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.:D0644-COM-P-58	Rev: 1
Doc. Title:	D00.01 - COMPLETED BUYER'S EQUIPMENT DATA SHEET - Tag: 3A-V-574	
Client Code:	Project No: 511036	Date Rec'd: 2014/11/10
Reviewed by: C.Simons Date: 08 December 2014	Document No: P-5120-01-0140	Submittal: 02

SEWON CELLONTECH	DOCUMENT FOR EQUIPMENT	SWC JOB NO	D-0644
		ITEM NO.	3A-V-574
		SWC DOC. NO.	D0644 -COM-P-58

MEG Energy Corp. SNC·LAVALIN

P.O NO.	P-5120-01
PROJECT NAME	CHRISTINA LAKE REGIONAL
PROJECT NO.	508298
DOCUMENT TITLE	Completed Buyer's Equipment Data Sheet
CODE	D00.01
ITEM NO.	ITEM DESCRIPTION
3A-V-574	Dry Instrument Air Receiver

FOR APPROVAL

SEWON CELLONTECH CORP. ISSUED 2014. 10. 29 Engineering Team KOREA

- Total Sheet : 4 Sheet (Including This Cover)

1	G.S.Gim 10/29/14	X	For HHCHO 10/29/14	SECOND ISSUE
0	G.S.GIM	B.J.KIM	H.H.CHO	FIRST ISSUE
REV.	PREPARED BY	REVIEWED BY	APPROVED BY	DESCRIPTION

SEWON CELLONTECH CO.,LTD.

PRESSURE VESSEL DATA SHEET

Data Sheet No.: DS-CL03A-C-500-V574

Specification No.: 085354-3010-PV-10

Requisition No.: 508298-000-45-MR-5120-0001

DESIGN DATA

Service	Dry Instrument Air Receiver			
Operating Temperature	43.0 °C	Pressure	865.0	kPag
Design Temp. Min.:	2 -29.0 °C	Max.:	80.0	°C
Design Pressure @ Minimum Temperature:			1034.0	kPag
@ Maximum Temperature:			1034.0	kPag
Sour Service	No	Lethal Service	No	
New Vessel MAWP Limited by	BTM HEAD @		1054	kPag
Corrosion Allowance - Shell / Heads	1.6	/	1.6	mm
Weld Thickness - Shell / Heads	2 17	/	2 17(Min)	mm
Joint Efficiency - Shell / Heads	1.0	/	1.0	
Registration	Alberta	Design Code	ASME Sec VIII D1	
Code Stamp	Yes,U Stamp	Orientation	Vertical	
Post Weld Heat Treatment	Per Code			
Head Type	2:1 Semi-elliptical with 50 mm SF			
Allowable Stress @ Design Temperature	Per Code			kPa
Ambient Temperature	2 10 °C	Max Wind Speed	31.4	m/s
Minimum Metal Design Temperature		2 -29		°C
Fluid	Dry Air	Fluid Density	991 (Liquid)	kg/m³

PAINTING & INSULATION

External Surface Preparation	Per Spec 085354-3010-PC-50 Table 3,System A1
Internal Surface Preparation	N/A 2
Structural Surface Preparation	N/A
Vessel External Prime	Per Spec 085354-3010-PC-50 Table 3,System A1
Vessel Internal Prime	N/A 2
Structural Prime	N/A
Vessel External Finish	Per Spec 085354-3010-PC-50 Table 3,System A1
Vessel Internal Finish	N/A 2
Structural Finish	N/A
External Insulation - Shell	N/A 2
External Insulation - Heads	N/A 2
Internal Insulation	N/A
External Cladding	N/A 2
Insulation - Bottom Head	N/A 2
Insulation - Skirt	N/A
Fireproofing - Skirt	N/A
Fireproofing - Saddles	N/A

MATERIALS

Shell	SA516 Gr 70N	Repads	SA516 Gr 70N
Heads	SA516 Gr 70N	Fittings	2 SA234 WPB
Trays	N/A	Supports	SA516 Gr 70N
Bolts/Nuts	SA193 B7/SA194 2H 2	Flanges	2 SA105N
Nozzle-Necks	2 SA106 Gr B	Gaskets	SPW SS 316
Internal Lining	N/A	Pipe	2 SA106 Gr B
Internals	N/A	Mist Eliminator	N/A
Structural Attachments - External	SA516 Gr 70N		
Structural Attachments - Internal	SA516 Gr 70N		
Material Impact Test Required	Per Code		
Certified Elevated Temp Tests Req'd	No		

DIMENSIONAL/SHIPPING DATA

Vessel Size	3960	mm ID	x	11270	mm S/S
Boot/Gas Dome	N/A	mm OD	x	N/A	mm S/S
Capacity	152.6	m³			
Centerline/Bottom Seam Elevation			*		m
Weight - Empty	37725 kg	Weight - Hydrotest		195525	kg
Weight - Operatg	60030 kg	Weight - Shipping		39300	kg
O/A Shipping Dimensions (LxWxH)			*		m
Nozzle Covers/Connection Plugs	Required				
Shipping Saddles	Required				
Ocean Transport Protection	Required (If applicable)				

ACCESSORIES BY FABRICATOR

Manway Davits	Y	Ladders	N
Ladder and Platform Clips	N	Platforms	N
Pipe Support and Guide Clips	Y	Lifting Lugs	Y
Insulation Supports	2 N	Pipe Coil	N
Insulation Supports Bottom Head	Y	Anodes	N
Fireproofing Supports	N	Nameplate	Y
Skirt	Y	Mist Eliminator	N
Tray/Packing Supports	N	Vortex Breaker	N
Manway Internal Grab Rungs	Y	Two Grounding Lugs	Y
Siphon Drains on Nozzles			

QUALITY CONTROL / INSPECTION / TESTING

Hydrotest Pressure	Per Code kPag
Hydrotest Medium	Water
Hydrotest Duration	Min 1 hrs
Radiographic Inspection	RTI 2
Ultrasonic Inspection	Per Spec 085354-3010-PV-10
Magnetic Particle Inspection	Per Spec 085354-3010-PV-10 2
Dye Penetrant Inspection	Per Spec 085354-3010-PV-10 2
Material Mill Test Reports	Per MR,Section III
Post Weld Heat Treatment Records	Per MR,Section III
Hydrotest Reports	Per MR,Section III
Radiographic Inspection Reports	Per MR,Section III
Ultrasonic Inspection Reports	Per MR,Section III
Magnetic Particle Inspection Reports	Per MR,Section III
Dye Penetrant Inspection Reports	Per MR,Section III
Fabricator Quality Control Manual	Per MR,Section III
Shop Inspection by Owner	Yes
Welding Procedure Review/Approval	Per MR,Section III

* Vendor to specify / Confirm

NOTES

1) Design condition - liquid level shall be 1000mm from bottom seam. Liquid specific gravity shall be considered 1.
2) Structural attachments are defined as any non-pressure part welded directly to the shell or head.
3) All manways shall be completed with internal grab rungs.
4) All davits on inclined manways shall open horizontally.
5) All skirt to shell and lift lug welds shall be MPI examined all around.
6) Seller shall supply the base plate template.
7) All process nozzles of pressure vessels shall be designed to withstand loading and moments as specified in project spec # 085354-4060-PS-001.
8) Nozzles N2 shall be provided with the pipe support and guide type VS-5 and VG-2. Seller shall design and install suitable support clips using the support guide detail drawing and loads supplied by Buyer. Piping loads imposed to the vessel wall shall be considered in the vessel design calculations.

REVISIONS

NO.	DATE	BY	CHK	APP	DESCRIPTION
A	25-May-12	SM	RA	SP	Issued for Squad Check
B	13-Jun-12	SM	RA	SP	Issued for Quotation
0	15-Oct-12	SM	RA	SP	Issued for Purchase
1	28-Mar-13	WW	AH/RA	CS	Re-issued for Purchase
2	5-Sep-13	WW	Charels S.	CS	Re-issued for Purchase

MEG Energy Corp. SNC·LAVALIN

PROJECT: MEG Energy Christina Lake Regional Project Phase 3 A

JOB NO.: 508298 | TAG NO.: 3A-V-574

LOCATION: Calgary,Alberta | PAGE: 1 of 3

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PRESSURE VESSEL DATA SHEET

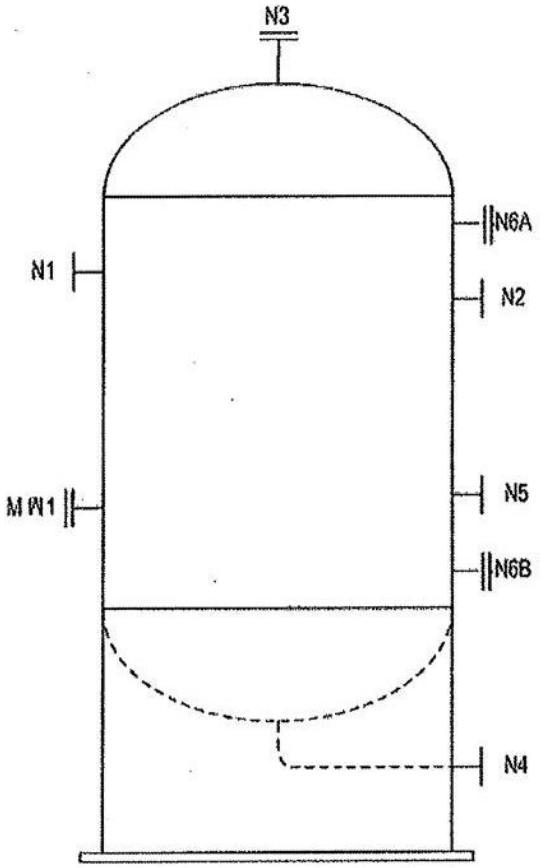
Data Sheet No.: DS-CL03A-C-500-V574

Specification No.: 085354-3010-PV-10 Requisition No.: 508298-000-45-MR-5120-0001

CONNECTION SCHEDULE

Mark	Nominal Size NPS	Qty	Flange ASME Class	Flange Type	Service	Projection (Note 9) (mm)
N1	6	1	150	RFWN	Inlet	Note 9
N2	6	1	150	RFWN	Outlet	Note 9
N3	6	1	150	RFWN	Vent, c/w blind flange, gasket, bolts & nuts	Note 9
N4	4	1	150	RFWN	Drain	Note 9
N5	2	1	150	RFWN	Auxiliary Relief	Note 9
N6A/B	2	2	150	RFWN	PIT c/w blind flange, gasket, bolts & nuts (Size shall be confirmed during detail engineering)	Note 9
MW1	24	1	150	RFWN	Manway, c/w blind flange, gasket, bolts & nuts, davit	Note 9
						Note 9

VESSEL SKETCH



9) Nozzle projections shall be as per spec. 085354-3010-PV-10 as a minimum, and required projections shall be confirmed during detail engineering.

10) Skirt length (measured from bottom head weld seam to underneath of base ring) shall be 1800 mm.To be confirmed during detail engineering.

11) Deleted. 2

12) Deleted. 2

13) Deleted. 2

14) Deleted. 2

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MEG Energy Corp. SNC-LAVALIN

PROJECT: MEG Energy Christina Lake Regional Project Phase 3 A

JOB NO.: 508298 TAG NO.: 3A-V-574

LOCATION: Calgary,Alberta PAGE: 2 of 3

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PRESSURE VESSEL DATA SHEET			Data Sheet No.:		DS-CL03A-C-500-V574
Specification No.:	085354-3010-PV-10		Requisition No.:		508298-000-45-MR-5120-0001
PROCESS CONDITIONS					
OPERATING CASE					
Fluid			Dry Air		
Operating Pressure	Max/Norm/Min	kPag	365/760/560		
Operating Temperature	Max/Norm/Min	°C	43		
Design Pressure		kPag	1034		
Design Temperature	Max/Min	°C	80/-29 (2)		
Slug/Surge Volume		m^3	-		
Service (Sweet / Sour)			-		
VAPOUR					
Flowrate		Sm^3/hr	3385 (Dry Air) (Note 1)		
Density	43°C,and 760 Kpag	kg/m^3	9.442		
Viscosity	43°C,and 760 Kpag	cP	0.0198		
Molecular weight			28.95		
LIQUID AQUEOUS					
Mass Flowrate		kg/h	0 (Normal)		
Density	43°C,and 760 Kpag	kg/m^3	991		
Viscosity		cP	0.62		

Notes:

1) Vessel design flow is 3385 Sm^3/h. However, max estimated flowrate is 3745 Sm^3/h (IA Compressor Package Design Flow).

2) The volume of the vessel should not be less than 156.5m^3.

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MEG Energy Corp. SNC·LAVALIN

PROJECT	MEG Energy Christina Lake Regional Project Phase 3A		
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