APPLICATION FOR OSHPD SPECIAL SEISMIC CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY	
APPLICATION #:	OSP – 0187-10

OSHPD Special Seismic Certification Preapproval (OSP)

Type: ☐ New ☒ Renewal

Manufacturer Information

Manufacturer: Phoenix Products

Manufacturer's Technical Representative: Zachary Michael

Mailing Address: 1727 Bennett Street Jacksonville, FL 32206

Telephone: 904-366-2279 Email: Zachary.Michael@PhoenixProds.com

Product Information

Product Name: Phoenix Products Stand Alone Fuel Day Tanks and Pump Racks (See Attachment)

Product Type: 50 to 1000 Gallon Stand Alone Fuel Tanks

Product Model Number: DD50, DD250, DD1000, SPR, DPR, TPR
(List all unique product identification numbers and/or part numbers)

General Description: Rigid Base Mounted UL-142 Stand Alone Fuel Day Tanks (50-1000 Gallon) with integral and Stand Alone pumping systems manufactured by Phoenix Power Products

Mounting Description: Rigid Base Mounted to Structure.

Applicant Information

Applicant Company Name: The VMC Group

Contact Person: Mr. John Giuliano

Mailing Address: 113 Main Street, Bloomingdale, NJ 07403

Telephone: 973-838-1780 Email: john.giuliano@thevmcgroup.com

I hereby agree to reimburse the Office of Statewide Health Planning and Development review fees in accordance with the California Administrative Code, 2016.

Signature of Applicant: Date: 11/10/16

Title: President Company Name: The VMC Group

California Licensed Structural Engineer Responsible for the Engineering and Test Report(s)

Company Name: The VMC Group

Name: Mr. Ken Tarlow California License Number: SE2851

Mailing Address: 113 Main Street, Bloomingdale, NJ 07403

Telephone: 973-838-1780 Email: ken.tarlow@thevmcgroup.com

Supports and Attachments Preapproval

☐ Supports and attachments are preapproved under OPM- _____
(Separate application for OSHPD Preapproval of Manufacturer's Certification (OPM) of Supports and attachments is required)

☒ Supports and attachments are not preapproved

Certification Method

☒ Testing in accordance with: ☒ ICC-ES AC156

☐ Other (Please Specify): _____

Testing Laboratory 1

Company Name: Stork Garwood Laboratories

Contact Name: Jerry Cederstrom

Mailing Address: 7829 Industry Ave., Pico Rivera, CA 90660

Telephone: 562-699-4159 Email: Jerry Cederstrom

Testing Laboratory 2

Company Name: Pacific Earthquake Engineering Research Center UC Berkeley (PEER)

Contact Name: Clément Barthès

Mailing Address: 1301 S. 46th Street, Building 420, Richmond, CA 94804

Telephone: 510-665-3409 Email: clementbarthes@berkeley.edu

Seismic Parameters

Design in accordance with ASCE 7-10 Chapter 13: ☒ Yes ☐ No

Design Basis of Equipment or Components (F_p/W_p) = 0.60

S_{DS} (Design spectral response acceleration at short period, g) = 2.5

a_p (In-structure equipment or component amplification factor) = 1.0

R_p (Equipment or component response modification factor) = 2.5

Ω_0 (System overstrength factor) = 2.0

I_p (Importance factor) = 1.5

z/h (Height factor ratio) = 0.0

Equipment or Component Natural Frequencies (Hz) = See Attachment

Overall dimensions and weight (or range thereof) = See Attachment

Equipment or Components @ grade designed in accordance with ASCE 7-10 Chapter 15: ☐ Yes ☒ No

Design Basis of Equipment or Components (V/W) = _____

S_{DS} (Design spectral response acceleration at short period, g) = _____

S_{D1} (Design spectral response acceleration at 1 second period, g) = _____

R (Response modification coefficient) = _____

Ω_0 (System overstrength factor) = _____

C_d (Deflection amplification factor) = _____

I_p (Importance factor) = 1.5

Height to Center of Gravity above base = _____

Equipment or Component Natural Frequencies (Hz) = _____

Overall dimensions and weight (or range thereof) = _____

Tank(s) designed in accordance with ASME BPVC, 2015: ☐ Yes ☒ No

List of Attachments Supporting Special Seismic Certification

☒ Test Report(s) ☒ Drawings ☐ Calculations ☒ Manufacturer's Catalog

☐ Other(s) (Please Specify): _____

OSHPD Approval (For Office Use Only) – Approval Expires on December 31, 2022

Signature: _____ Date: 1/10/17

Print Name: M. R. Karim Title: SHFR

Special Seismic Certification Valid Up to : S_{DS} (g) = 2.5 z/h = 0.0

Condition of Approval (if applicable): _____

Table 1 - Certified Fuel DayTank Matrix

Model	Rating [Gallons]	Max Dimensions [in]			Operating Weight [lbs]	S_{DS}	z/h	UUT
		Length	Width	Height				
DD50	50	31	29	25	741	2.5	0	UUT 1
DD** (Up to 250)	Up to 250	Up to 67	29	Up to 45	Up to 2,835	2.5	0	Interpolated
DD250	250	67	29	45	2,835	2.5	0	UUT 2
DD** (Up to 1000)	Up to 1000	Up to 120	Up to 48	Up to 62	Up to 10,955	2.5	0	Interpolated
DD1000	1024	120.38	48	62	10,955	2.5	0	UUT 4

Tank Capacities can vary in between tested sizes, all with similar construction.

Table 2 - Certified Pump Rack Matrix

Model	Product Line	Max Dimensions [in]			Operating Weight [lbs]	S_{DS}	z/h	UUT
		Length	Width	Height				
SPR	Single Pump Rack	23.25	13 9/16	_	91	2.5	0	UUT 3
DPR	Double Pump Rack	23.25	13 9/16	_	162	2.5	0	UUT 3
TPR	Triple Pump Rack	23.25	13 9/16	38 3/16	234	2.5	0	UUT 3

Table 3 - Certified Sub Components: Pumps

Part or Model Number	HP	UUT Tested	Pump Manufacturer
2 GPM Pump	1/3 H.P	UUT3	Parker
4 GPM Pump	1/2 H.P	UUT3	Parker
7 GPM Pump	1/2 H.P	UUT3	Parker
8 GPM Pump	1 H.P	UUT3	Parker
10 GPM Pump	1 H.P	UUT3	Parker
16 GPM Pump	1 H.P	UUT3	Parker

All Motors are 120/240V and mfd by Baldor.

Table 4 - Certified Sub Components: Probes

Part or Model Number	Type / Configuration	UUT Tested	Manufacturer
DDCHP	Critical High Fuel Level Probe	UUT1/UUT2/UUT4	Madison
DDHP	High Fuel Level Probe	UUT1/UUT2/UUT4	Madison
DDCLP	Critical Low Fuel Level Probe	UUT1/UUT2/UUT4	Madison
DDLSP	Leak Sensor Probe	UUT1/UUT2/UUT4	Madison
DDSP1OP	Supply Pump #1 on Probe	UUT1/UUT2/UUT4	Madison
DDSP2OP	Supply Pump #2 on Probe	UUT1/UUT2/UUT4	Madison
DDRPOP	Return Pump on Probe	UUT1/UUT2/UUT4	Madison
DDPOFP	Pump Off Probe	UUT1/UUT2/UUT4	Madison

Table 5 - Certified Sub Components: Valves

Part or Model Number	Type / Configuration	UUT Tested	Manufacturer
DDSV	Solenoid Valve	UUT1/UUT2/UUT4	ASCO
DDCV	Check Valve	UUT1/UUT2/UUT4	Apollo Valves
DDBV	Ball Valve	UUT1/UUT2/UUT4	Morrison Bros.

Table 6 - Certified Sub Components: Vents

Part or Model Number	Type / Configuration	UUT Tested	Manufacturer
DDUV	Updraft Vent	UUT1/UUT2/UUT4	Morrison Bros.
DDPRV	Pressure Relief Vent	UUT1/UUT2/UUT4	Morrison Bros.

Table 7 - Certified Sub Components: Miscellaneous

Part or Model Number	Type / Configuration	UUT Tested	Manufacturer
DDCB-XX	Pumps Control Box	UUT3	Phoenix Products
DDMSP-XX	Pumps Motor Starter Box	UUT3	Phoenix Products
DDSDA	Siphon Drain Assy	UUT1/UUT2/UUT4	Phoenix Products
DDM1HP	Manual Hand Pump	UUT1/UUT2/UUT4	Fill-Rite
DDWS	WYE Stainer	UUT1/UUT2/UUT4	Titan Flow Control

UNIT UNDER TEST (UUT)
Summary Sheet

UUT- 1

VMA-5084301-01

Model Line	Model Number	Manufacturer
Fuel Day Tanks	DD-50	Phoenix Products

Product Construction Summary

Welded ASTM A36 steel plates and structual steel C and L sections

Options / Subcomponent Summary

50 gallon day tank with pump rack configuration With and without pump rack tank empty, tank full

UUT Properties

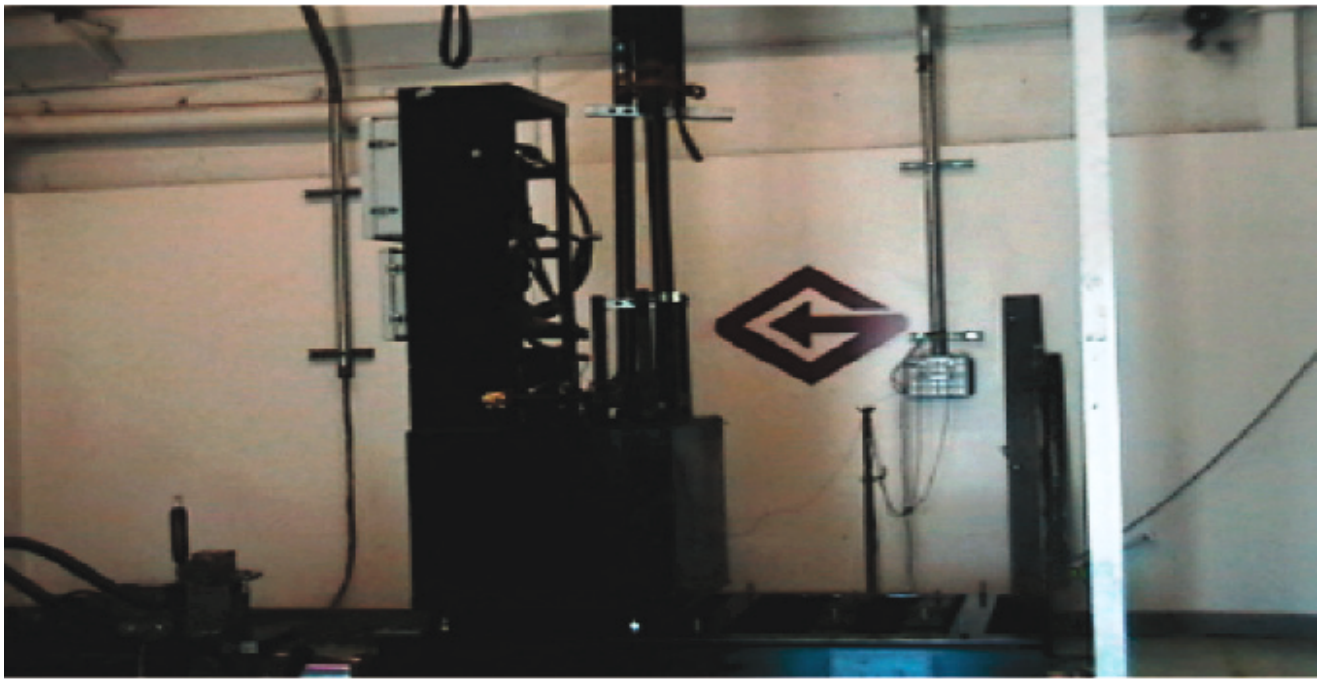
Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
742	31	29	25	7.2	33	23

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS}	z/h	I_P	A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2016	ICC-ES AC156	2.5	0	1.5	2.5	1	1.6	0.68

Test Mounting Details

UUT4 Mounted to Test Fixture with (4) ASTM A325 Bolts 3/4" diameter.



All units were filled with contents and maintained structural integrity and functionality after shake table test.

UNIT UNDER TEST (UUT)
Summary Sheet

UUT- 2

VMA-5084301-01

Model Line	Model Number	Manufacturer
Fuel Day Tanks	DD-250	Phoenix Products

Product Construction Summary

Welded ASTM A36 steel plates and structual steel C and L sections

Options / Subcomponent Summary

50 gallon day tank with pump rack configuration With and without pump rack tank empty, tank full

UUT Properties

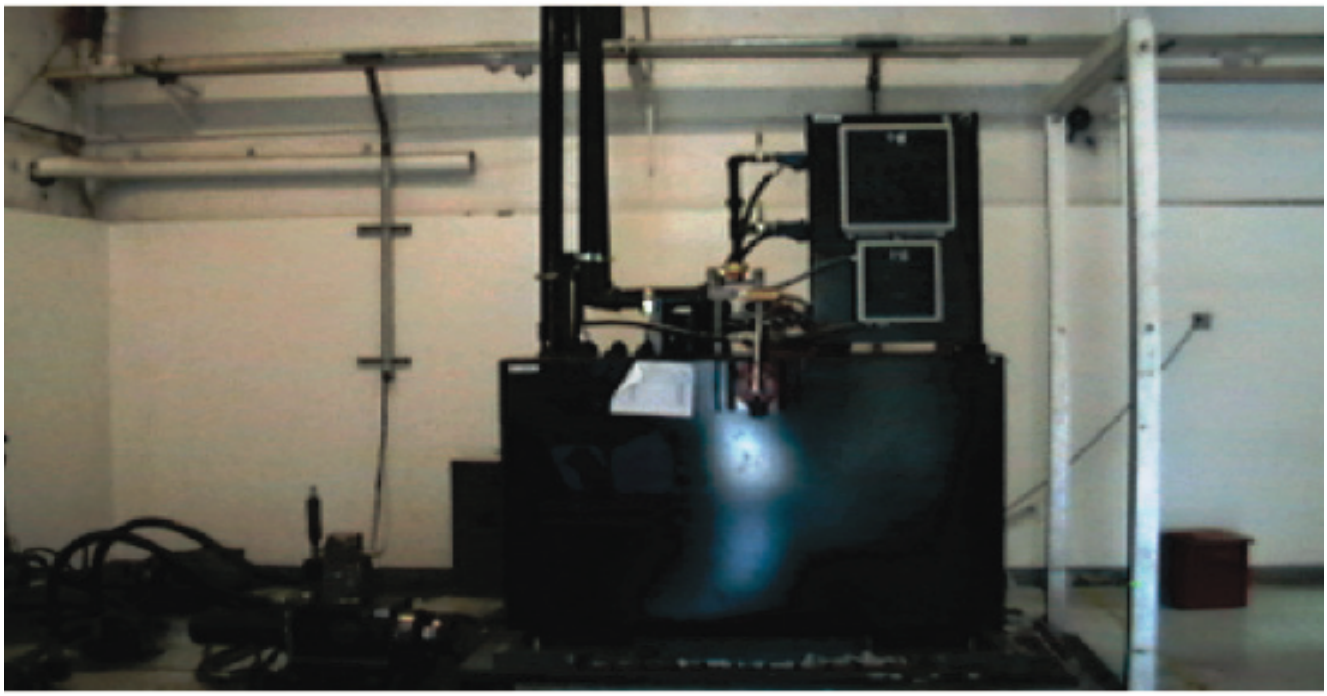
Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
2,835	67	29	45	12.74	NA	33.2

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS}	z/h	I_P	A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2016	ICC-ES AC156	2.5	0	1.5	2.5	1	1.6	0.68

Test Mounting Details

UUT4 Mounted to Test Fixture with (6) ASTM A325 Bolts 3/4" diameter.



All units were filled with contents and maintained structural integrity and functionality after shake table test.

UNIT UNDER TEST (UUT)
Summary Sheet

UUT-3

VMA-5084301-01

Model Line	Model Number	Manufacturer
Pump Rack	TPR	Phoenix Products

Product Construction Summary

Welded tube and angle sections 1.5" X 1.5" and 14 Ga sheet metal

Options / Subcomponent Summary

Pump rack on top of tank configuration. Tank empty and Tank full

UUT Properties

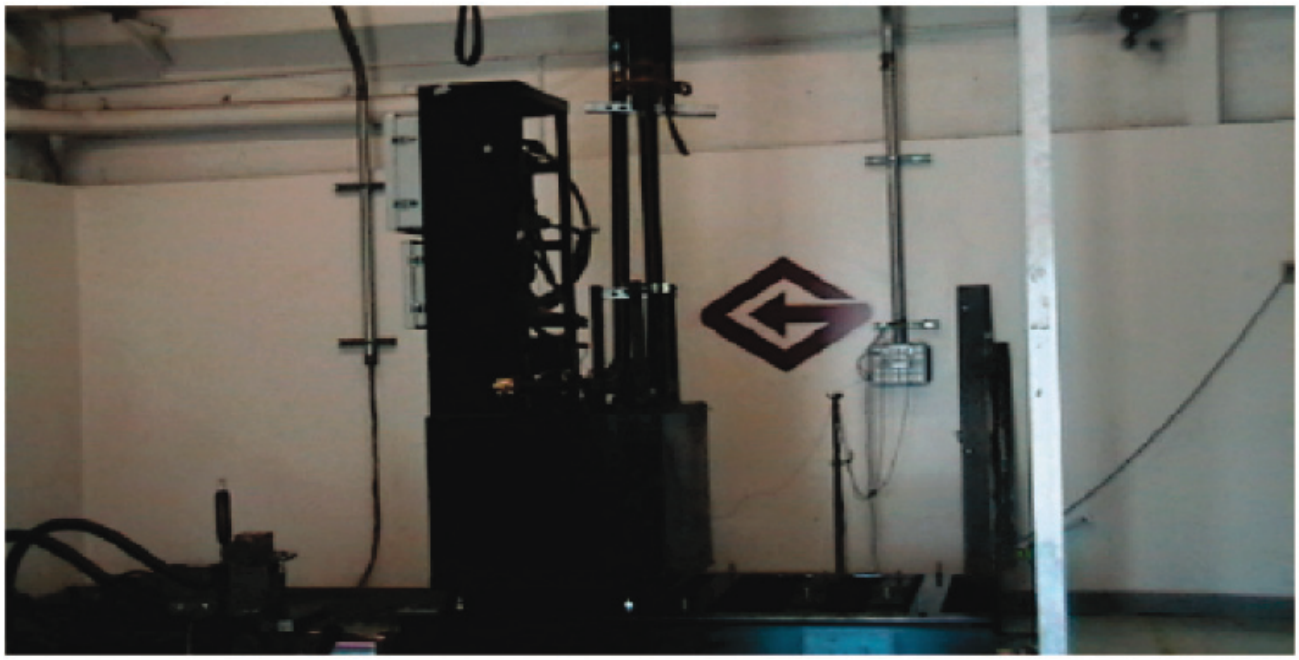
Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
234	23.25	13.6	38.3	12.8	14.84	32.06

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS}	z/h	I_P	A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2016	ICC-ES AC156	2.5	0	1.5	2.5	1	1.6	0.68

Test Mounting Details

UUT3 Mounted to Test Fixture with (4) ASTM A325 Bolts 3/4" diameter.



All units were filled with contents and maintained structural integrity and functionality after shake table test.

UNIT UNDER TEST (UUT)
Summary Sheet

UUT-4

VMA-5084301-01

Model Line	Model Number	Manufacturer
Fuel Day Tanks	DD-1000	Phoenix Products

Product Construction Summary

Welded ASTM A36 steel plates and structual steel C and L sections

Options / Subcomponent Summary

Pump rack on top of tank configuration. Tank empty and Tank full

UUT Properties

Weight [lbs]	Dimensions [in]			Lowest Nat. Freq. [Hz]		
	Length	Width	Height	F-B	S-S	V
10,955	120.35	48	62	9.87	11.09	11.09

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS}	z/h	I_P	A_{FLX-H}	A_{RIG-H}	A_{FLX-V}	A_{RIG-V}
CBC 2016	ICC-ES AC156	2.5	0	1.5	2.5	1	1.6	0.68

Test Mounting Details

UUT4 Mounted to Test Fixture with (8) ASTM A325 Bolts 3/4" diameter.

All units were filled with contents and maintained structural integrity and functionality after shake table test.