

FORM U-1 MANUFACTURER'S DATA REPORT FOR PRESSURE VESSELS
As Required by the Provisions of the ASME Boiler and Pressure Vessel Code Rules, Section VIII, Division 1

1. Manufactured and certified by SONDEX INC USA 7040 INTERNATIONAL DRIVE LOUISVILLE KY 40258
(Name and address of Manufacturer)
2. Manufactured for GENALTA POWER SUITE 1000 407 2ND STREET SW CALGARY AB T2P 2Y3 CANADA
(Name and address of Purchaser)
3. Location of installation UNKNOWN
(Name and address)
4. Type VERTICAL HEAT EXCHANGER 15561
(Horizontal, vertical, or sphere) (Tank, separator, jkt. vessel, heat exch., etc.) (Manufacturer's serial number)
W2019.2 104017111510 1577 2013
(CRN) (Drawing number) (National Board number) (Year built)
5. ASME Code, Section VIII, Div. 1 2010, 2011 2766 N/A
(Edition and Addenda, if applicable (date)) (Code Case number) (Special service per UG-120(d))

Items 6–11 incl. to be completed for single wall vessels, jackets of jacketed vessels, shell of heat exchangers, or chamber of multichamber vessels.

6. Shell: (a) Number of course(s) 64 (b) Overall length 8"

Course(s)			Material		Thickness		Long. Joint (Cat. A)			Circum. Joint (Cat. A, B & C)			Heat Treatment	
No.	Diameter	Length	Spec./Grade or Type		Nom.	Corr.	Type	Full, Spot, None	Eff.	Type	Full, Spot, None	Eff.	Temp.	Time
64	N/A	4' X 1' 3"	SA-240 316		.023"	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
-	-	-	-		-	-	-	-	-	-	-	-	-	-
-	-	-	-		-	-	-	-	-	-	-	-	-	-

7. Heads: (a) SA-516 GR 70 115 MINS @ 1710F (b) SA-516 GR 70 53 MINS @ 1670F
(Material spec. number, grade or type) (H.T. — time and temp.) (Material spec. number, grade or type) (H.T. — time and temp.)

	Location (Top, Bottom, Ends)	Thickness		Radius		Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure		Category A		
		Min.	Corr.	Crown	Knuckle					Convex	Concave	Type	Full, Spot, None	Eff.
(a)	END	2.50"	N/A	N/A	N/A	N/A	N/A	N/A	57" X 20"	N/A	N/A	N/A	N/A	NA
(b)	END	1.75"	N/A	N/A	N/A	N/A	N/A	N/A	55" X 20"	N/A	N/A	N/A	N/A	NA

If removable, bolts used (describe other fastening) BOLTS SA-193 B7M 1.375" QTY 10 NUTS SA-194 2HM 1.375" QTY 20
(Material spec. number, grade, size, number)

8. Type of jacket N/A Jacket closure N/A
(Describe as ogee and weld, bar, etc.)

If bar, give dimensions N/A If bolted, describe or sketch.

9. MAWP 300 N/A at max. temp. 212 N/A Min. design metal temp. -22 at 300
(Internal) (External) (Internal) (External)

10. Impact test SEE REMARKS at test temperature of N/A
(Indicate yes or no and the component(s) impact tested)

11. Hydro., pneu., or comb. test pressure HYDRO 390 Proof test N/A

Items 12 and 13 to be completed for tube sections.

12. Tubesheet N/A N/A N/A N/A N/A
(Stationary (material spec. no.)) (Diameter (subject to press.)) (Nominal thickness) (Corr. allow.) (Attachment (welded or bolted))
N/A N/A N/A N/A N/A
(Floating (material spec. no.)) (Diameter) (Nominal thickness) (Corr. allow.) (Attachment)
13. Tubes N/A N/A N/A N/A N/A
(Material spec. no., grade or type) (O.D.) (Nominal thickness) (Number) (Type (straight or U))

Items 14–18 incl. to be completed for inner chambers of jacketed vessels or channels of heat exchangers.

14. Shell: (a) No. of course(s) 64 (b) Overall length 8"

Course(s)			Material		Thickness		Long. Joint (Cat. A)			Circum. Joint (Cat. A, B & C)			Heat Treatment	
No.	Diameter	Length	Spec./Grade or Type		Nom.	Corr.	Type	Full, Spot, None	Eff.	Type	Full, Spot, None	Eff.	Temp.	Time
64	N/A	4' X 1' 3"	SA-240 316		.023"	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

15. Heads: (a) SA-516 GR 70 115 MINS @ 1710F (b) SA-516 GR 70 53 MINS @ 1670F
(Material spec. number, grade or type) (H.T. — time and temp.) (Material spec. number, grade or type) (H.T. — time and temp.)

	Location (Top, Bottom, Ends)	Thickness		Radius		Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure		Category A		
		Min.	Corr.	Crown	Knuckle					Convex	Concave	Type	Full, Spot, None	Eff.
(a)	END	2.50"	N/A	N/A	N/A	N/A	N/A	N/A	57" X 20"	N/A	N/A	N/A	N/A	NA
(b)	END	1.75"	N/A	N/A	N/A	N/A	N/A	N/A	55" X 20"	N/A	N/A	N/A	N/A	NA

If removable, bolts used (describe other fastening) BOLTS SA-193 B7M 1.375" QTY 10 NUTS SA-194 2HM 1.375" QTY 20
(Material spec. number, grade, size, number)

FORM U-1 (Back)

16. MAWP 300 N/A at max. temp. 212 N/A Min. design metal temp. -22 at 300
 (Internal) (External) (Internal) (External)
17. Impact test SEE REMARKS at test temperature of N/A
 (Indicate yes or no and the component(s) impact tested)
18. Hydro., pneu., or comb. test pressure PNEU 330 Proof test N/A
19. Nozzles, inspection, and safety valve openings:

Purpose (Inlet, Outlet, Drain, etc.)	No.	Diameter or Size	Type	Material		Nozzle Thickness		Reinforcement Material	Attachment Details		Location (Insp. Open.)
				Nozzle	Flange	Nom.	Corr.		Nozzle	Flange	
INLET	1	4"	StudPort	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
INLET	1	3"	StudPort	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
OUTLET	1	4"	StudPort	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
OUTLET	1	3"	StudPort	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

20. Supports: Skirt N/A Lugs N/A Legs N/A Others N/A Attached N/A
 (Yes or no) (Number) (Number) (Describe) (Where and how)
21. Manufacturer's Partial Data Reports properly identified and signed by Commissioned Inspectors have been furnished for the following items of the report (list the name of part, item number, Manufacturer's name, and identifying number):
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22. Remarks

SW40A-IS-64 PLATE FRAME HEAT EXCHANGER WITH SA-240 316 HEAT TRANSFER PLATES. ALL HEAT TRANSFER PLATES ARE EXEMPT FROM IMPACT TESTING PER UHA-51. HEAD (A) IMPACT TESTED TO -31F AND HEAD (B) IMPACT TESTED TO -22F. ALL BOLTING IS EXEMPT FROM IMPACT TESTING PER UCS-66. TWO SIDED CHAMBER: ITEMS: 14-18 DESCRIBE SECOND CHAMBER TWO SIDED CHAMBER.

CERTIFICATE OF SHOP COMPLIANCE

We certify that the statements in this report are correct and that all details of design, material, construction, and workmanship of this vessel conform to the ASME BOILER AND PRESSURE VESSEL CODE, Section VIII, Division 1.

U Certificate of Authorization Number 30,386 Expires 07/09/2016
 Date 8/20/2013 Name SONDEX INC USA Signed Brian Rhee
 (Manufacturer) (Representative)

CERTIFICATE OF SHOP INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State or Province of KY and employed by HSB of CT have inspected the pressure vessel described in this Manufacturer's Data Report on 8/22/2013, and state that, to the best of my knowledge and belief, the Manufacturer has constructed this pressure vessel in accordance with ASME BOILER AND PRESSURE VESSEL CODE, Section VIII, Division 1. By signing this certificate neither the Inspector nor his/her employer makes any warranty, expressed or implied, concerning the pressure vessel described in this Manufacturer's Data Report. Furthermore, neither the Inspector nor his/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 8/22/2013 Signed [Signature] Commissions NB 13796 AB Ky 01022
 (Authorized Inspector) [National Board (incl. endorsements), State, Province, and number]

CERTIFICATE OF FIELD ASSEMBLY COMPLIANCE

We certify that the statements in this report are correct and that the field assembly construction of all parts of this vessel conforms with the requirements of ASME BOILER AND PRESSURE VESSEL CODE, Section VIII, Division 1. U Certificate of Authorization Number Expires .

Date Name Signed
 (Assembler) (Representative)

CERTIFICATE OF FIELD ASSEMBLY INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State or Province of and employed by of , have compared the statements in this Manufacturer's Data Report with the described pressure vessel and state that parts referred to as data items , not included in the certificate of shop inspection, have been inspected by me and to the best of my knowledge and belief, the Manufacturer has constructed and assembled this pressure vessel in accordance with the ASME BOILER AND PRESSURE VESSEL CODE, Section VIII, Division 1. The described vessel was inspected and subjected to a hydrostatic test of . By signing this certificate neither the Inspector nor his/her employer makes any warranty, expressed or implied, concerning the pressure vessel described in this Manufacturer's Data Report. Furthermore, neither the Inspector nor his/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 Signed Commissions
 (Authorized Inspector) [National Board (incl. endorsements), State, Province, and number]