



MEG ENERGY

CHRISTINA LAKE REGIONAL PROJECT  
Phase 3A EPC for Central Plant Facilities

SLI Project No. 511036



SNC-LAVALIN



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Vendor's drawing review for conformity with specifications and design drawing.

This review does not relieve the vendor of his responsibility for errors in design and detailing as detailed in his contract.

- A1 Not suitable to initiate fabrication. modify as noted, resubmit for review
- B1 Suitable to initiate fabrication as noted. modify as noted, resubmit for review
- C1 Suitable to fabricate to completion as noted. submit final documents including as-builts as required
- D1 Suitable to fabricate to completion. submit final documents including as-built documents as required
- E1 Not suitable as final documents as noted. modify as noted and resubmit.
- F1 Suitable as final documents. no further resubmittal required (unless revised by vendor)
- VX Vendor document cancelled.

Vendor: Sewon Cellontech Co. Ltd. - P00007

No.:E0351-3AE111-D-02

Rev:5

Doc. Title: H00.01 - GENERAL ASSEMBLY (2/3) - Tag:3A-E-111A-H

Client Code:

Project No: 511036

Date Rec'd: 2014/08/14

Reviewed by: SS

Document No:

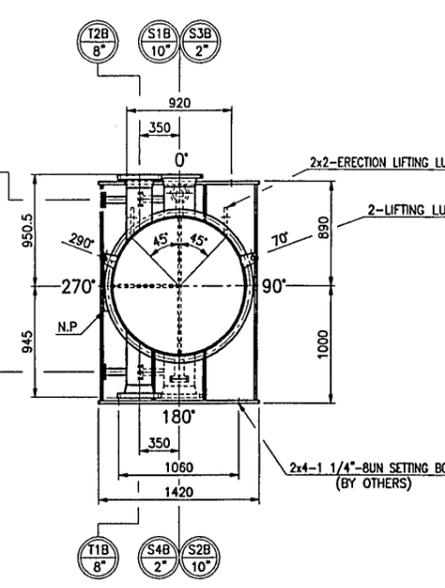
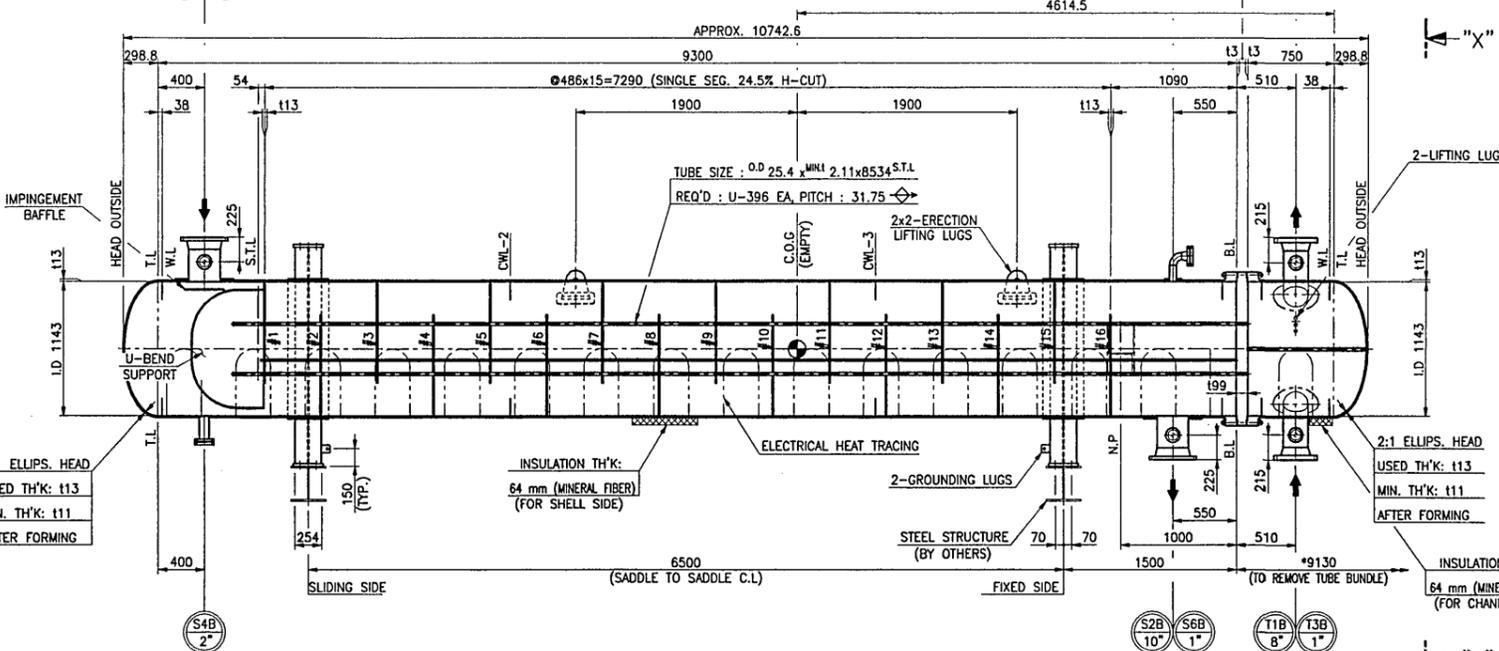
Submittal:

Date: 26-Aug-2014

P-5310-01-0012

06

3A-E-111B,D,F,H



REFERENCE DRAWINGS

1. GENERAL ASSEMBLY (1/3) [FOR 3A-E-111A,C,E,G]	E0351-3AE111-D-01
= BLANK =	E0351-3AE111-D-03
= BLANK =	E0351-3AE111-D-04
4. GENERAL ASSEMBLY (3/3)	E0351-3AE111-D-05
5. DETAIL OF BODY (1/2)	E0351-3AE111-D-06
6. DETAIL OF BODY (2/2)	E0351-3AE111-D-07
7. DETAIL OF TUBE BUNDLE (1/2)	E0351-3AE111-D-08
8. DETAIL OF TUBE BUNDLE (2/2)	E0351-3AE111-D-09
9. DETAIL OF U-BEND SUP'T	E0351-3AE111-D-10
10. DETAIL OF SUP'T SADDLE (1/2) [FOR 3A-E-111A,C,E,G]	E0351-3AE111-D-11
= BLANK =	E0351-3AE111-D-12
12. DETAIL OF SUP'T SADDLE (2/2) [FOR 3A-E-111B,D,F,H]	E0351-3AE111-D-13
= BLANK =	E0351-3AE111-D-14
14. DETAIL OF INSUL. SUP'T (1/2)	E0351-3AE111-D-15
15. NOZZLE DETAIL "S1A,S2A,S2B"	E0351-3AE111-D-16
16. NOZZLE DETAIL "S1B"	E0351-3AE111-D-17
17. NOZZLE DETAIL "S3A,S4B"	E0351-3AE111-D-18
18. NOZZLE DETAIL "S4A,S3B"	E0351-3AE111-D-19
19. NOZZLE DETAIL "T1A,T2A,T1B"	E0351-3AE111-D-20
20. NOZZLE DETAIL "T2B"	E0351-3AE111-D-21
21. NOZZLE DETAIL "S5A,B,S6A,B & T3A,B,T4A,B"	E0351-3AE111-D-22
22. DETAIL OF EHT GENERAL ASSEMBLY (1/2)	E0351-3AE111-D-23
23. DETAIL OF NAME PLATE	E0351-3AE111-D-24
24. DETAIL OF EHT GENERAL ASSEMBLY (2/2)	E0351-3AE111-D-25
= BLANK =	E0351-3AE111-D-26
= BLANK =	E0351-3AE111-D-27
27. DETAIL OF EHT WIRING(1/8) ~ WIRING(8/8)	E0351-3AE111-D-28~35
28. DETAIL OF INSUL. SUP'T (2/2)	E0351-3AE111-D-36

FOR APPROVAL ASME-U

ASME STAMP

DESIGN & TEST DATA

QTY TO BE MANUFACTURED	4 (FOUR)	
CODE	ASME SEC. VIII DIV. 1 2010 ED.+2011 ADD. & TEMA CLASS 2 <sup>ND</sup> 9TH ED.-2007 + API 660 8TH ED.	
ASME CODE STAMP	YES	
CRN. NO.	TBD	
NATIONAL BOARD REGISTRATION	YES	
TYPE	H-BEU	
EFFECTIVE SURFACE AREA (PER SHELL) (m <sup>2</sup> )	556.4	
SPECIAL SERVICE	NO	NO
FLUID CIRCULATED	BP FRAC DIBIT	TEQ/WDR (GAL/HR W)
DENSITY (LIQ./VAP.) kg/m <sup>3</sup> (LBS/FT <sup>3</sup> )	875/- / 921/-	1078/- / 1052/-
NO. OF PASS	1 (ONE)	4 (FOUR)
PRESSURE (Kpsig)	DESIGN (P <sub>DES</sub> ) 1450/F.V. 1500/F.V.	OPERATING 890 900
TEMPERATURE (°C)	DESIGN (P <sub>DES</sub> ) 178	OPERATING (P <sub>OP</sub> ) 117.9/49.7 40/75
TEST PRESS. (Kpsig)	HYDRO. 1989	2072
M.A.W.P (HOT&CORRODED) (Kpsig)	1530	1594
M.A.W.P LIMITING COMPONENT	SHELL GRTH FLANGE	CHANNEL GRTH FLANGE
M.A.P (NEW&COLD) (Kpsig)	1757	1757
M.A.E.W.P (Kpsig)	F.V	F.V
P.W.H.T	NO	NO
STRESS RELIEVE AFTER FORMING	NO	NO
RADIOGRAPHY (S/H)	SPOT/FULL	SPOT/FULL
JOINT EFFICIENCY	SHELL 0.85	HEAD 1.0
CORR. ALLOW. (MM)	3.2	3.2
M.D.M.T (°C)	-29	-29
IMPACT TEST	SEE NOTE 14.	SEE NOTE 14.
INSULATION (MM)	64	64
FIRE PROOFING (MM)	NONE	
PAINTING SPECIFICATION	SEE NOTE 26.	
TOLERANCE	SEE NOTE 13.	
TUBE TO TUBE SHEET JOINT	ROLLED (TWO GROOVES) AND EXPANDED	
WIND CODE	NBC 2005, IMPORTANCE FACTOR = 1.15 WIND SPEED=113km/HR	
SEISMIC CODE	NBC 2005, IMPORTANCE FACTOR=1.3 SITE CLASS = D, SA(0.2)=0.12 SA(0.5)=0.056, SA(1.0)=0.023, SA(2.0)=0.008	
WEIGHT (KG)	FABRICATION 17440	ERECTOR 17990
	EMPTY 17990	OPERATING 37950
	TEST (SHOP/FIELD) 28530/28530	BUNDLE 10950

MATERIAL SPECIFICATION

SHELL HEAD	SA516-70N	STUD BOLTS AND NUTS	
CHANNEL HEAD	SA516-70N	-SHELL COVER	-
SHELL FLANGE	SA266-2N	-STATIONARY	SA193-B7/SA194-2H
CHANNEL FLANGE	SA266-2N	-CHANNEL COVER	-
TUBE SHEET	SA266-2N	-FLOATING	-
FLOATING HEAD COVER	-	-SHELL SIDE NOZZ.	SA193-B7/SA194-2H
FLOATING HEAD FLANGE	-	-TUBE SIDE NOZZ.	SA193-B7/SA194-2H
BACKING DEVICE	-	GASKETS	
TUBES	SA179 (SEAMLESS)	-SHELL COVER	-
BAFFLES or SUPPORT	SA516-70	-SHELL CHANNEL END	SEE *1)
IMPINGEMENT BAFFLE	SA516-70	-CHANNEL SHELL END	SEE *1)
TIE ROD / SPACER	SA36 / SA53-B	-CHANNEL COVER	-
PASS PARTITION PLATE	SA516-70N	-FLOATING	-
SHELL NOZZLE -NECK	SA106-B	-SHELL SIDE NOZZ.	SEE *2)
-FLANGE	SA105N	-TUBE SIDE NOZZ.	SEE *2)
CHANNEL NOZZLE -NECK	SA106-B	SUPPORT SADDLES / PAD	SA516-70N/SA516-70N
-FLANGE	SA105N	EARTH LUG & NAME PLATE	SA240-304
EXPANSION JOINT	-	SETTING BOLT/NUT	SA325 (BY OTHERS)

\*1) GASKET MATERIAL : DOUBLE METAL JACKET GASKET  
 - FILLER : GRAPHITE  
 - JACKET : C.S  
 \*2) SPIRAL WOUND (14.5) : \* FILLER : GRAPHITE \* INNER RING : 316 S.S \* OUTER RING : C.S

2014 07.30	REVISED AS MARKED	B.C.CHIN	J.W.KIM	H.U.KOO
2014 02.26	REVISED AS MARKED	B.C.CHIN	J.W.KIM	H.U.KOO
2013 11.09	REVISED AS MARKED	B.C.CHIN	J.W.KIM	H.U.KOO
2013 10.17	REVISED AS MARKED	B.C.CHIN	J.W.KIM	H.U.KOO
2013 08.21	REVISED AS MARKED	B.C.CHIN	J.W.KIM	H.U.KOO
2013 07.08	FOR APPROVAL	B.C.CHIN	J.W.KIM	H.U.KOO

CLRP PHASE 3A CENTRAL PLANT FACILITY; EPC

CUSTOMER: MEG ENERGY CORP.

CLIENT: SNC-LAVALIN

TITLE: SALES OIL/GLYCOL EXCHANGER

3A-E-111A~H GENERAL ASSEMBLY (2/3) [FOR 3A-E-111B,D,F,H]

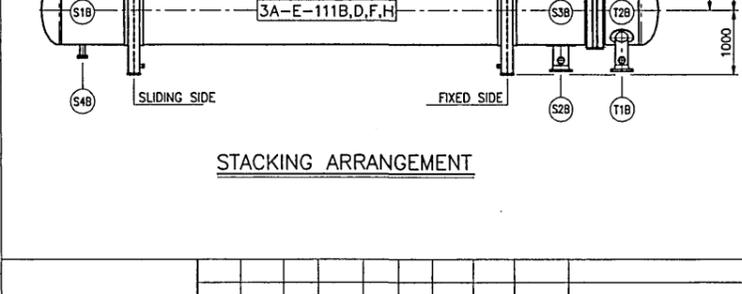
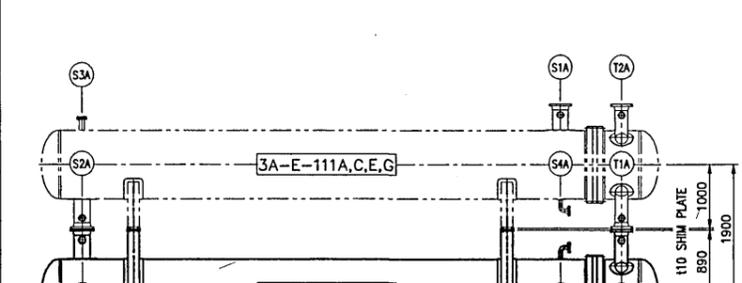
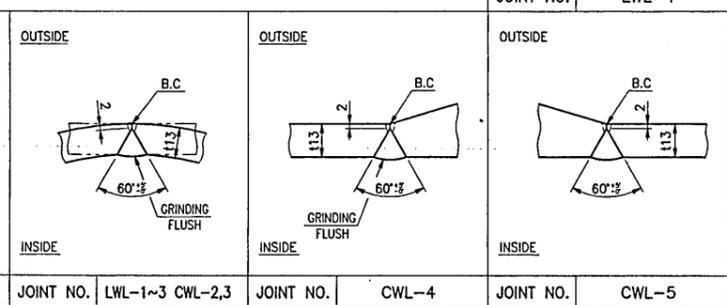
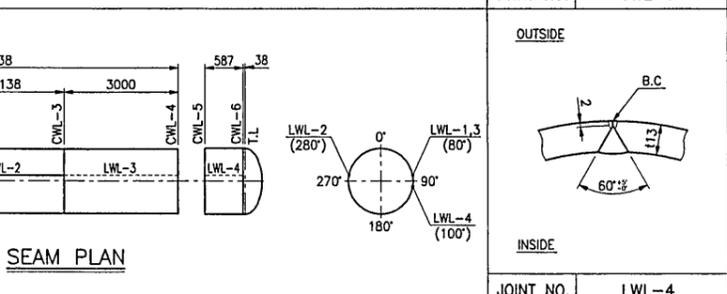
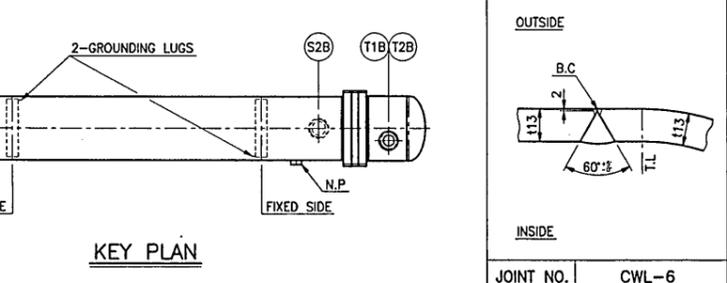
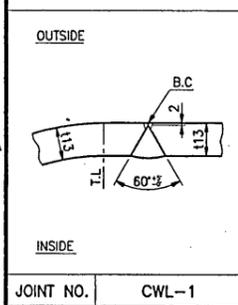
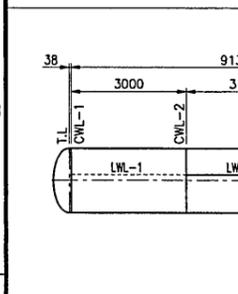
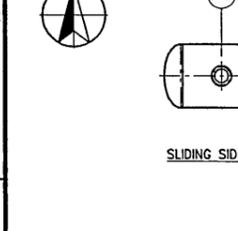
SEWON CELLONTECH CO., LTD. CHANGWON, KOREA

OWNER JOB NO. 511036 PROJECTION METHOD THIRD ANGLE PROJECTION SCALE SEE DWG.

P/D NO. P-5310-01 OWNER DWG. NO.

SEWON JOB NO. E-0351 SEWON DWG. NO. E0351-3AE111-D-02 WORKS C

TYPICAL NOZZLE ASSEMBLY



NOZZLE SCHEDULE

MARK	NOM SIZE	NO.	RATING	TYPE	FACING	THICK	PROJ.	EX-ORD	REIN.PAD	SERVICE & REMARKS
T3B,T4B	1"	2	ASME 300	L.W.N	R.F	-	315	-	-	FIELD HYDROTEST (W/B.F)
S5B,S6B	1"	2	ASME 300	L.W.N	R.F	-	340	-	-	FIELD HYDROTEST (W/B.F)
T2B	8"	1	ASME 300	W.N	R.F	SCH 80	790	SEE DWG.	113x400	TUBE SIDE OUTLET
T1B	8"	1	ASME 300	W.N	R.F	SCH 80	790	SEE DWG.	113x400	TUBE SIDE INLET
S4B	2"	1	ASME 300	L.W.N	R.F	-	790	-	-	DRAIN (W/B.F)
S3B	2"	1	ASME 300	W.N	R.F	SCH 80	790	SEE DWG.	113x150	VENT (W/B.F)
S2B	10"	1	ASME 300	W.N	R.F	SCH 80	945	SEE DWG.	113x9510	SHELL SIDE OUTLET
S1B	10"	1	ASME 300	W.N	R.F	SCH 80	950.5	SEE DWG.	113x9510	SHELL SIDE INLET