

PLAN

CODE:	ASME SECT. VIII, DIV. 1, LATEST EDITION
CODE CERT. REQ'D:	YES
CODE STAMP:	YES
NATIONAL BOARD REGISTRATION:	YES
OPR. PRESS:	720 PSIG @ 80° F
DES PRESS. (INTL):	900 PSIG @ 300° F
DES PRESS. (EXT):	15 PSI @ 300° F
MIN. METAL DES TEMP:	-20° F @ 900 PSIG
CA: SHELL =	1/8" HEADS = 1/8" NOZZ = 1/8"
SEISMIC PER:	NOTE 8
WIND PER:	NOTE 9
L.L. FOR DESIGN:	3'-0" @ SP. GR. 0.96
MAWP:	905 PSIG @ 300° F LIMITED BY BTM. HEAD
MAP N&C:	958 PSIG @ 60° F LIMITED BY BTM. HEAD
SHOP HYD:	1247 PSIG @ 60° F
FIELD HYD N&C:	- PSIG @ 60° F
FIELD HYD CORR.:	1170 PSIG @ 60° F
PWHT:	YES RADIOGRAPH RT - 1
JOINT EFF.:	100%
ALLOW. STRESS:	20,000 PSIG @ 300° F

MATERIALS	
SHELL:	SA-516-70 N + Z QUALITY + PWHT (NOTE 10, 18 & 19)
HEADS:	SA-516-70 N + Z QUALITY + PWHT (NOTE 10, 18 & 19)
SUPPORTS:	SA-516-70 N
INTERNALS:	316L SS TRAYS: N/A
BOLTS INT.:	SA-193-B8M NUTS: SA-194-8M
BOLTS EXT.:	SA-320-L7 NUTS: SA-194-7
FLANGES:	SA-350-LF2 NOZZ NECK: SA-333-6
GSKT:	NOTE 11
CAPACITY:	825 CU. FT.
FAB. WT.:	65,000 LBS. EMPTY WT.: 69,000 LBS.
TRAY WT.:	N/A INTERNAL WT.: 8,500 LBS.
OPR. WT.:	86,000 LBS. TEST WT. (SHOP): 115,000 LBS.
PAINTING:	NOTE 12
INSULATION:	NONE
FIREPROOFING:	YES

ACCESSORIES BY FABRICATOR		YES	NO
VESSEL DAVIT MARK No.			X
LADDER & PLATFORM CLIPS		X	
PIPE SUPPORTS AND PIPE GUIDE CLIPS			X
INSULATION SUPPORTS			X
FIREPROOFING SUPPORTS		X	
GROUNDING LUGS		X	
LIFTING LUGS		X	

NOZZLE SCHEDULE				
ITEM	No.	SIZE	PROJ	SERVICE
N1	1	20"	ELEV.	VAPOR EXIT
N2	1	20"	5'-1"	FEED
N3	1	4"	ELEV.	LIQUID EXIT
N4	1	2"	ELEV.	VENT
N5A	1	3"	4'-9"	LEVEL BRIDLE
N5B	1	3"	ELEV.	LEVEL BRIDLE
N6A	1	3"	4'-9"	LEVEL TRANSMITTER
N6B	1	3"	ELEV.	LEVEL TRANSMITTER
N7	1	2"	4'-9"	PURGE
N8	1	3"	4'-9"	PSV
N9	1	6"	ELEV.	INSPECTION PORT W/ BLIND
M1	1	24"	5'-3"	MANWAY W/BLD & DAVIT

FLANGE:	WNRF	FINISH:	125-250 AARH
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- NOTES: (CONT'D)
- EXTERNAL COATING = PER SPC-MA-00002 (EXCEPT UNDER SKIRT FIREPROOFING) ALL SURFACES (EXCEPT SKIRT) SHALL BE PAINTED PER TABLE 1. ABRASIVE BLAST CLEANING: SSSP-SP10
 - (1) COAT OF CARBOLINE CARBOZINC 11, 2.0-3.0 MILS DFT
 - (1) COAT OF CARBOLINE CARBOGUARD 893 SG, 4.0-6.0 MILS DFT
 - (1) COAT OF CARBOLINE CARBOTHANE 134 HG, 2.0-2.5 MILS DFT (OR LISTED EQUAL)
 SKIRT (OUTSIDE ONLY) ABRASIVE BLAST CLEANING: SSSP-SP10 2.0-2.5 PROFILE
 - (1) COAT OF INTERNATIONAL PAINT INTERGARD 269, 2.0-3.0 MILS DFT (NEEDS TO BE COMPATIBLE WITH CHARTEK 7 FIREPROOFING)
 - FOR THICK CS WELDS > 2" PREHEAT, FOR WELD JOINT, SHALL BE MAINTAINED UNTIL PWHT OR INTERMEDIATE STRESS RELIEF (ISR). ISR SHALL BE PERFORMED AT 1,000°F FOR 1 HOUR MINIMUM BEFORE COOLING FROM THE PREHEAT. THIS REQUIREMENT APPLIES TO WELD REPAIR AND REPAIRS MADE TO LOCATIONS WHERE SAMPLES ARE REMOVED.
 - IN LIEU OF ISR, DEHYDROGENATION HEAT TREATMENT (DHT) SHALL BE MADE AT 570°F FOR 1 HOUR MINIMUM FOR WELDS THAT ARE COOLED DOWN BEFORE PWHT. THE REQUIREMENTS FOR BOTH NOTES "12" & "13" ARE RECOMMENDED TO DRIVE OUT HYDROGEN FROM THE WELD METAL.
 - ALL NOZZLES SHALL BE INTEGRALLY REINFORCED IN ACCORDANCE WITH ASME SECTION VIII, DIVISION 1, FIGURE UW16.1 (f3), UW16.1 (f4) OR UW16.1 (e) AND SHALL HAVE WELDS 100% RADIOGRAPHED PER PARAGRAPH 5.1. OR FULL U.T. WHEN R.T. NOT PRACTICAL. IN ADDITION, NOZZLES WITH A DIAMETER LESS THAN 3" AND NOT INTEGRALLY REINFORCED MAY BE IN ACCORDANCE WITH UW16.1 (c), AND SHALL HAVE THE WELDS 100% ULTRASONIC INSPECTED.
 - ALL PRESSURE-CONTAINING WELDMENTS ARE TO BE CHECKED FOR HARDNESS OF WELD AND HEAT AFFECTED ZONE (HAZ), AFTER PWHT. THE MAXIMUM BRINELL HARDNESS (BHN) OF THE WELD AND BASE METAL IN HAZ SHALL NOT EXCEED 200 BHN.
 - SUPPLIER SHALL DESIGN & SUPPLY INTERNAL INLET SEPARATOR/DISTRIBUTOR, & MIST ELIMINATOR (SEE RPT-PI-WPZ-00020-001).
 - (4) GALVOTEC ALLOYS, INC. GA-MG-15-S SINGLE-STACK UNCOATED MAGNESIUM ANODES SHALL BE MOUNTED AT EQUAL SPACES ON BOTTOM HEAD PER STD-VS-NSS-0001. ANODES SHALL BE SUPPLIED BY FABRICATOR.
 - VESSEL SHALL BE DESIGNED FOR 200 PPM H₂S SERVICE. ALL MATERIALS SHALL MEET THE REQUIREMENTS OF NACE MR0175. ROLLED PLATE SHALL BE Z-QUALITY STEEL AS SPECIFIED IN SPC-AK-46-010, PARA 6.2.2.

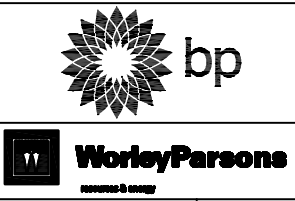
- NOTES:
- ALL DIMENSIONS ARE FROM REFERENCE TANGENT LINE UNLESS NOTED OTHERWISE.
 - NOZZLES MANWAYS, ETC. SHALL HAVE THE SAME DESIGNATION AS SHOWN ON THIS DRAWING.
 - BOLT HOLES SHALL STRADDLE VESSEL NATURAL CENTERLINES, EXCEPT AS NOTED.
 - ALL REMOVABLE INTERNALS SHALL PASS THROUGH VESSEL MANWAY.
 - ALL ATTACHMENTS WELDED TO THE PRESSURE PARTS SHALL BE THE SAME MATERIAL "P" GROUP AS THE PRESSURE PART, UNLESS OTHERWISE NOTED.
 - FABRICATOR SHALL PROVIDE AND INSTALL CLIPS WELDED TO THE VESSEL. CLIPS SHALL HAVE CONTINUOUS SEAL WELD.
 - VESSEL SHALL BE THOROUGHLY CLEANED INSIDE AND OUTSIDE AND SHALL BE FREE FROM RUST, SCALE, SLAG, WELD SPATTER AND FOREIGN MATTER FOR SHOP HYDROTEST AND SHALL BE THOROUGHLY DRIED BEFORE SHIPPING.
 - SEISMIC DESIGN PER IBC 2006
 - SITE CLASS: B
 - IMPORTANT FACTOR Ip: 1.5
 - SPECTRAL RESPONSE ACC. @ SHORT PERIODS, Ss: 38.00%
 - SPECTRAL RESPONSE ACC. @ 1 SEC. PERIOD, S1: 10.00%
 - RESPONSE MODE FACTOR, Rp: 2.5
 - z/h RATIO: 1
 - AMPLIFICATION FACTOR, ap: 2.5
 - WIND DESIGN PER IBC 2006
 - BASIC WIND SPEED: 110 MPH
 - EXPOSURE: D
 - IMPORTANCE FACTOR, I: 1.15
 - WIND DIRECTIONALITY FACTOR, Kd: 0.95
 - TOPOGRAPHIC FACTOR, Kz: 1
 - INTERNAL COATING = EPOXY COATING INSIDE FOR SHELL, HEADS, NOZZLE NECKS, ETC. PER SPC-MA-00001, CARBOLINE 368 WG, 2 COATS, 8.0-12.0 MILS DFT.
 - GASKETS: SPIRAL WOUND NON-ASBESTOS FILLED WITH 304SS WINDING & 1/8" OUTER C.S. CENTERING RING & S.S. INNER RING, CL-600 B16.20 FS CGI OR EQUAL.

BARGE LOADS		
WAVE	LOAD DESCRIPTION	FORCE COEFFICIENT
NORMAL	HOR. B1R	0.3804
	VER. B1H	0.1
ABNORMAL	HOR. B2R	0.4264
	VER. B2H	0.4
	HOR. B3P	0.088
	VER. B3H	0.4

STANDARDS AND SPECS	
DRAWING NO.	TITLE
CRT-AK-46-01	CRITERIA FOR NEW PRESSURE VESSELS
SPC-AK-46-010	SPECIFICATION FOR NEW PRESSURE VESSELS
SPC-AK-46-020	SPECIFICATION FOR STANDARD VESSEL DETAILS
SPC-MA-00001	INTERNAL COATINGS FOR IMMERSION SERVICE
	- APPLICATION OF THIN FILM COATINGS
SPC-MA-00002	EXTERNAL COATINGS FOR MODERATELY CORROSIVE SERVICE
RP0178	NACE FABRICATION DETAILS FOR LINED VESSELS AND TANKS

REFERENCE DRAWINGS	NO.	DATE	REVISION	BY	CHK	APPD	NO.	DATE	REVISION	BY	CHK	APPD
STD-VS-230		11/06	ISSUED FOR IN-HOUSE REVIEW PER EPT 36324244-02	YLT	PP	RHK						
STD-VS-00-00216		02/07	ISSUED FOR CLIENT REVIEW PER EPT 36324244-02	YLT	RHK	RHK						
		09/07	ISSUED FOR APPROVAL PER EPT 36324244-02	NH	RHK	RHK						
STD-VS-NSS-00001		03/08	REVISED AS INDICATED, IFA PER EPT 36324244-02	NH	RHK	RHK						
		09/08	REVISED AS INDICATED, IFA PER EPT 36324244-02	KST	RHK	RHK						
		10/08	ISSUED FOR FABRICATION PER EPT 36324244-02	KST	RHK	RHK						

ENGINEERING RECORD		DATE
DRN:	YLT	11/06
DSGN:	YLT	11/06
CHK:	PP	11/06
APP:	RHK	11/06
SCALE:	NONE	



TITLE OF DRAWING:			
Z PAD VESSELS GENERAL ARRANGEMENT 1ST STAGE DISCHARGE SCRUBBER VS-Z6002			
WORK ORDER	DRAWING NUMBER	REV	SHEET
36324244-02	VS-WPZ-00003	F	001
MODULE: 600	JOB NUMBER:	OF 002	