



ORIGINAL

ENCANA PO#	P056396
NWP UNIT	LSD
09359-001	4-2-80-17W6
09359-002	2-12-81-18W6
09359-003	15-13-80-17W6

REV	DATE	BY	CHK	APP	DESCRIPTION
1	JUN 22/15	SF			RE-ISSUED FOR CONSTRUCTION
0	MAY 11/15	SF			RELEASED FOR CONSTRUCTION
C	MAY 04/15	SF			RELEASED FOR PRODUCTION
B	APR 09/15	SF			ISSUED FOR APPROVAL
A	FEB 03/15	SY			ISSUED FOR APPROVAL

DRAWING REVISIONS

ISSUED FOR CONSTRUCTION

SIGNED: _____

DATE: _____

W.O.: _____

S/N: _____

ALL DIMENSIONS IN INCHES

NWP INDUSTRIES LP

P.O. BOX 6280, INNISFAIL, AB T4G 1S9
PH: (403) 227-4100 FAX: (403) 227-4102

SCALE: _____
WEIGHT: (APPROX. LBS.) N.T.S.

ENCANA CORPORATION
SEPARATOR PACKAGE
36" OD x 10'0" S/S, 1440 PSI
3 PHASE, SOUR SERVICE

PIPING AND INSTRUMENTATION DIAGRAM

DWN: SF	CHK: <i>[Signature]</i>	APP: <i>[Signature]</i>
DATE: JUN 22/15	DATE: <i>June 26, 2015</i>	DATE: JUN 26 2015
SHEET: 1 OF 2	DWG: 09359-001-P-000	REV: 1

LINE TYPE LEGEND

	MAJOR PROCESS LINE
	UTILITY LINE
	BUILDING LIMITS
	ENCLOSURE LIMITS
	ALTERNATE LIMITS
	CUST/VENDOR SUPPL. LIMITS
	HIDDEN LINE
	EQUIPMENT OUTLINE
	INSTRUMENT PNEUMATIC LINE
	PROCESS/UTILITY TUBING LINE
	INSTRUMENT CAPILLARY LINE
	ELECTRICAL DATALINK LINE
	ELECTRICAL CONNECTION LINE
	HYDRAULIC LINE
	MECHANICAL LINK LINE

INSULATION LEGEND

	* THICKNESS C=COLD H=HOT PP=PERSONEL PROTECTION
	* THICKNESS c/w TRACING ET=ELEC. TRACE GT=GLYCOL TRACE OT=OIL TRACE ST=STEAM TRACE

VALVE SYMBOL LEGEND

	BALL VALVE
	SPRING RETURN BALL VALVE
	GLOBE VALVE
	GATE VALVE
	CHECK VALVE
	PLUG VALVE
	NEEDLE VALVE
	INLINE CHOKE VALVE
	4-WAY VALVE
	3-WAY VALVE
	BUTTERFLY VALVE
	BASKET/CONE STRAINER
	TEE STRAINER
	Y STRAINER
	RUPTURE DISC
	PRESSURE RELIEF VALVE
	ANGLE VALVE
	ANGLE CHOKE VALVE
	GAUGE VALVE
	BLOCK & BLEED NEEDLE VALVE
	MULTIPORT MANIFOLD

VALVE CONNECTION LEGEND

	THRD VALVE
	THRD/SW VALVE
	SW VALVE
	FLANGED VALVE

TOPWORKS SYMBOL LEGEND

	DIAPHRAGM ACTUATOR
	ACTUATOR WITH HANDWHEEL
	ACTUATOR WITH POSITIONER
	REGULATOR WITH HANDWHEEL
	BACK PRESS. REGULATOR
	PRESS. REDUCING REGULATOR
	PISTON ACTUATOR
	ACTUATOR WITH POSITIONER
	ROTARY PISTON ACTUATOR
	ROTARY MOTOR ACTUATOR
	SOLENOID

METERING

	METER RUN
	ORIFICE METER
	FLOW CONDITIONER
	VORTEX METER
	POSITIVE DISPLACEMENT METER
	TURBINE/PROPELLER METER
	MASS FLOW METER
	FLOW INDICATOR

MISC TAG SYMBOL LEGEND

	INSTR. GAS TO AND FROM
	INSTR. AIR TO AND FROM
	RTU
	I/P ELECTRO PNEUMATIC

MISC SYMBOLS LEGEND

	FLANGE / BLIND FLANGE
	BW CAP / THRD CAP
	UNION
	TOL/CPLG w/PLUG
	BREAK
	CONCENTRIC REDUCER
	CONCENTRIC SWAGE
	ECC REDUCERS
	SKID EDGE SCARFED VENT
	FLEXIBLE HOSE
	CAMLOCK CONNECTION
	SPEC. BLIND-CLOSED/OPEN
	PIPE/TUBING FLOW ARROW
	SPEC/RESPONSIBILITY BREAK
	FLANGED NOZZLE
	MANWAY
	PANEL LOAD
	GROUND
	SKID DRAIN
	PIG BAR
	CONNECTION INDICATOR/PAGE CONTINUATOR
	LIGHT
	SPEED CONTROL
	SWITCHING VALVE (AMOT)
	CONSTRUCTION REVISIONS
	MUFFLER

ORIGINAL

GENERAL NOTES

- SHOP INSTALL ADDITIONAL PIPE SUPPORTS WHERE REQ'D.
- SHIP LOOSE ITEMS TO BE BOXED AND SEALED PRIOR TO SHIPMENT.
- PLUG AND PROTECT ALL OUTLETS PRIOR TO SHIPMENT.
- ROUTE PIPING TO ENSURE NO LIQUID TRAPS.
- ALL PIPING MATERIAL TO BE STANDARD TEMP U.N.O.
- HYDROTEST PROCESS PIPING TO 1.5 x M.A.W.P.
- ALL PIPING AND PROCESS TUBING LINES TO BE TESTED PER ASME B31.3 NFS
- INSTRUMENT SUPPLY LINES TO BE TESTED PER ABSA AB-522 DIRECTIVE

CUSTOMER NOTES

- 316SS SEAMLESS TUBING AND 316SS FITTINGS.
- VENT INSTRUMENTS TO COMMON 2" VENT HEADER.
- NO LIQUID TRAPS.
- VENT OUTSIDE BUILDING TO ATMOSPHERE AT EAVE HEIGHT (Sweet Vent Only)
- SURFACE PREPARATION: SSPC-SP-63 COMMERCIAL BLAST
PAINT: 2s/c CLOVERDALE 835 SERIES DTM POLYURETHANE ENAMEL 2-3milsDFT
COLOR: ENCANA TAUPE
- ELECTRICAL BY NWP as per PDL LISTING.
- MOUNT BLUE BEACON ON OUTSIDE OF BUILDING WALL NEAR DOOR.
- UNDERSKID 3" POLYURETHANE INSULATION
- ALL THREADED MATERIALS ON PROCESS LINES TO BE S/XXH 6M FITTINGS.
- TUBE TO OPERATOR HEIGHT.

REV A

REV A	ABBREVIATIONS		
ASSY - ASSEMBLY	HPV - HIGH POINT VENT	MISC. - MISCELLANEOUS	
ATM - ATMOSPHERE	HS - HYDRAULIC SUPPLY	PD - POSITIVE DISPLACEMENT	
BBL - BARREL	HT - HEAT TRACE	P/I - PNEUMATIC TO CURRENT	
BD - BLOWDOWN	IA - INSTRUMENT AIR	P/L - PIPELINE	
BTU - BRITISH THERMAL UNITS	ID - INSIDE DIAMETER	PLC - PROGRAMMABLE LOGIC CONTR.	
CC - CORROSION COUPON	IG - INSTRUMENT GAS	PO - PUMP OUT	
CP - CORROSION PROBE	INJ. PT - INJECTION POINT	RF - RAISED FACE	
CSC - CAR SEAL CLOSED	I/P - CURRENT TO PNEUMATIC	RO - RESTRICTION ORIFICE	
CSO - CAR SEAL OPEN	1/S - INSIDE	RP - REDUCED PORT	
c/w - COMPLETE WITH	LLL - LOW LIQUID LEVEL	RTJ - RING TYPE JOINT	
DB&B - DOUBLE BLOCK & BLEED	LPD - LOW POINT DRAIN	RTU - REMOTE TRANSMITTING UNIT	
ESD - EMERGENCY SHUTDOWN	LSO - LEGAL SUBDIVISION	SP - SAMPLE POINT	
ET - ELECTRICAL TRACE	MAMP - MAX. ALLOW. WORK PRES.	s/c - SHOP COAT	
FC - FAIL CLOSE	MDMT - MIN. DESIGN METAL TEMP.	SG - SPECIFIC GRAVITY	
FFSD - FAIL CLOSE	MCC - MOTOR CONTROL CENTER	SS - STAINLESS STEEL	
FO - FAIL OPEN	MISC. - MISCELLANEOUS	S/S - SEAM TO SEAM	
FRD - FLOAT RELEASE DEVICE	NC - NORMALLY CLOSED	TK - TANK	
FP - FULL PORT	NLL - NORMAL LIQUID LEVEL	T/T - TANGENT TO TANGENT	
GO - GEAR OPERATED	NO - NORMALLY OPEN	UNO - UNLESS NOTED OTHERWISE	
GT - GLYCOL TRACE	NTS - NOT TO SCALE	VH - VENT HEADER	
HC - HOSE CONNECTION	OD - OUTSIDE DIAMETER	ZSC - POSITION/LIMIT SWITCH CLOSE	
HLL - HIGH LIQUID LEVEL	O/S - OUTSIDE	ZSO - POSITION/LIMIT SWITCH OPEN	

INSTRUMENTATION IDENTIFICATION AS PER ANSI/ISA-5.1-2009					
LETTER	FIRST LETTERS		SUCCEEDING LETTERS		
	COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4	COLUMN 5
	MEASURED/INITIATING VARIABLE	VARIABLE MODIFIER	READOUT/PASSIVE FUNCTION	OUTPUT/ACTIVE FUNCTION	FUNCTION MODIFIER
A	ANALYSIS		ALARM		
B	BURNER, COMBUSTION		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C	USER'S CHOICE			CONTROL	CLOSE
D	USER'S CHOICE	DIFFERENCE, DIFFERENTIAL			DEVIATION
E	VOLTAGE		SENSOR, PRIMARY ELEMENT		
F	FLOW, FLOW RATE	RATIO			
G	USER'S CHOICE		GLASS, GAUGE, VIEWING DEVICE		
H	HAND				HIGH
I	CURRENT		INDICATE		
J	POWER		SCAN		
K	TIME, SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		LOW
M	USER'S CHOICE				MIDDLE, INTERMEDIATE
N	USER'S CHOICE		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
O	USER'S CHOICE		ORIFICE, RESTRICTION		OPEN
P	PRESSURE		POINT (TEST CONNECTION)		RUN
Q	QUANTITY	INTEGRATE, TOTALIZE	INTEGRATE, TOTALIZE		STOP
R	RADIATION		RECORD		
S	SPEED, FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	
V	VIBRATION, MECHANICAL ANALYSIS			VALVE, DAMPER, LOUVER	
W	WEIGHT, FORCE		WELL, PROBE		
X	UNCLASSIFIED	X-AXIS	ACCESSORY DEVICES, UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE, PRESENCE	Y-AXIS		AUXILIARY DEVICES	
Z	POSITION, DIMENSION	Z-AXIS, SAFETY INSTRUMENTED SYSTEM		DRIVER, ACTUATOR, UNCLASSIFIED FINAL CONTROL ELEMENT	

REV A.1	VALVE TAGGING	
	BALL VALVE (FULL PORT) - BF	XX XXX XX
	BALL VALVE (REG. PORT) - BR	
	BUTTERFLY VALVE - BU	
	CHECK VALVE (BALL) - CB	025 - 1/4"
	CHECK VALVE (PISTON) - CP	038 - 3/8"
	CHECK VALVE (SWING) - CS	050 - 1/2"
	CHECK VALVE (WAFFER) - CW	075 - 3/4"
	GATE VALVE - GA	100 - 1"
	GLOBE VALVE - GL	200 - 2"
	STRAINER (BASKET) - SB	201 - 2" 150 ANSI
	STRAINER (T) - ST	303 - 3" 300 ANSI
	STRAINER (Y) - SY	406 - 4" 600 ANSI
	SWAGELOK - SW	609 - 6" 900 ANSI
	NEEDLE VALVE (FEMALE x FEMALE) - NF	815 - 8" 1500 ANSI
	NEEDLE VALVE (MALE x FEMALE) - NM	1025 - 10" 2500 ANSI
	MANIFOLD - MF	
	G - GAS SERVICE	
	H - HIGH PRESSURE	
	L - LOW TEMP.	
	N - NACE	
	Z - BOM CLARIFIER (1,2,...)	
	LINE TAGGING	
	XX-X"-X-XXXX-XXX	
	DRAIN - D	0100-0199 EMULSION
	EMULSION - E	0200-0299 PROCESS GAS
	FUEL GAS - FG	0300-0399 HYDROCARBON
	GLYCOL - G	0400-0499 WATER
	HYDROCARBON - HC	0500-0599 DRAIN
	INSTRUMENT AIR/GAS - IA/IG	0600-0699 PROCESS FLUID
	PROCESS GAS - PG	0700-0799 FUEL GAS
	PRESSURE RELIEF - PR	0800-0899 PRESSURE RELIEF
	WATER - W	0900-0999 OTHER
	VENT (ATMOS) - V	1000-1099 VENT (NO TESTING)
	2000# THRD/SW - T	
	3000# THRD/SW - W	
	6000# THRD/SW - X	
	NOMINAL PIPE SIZE	
	150 ANSI - A	
	300 ANSI - B	
	600 ANSI - C	
	900 ANSI - D	
	1500 ANSI - E	
	2500 ANSI - F	
	PIPE SCHEDULE	
	A - 316 SS TUBING w/ 316 SS FITTINGS	
	B - 316 SS TUBING w/ CS FITTINGS	
	C - NOT APPLICABLE	

REV A	TAG LEGEND				
	LOCALLY MOUNTED	PRIMARY LOC. OR PANEL NORMALLY ACCESS. TO OPER.	AUXILIARY LOC. OR PANEL NORMALLY ACCESS. TO OPER.	PRIMARY LOC. OR PANEL MOUNTED ON BACK OF PANEL	AUXILIARY LOC. OR PANEL MOUNTED ON BACK OF PANEL
DISCRETE					
SHARED DISPLAY, SHARED CONTROL DISTRIBUTION, CONTROL VIDEO DISPLAY					
COMPUTER FUNCTION, SOFTWARE FUNCTION					
PROGRAMMABLE LOGIC CONTROL					

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SHEET: 2 OF 2 DWG: 09359-001-P-000 REV: 1