013	AP	MC	MC

NO	REVISION
0	ISSUED FOR CONSTRUCTION

PIPE SPEC.	WELD PROC.	RADIOGRAPHY	PAINT	PICKLE & OIL	SANDBLAST	PAINT	INSULATION	TEST MEDIA
CS	CAD0-5	100%	N/A	N/A	SP-6	WARM GREY	N/A	WATER

DESIGN PRESS.	DESIGN TEMP.	NDMT	C.A.	TEST PRESS.
9376 KPAC	90 DEG. C	-29 DEG. C	1.6 mm	14084 KPAC

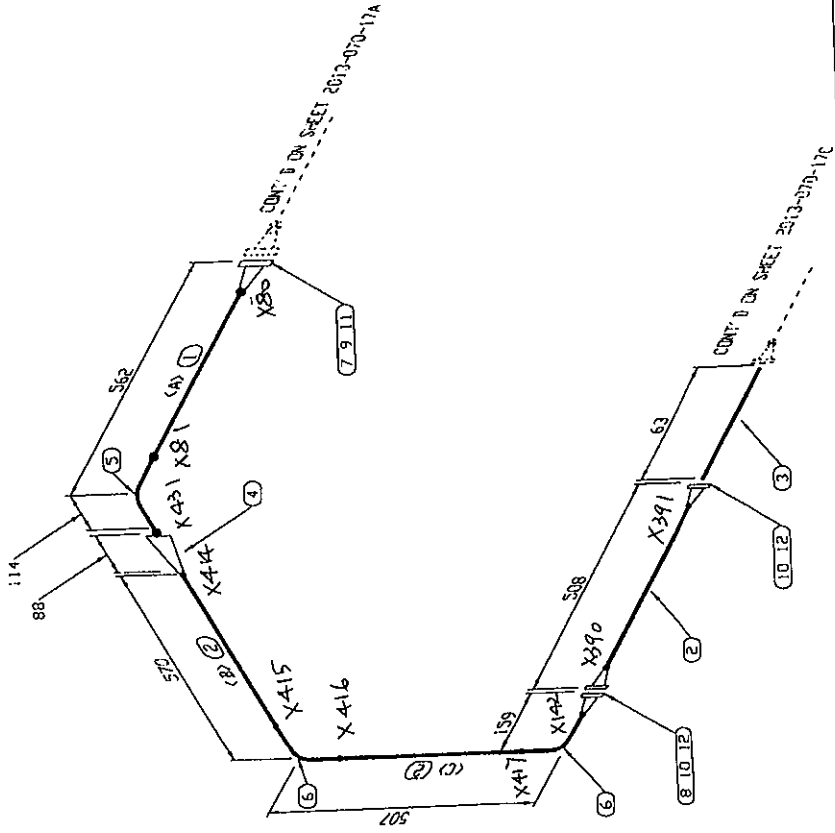
  

PIPE SPEC.	DESIGN PRESS.	DESIGN TEMP.	NDMT	C.A.	TEST PRESS.	TEST MEDIA
CS	9376 KPAC	90 DEG. C	-29 DEG. C	1.6 mm	14084 KPAC	WATER

PIPING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION.

SCHEDULE OF MATERIALS

MARK	SIZE	DESCRIPTION	QTY	WEIGHT
1	3	PIPE, SMLS. BV, SCH. 80, A106 GR B	352 MM	4.0
2	2	PIPE, SMLS. BV, SCH. 80, A106 GR B	1181 MM	8.9
3	2	TURBINE METER	63 MM	0.5
4	3X2	REDUCER, CONC. BV, SCH. 80, A234 GR VPB	1	0.9
5	3	EL.BOV. 90 DEG. LR, BV, SCH. 80, A234 GR VPB	1	2.1
6	2	EL.BOV. 90 DEG. LR, BV, SCH. 80, A234 GR VPB	2	1.8
7	3	FLANGE, RFWN, CL600, SCH. 80 BORE, A105N	1	10.5
8	2	FLANGE, RFWN, CL600, SCH. 80 BORE, A105N	1	16.4
9	3	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	1	1.0
10	2	GASKET, CL600 SPIRAL WOUND, 316 SS / FLEXIBLE GRAPHITE	2	2.0
11	3/4X127	(Ø) STUD BOLTS W/ NUTS, A193 GR B7M / A194 GR 2HM	1	1.0
12	5/8X108	(Ø) STUD BOLTS W/ NUTS, A193 GR B7M / A194 GR 2HM	2	2.0
TOTAL FABRICATION WEIGHT				50.7



PIECE NUM	LENGTH (MM)	SIZE (INCH)
(A)	352	3
(B)	490	2
(C)	348	2
(D)	343	2

**CADO INDUSTRIES INC.**  
 7491 - 110 AVE SE, CALGARY, ALBERTA T2C 3B8  
 TEL: (403) 279-6682; FAX: (403) 279-6887

CUSTOMER: PENNWEST EXPLORATION  
 UNIT NO.: 2013-070-601  
 MODEL: 4-WELL SEPARATOR SKID (BU-2000)  
 LOCATION:  
 LINE TAG: V-2400 WATER OUTLET  
 DRAWING NO.: 070-17E  
 REV: 0

PIPE SPEC:	CS	WELD PROC:	CADO-5
DESIGN PRESS:	9176 KPA	RADIOGRAPHY:	100%
DESIGN TEMP:	90 DEG. C	PKT:	N/A
NDMT:	-23 DEG. C	PICKLE & OIL:	N/A
CAI:	1.6 mm	SANDBLAST:	SP-6
TEST PRESS:	1408-	PAINT:	WARM GREY
TEST MEDIA:	WATER	INSULATION:	N/A

ISSUED FOR CONSTRUCTION  
 DATE: 11/10/2003  
 REV: 0

PIPING DESIGNED IN ACCORDANCE WITH ASME B31.3 2010 EDITION.  
 WELD PROC: CADO-5  
 RADIOGRAPHY: 100%  
 PKT: N/A  
 PICKLE & OIL: N/A  
 SANDBLAST: SP-6  
 PAINT: WARM GREY  
 INSULATION: N/A