



**DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION  
FACILITIES DEVELOPMENT DIVISION**

**APPLICATION FOR HCAI SPECIAL SEISMIC  
CERTIFICATION PREAPPROVAL (OSP)**

OFFICE USE ONLY

**APPLICATION #: OSP-0784**

**HCAI Special Seismic Certification Preapproval (OSP)**

Type:  New  Renewal

**Manufacturer Information**

Manufacturer: PREFERRED UTILITIES MFG CORPORATION

Manufacturer's Technical Representative: Jeff Jarosz

Mailing Address: 31-35 South St., Danbury, CT 06810

Telephone: (203) 743-6741

Email: jjarosz@preferred-mfg.com

**Product Information**

Product Name: Emergency and Standby Power Systems

Product Type: Fuel Tanks

Product Model Number: DT Double Wall Day Tanks

General Description: Welded carbon steel double wall tanks meeting UL 142.

Mounting Description: Rigid, Floor Mounted

Tested Seismic Enhancements: Seismic enhancements made to the test units and/or modifications required to address anomalies during the tests shall be incorporated into the production units.

**Applicant Information**

Applicant Company Name: Manwill Engineering LLC

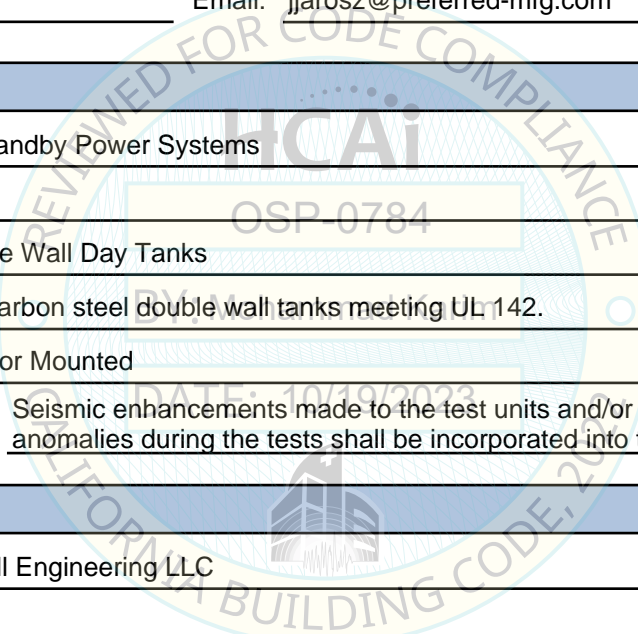
Contact Person: Derek Manwill

Mailing Address: PO Box 1194, Bend, OR 97709

Telephone: (541) 241-2102

Email: derek@manwillse.com

Title: President





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

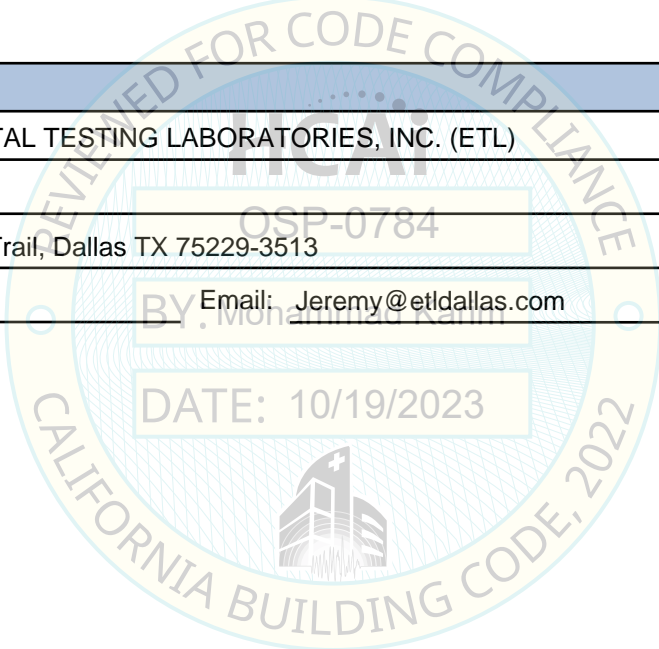
Company Name: MANWILL ENGINEERING LLC  
Name: Derek Manwill California License Number: S6266  
Mailing Address: PO Box 1194, Bend, OR 97709  
Telephone: (541) 241-2102 Email: derek@manwillse.com

**Certification Method**

GR-63-Core       ICC-ES AC156       IEEE 344       IEEE 693       NEBS 3  
 Other (Please Specify): \_\_\_\_\_

**Testing Laboratory**

Company Name: ENVIRONMENTAL TESTING LABORATORIES, INC. (ETL)  
Contact Person: Jeremy Lange  
Mailing Address: 11034 Indian Trail, Dallas TX 75229-3513  
Telephone: (972) 247-9657 Email: Jeremy@etldallas.com





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**Seismic Parameters**

Design Basis of Equipment or Components ( $F_p/W_p$ ) = 1.44 (SDS=2.00, z/h=1), 1.13 (SDS=2.50, z/h=0)

SDS (Design spectral response acceleration at short period, g) = 2.00 (z/h=1), 2.50 (z/h=0)

$a_p$  (Amplification factor) = 1.0

$R_p$  (Response modification factor) = 2.5

$\Omega_0$  (System overstrength factor) = 2.0

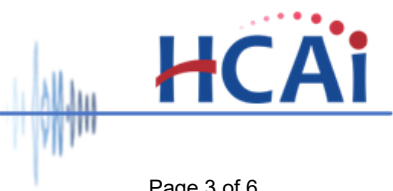
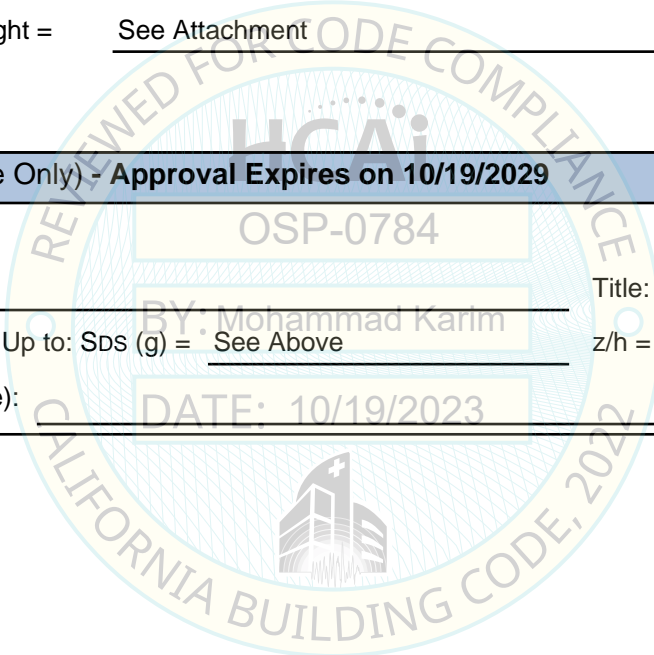
$I_p$  (Importance factor) = 1.5

z/h (Height ratio factor) = 1 and 0

Natural frequencies (Hz) = See Attachment

Overall dimensions and weight = See Attachment

<b>HCAI Approval (For Office Use Only) - Approval Expires on 10/19/2029</b>			
Date:	<u>10/19/2023</u>	OSP-0784	
Name:	<u>Mohammad Karim</u>	BY: Mohammad Karim	Title: <u>Supervisor, Health Facilities</u>
Special Seismic Certification Valid Up to:	SDS (g) = <u>See Above</u>		z/h = <u>See Above</u>
Condition of Approval (if applicable):	<u>DATE: 10/19/2023</u>		



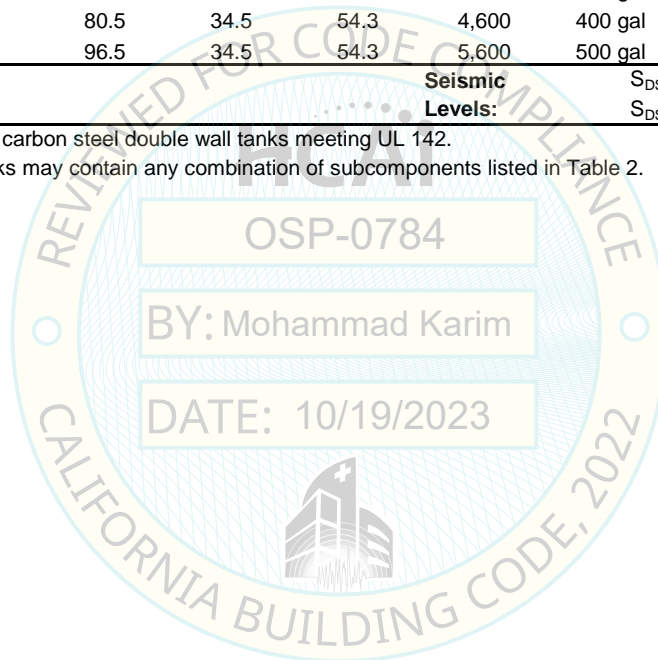
**PREFERRED UTILITIES MFG CORPORATION  
DT Double Wall Day Tanks**

**TABLE 1**

Model Number	Dimensions (in)			Max. Wt. (lb)	Description / Notes	Basis
	Depth	Width	Height			
<b>DT Double Wall Day Tanks</b>						
DT-060	41.5	30.5	25.3	1,000	60 gal	EXTRAP
DT-100	41.5	30.5	38.4	1,400	100 gal	EXTRAP
DT-150	41.5	30.5	54.4	1,900	150 gal	<b>UUT 2</b>
DT-200	45.5	34.5	54.3	2,500	200 gal	INTERP
DT-300	62.5	34.5	54.3	3,600	300 gal	INTERP
DT-400	80.5	34.5	54.3	4,600	400 gal	INTERP
DT-500	96.5	34.5	54.3	5,600	500 gal	<b>UUT 1</b>
<b>Mounting:</b> Rigid floor mounted.				<b>Seismic Levels:</b>	$S_{DS} = 2.00g$ for $z/h = 1$ $S_{DS} = 2.50g$ for $z/h = 0$	$I_p = 1.5$

**Product Construction:** Welded carbon steel double wall tanks meeting UL 142.

**Options/Subcomponents:** Tanks may contain any combination of subcomponents listed in Table 2.

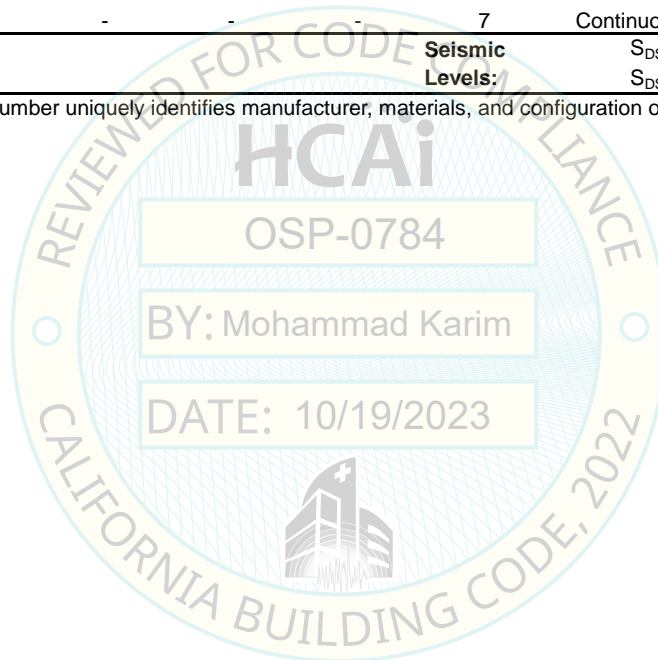


**PREFERRED UTILITIES MFG CORPORATION  
DT Double Wall Day Tanks**

**TABLE 2. SUBCOMPONENTS**

Model Number	Dimensions (in)			Max. Wt. (lb)	Description / Notes	Basis
	Depth	Width	Height			
<b>Subcomponent: Pump &amp; Motor Assembly - Manufacturer: Viking Pump</b>						
11872	-	-	-	33	SG-0510, 1/3-hp, 4-gpm	UUT 2
11815	-	-	-	45	HJ475, 3/4-hp, 60-gpm	UUT 1
<b>Subcomponent: Probe - Manufacturer: Preferred Utilities Mfg Corp</b>						
PLS-1-1-S	-	-	-	5	Preferred level switch	UUT 1, 2
PLS-4-1-S	-	-	-	5	Preferred level switch	UUT 1, 2
TG-CL48-SS-T	-	-	-	7	Continuous level probe	UUT 1, 2
<b>Mounting:</b> Mounted within unit.				<b>Seismic Levels:</b>	$S_{DS} = 2.00g$ for $z/h = 1$	$I_p = 1.5$
					$S_{DS} = 2.50g$ for $z/h = 0$	

**Construction/Options:** Model number uniquely identifies manufacturer, materials, and configuration of subcomponents.



## ATTACHMENT 2: UNIT UNDER TEST SUMMARIES

## SPECIAL SEISMIC CERTIFICATION

### UUT 1

Manufacturer: PREFERRED UTILITIES MFG CORPORATION

Model number: DT-500

Unit function: FUEL TANK

Serial number: N/A

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
96.5	34.5	54.3	5,600	7.2	7.7	8.8

Code & criteria: 2022 CBC, ICC-ES AC156

Test laboratory: Environmental Testing Laboratory

Report: 22075TR1.0 (dated 10-11-23), tested on 10-4-23

S <sub>DS</sub> (g)	z/h	A <sub>FLX-H</sub> (g)	A <sub>RIG-H</sub> (g)	A <sub>FLX-V</sub> (g)	A <sub>RIG-V</sub> (g)
2.00	1	3.20	2.40	1.68	0.68
2.50	0				

Importance Factor, I<sub>P</sub> = 1.5: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Rigid floor mounted to fixture with (4) 5/8-in Grade 8 bolts.

Construction: Welded carbon steel double wall tanks meeting UL 142.

Subcomponents: Viking Pump - Pump (11815), Preferred Utilities Mfg Corp - Probe (PLS-1-1-S, PLS-4-1-S, TG-CL48-SS-T).

Testing notes: Due to the intended purpose of the vent (to prevent pressure buildup), a small portion of the liquid was expelled during the test. The amount lost was negligible compared to the total amount, so it had no effect on the test. Secondary containment should be considered for high seismic regions since fuel could be discharged during a seismic event.



### UUT 2

Manufacturer: PREFERRED UTILITIES MFG CORPORATION

Model number: DT-150

Unit function: FUEL TANK

Serial number: N/A

Dimensions (in)			Weight (lb)	Res. Freq. (Hz)		
Depth	Width	Height		F-B	S-S	V
41.5	30.5	54.4	1,900	13.3	19.9	9.4

Code & criteria: 2022 CBC, ICC-ES AC156

Test laboratory: Environmental Testing Laboratory

Report: 22075TR1.0 (dated 10-11-23), tested on 10-4-23

S <sub>DS</sub> (g)	z/h	A <sub>FLX-H</sub> (g)	A <sub>RIG-H</sub> (g)	A <sub>FLX-V</sub> (g)	A <sub>RIG-V</sub> (g)
2.00	1	3.20	2.40	1.68	0.68
2.50	0				

Importance Factor, I<sub>P</sub> = 1.5: Unit was full of operating content during the shake table test. Unit maintained structural integrity and remained functional per manufacturer requirement after shake table test.

Mounting: Rigid floor mounted to fixture with (4) 1/2-in Grade 8 bolts.

Construction: Welded carbon steel double wall tanks meeting UL 142.

Subcomponents: Viking Pump - Pump (11872), Preferred Utilities Mfg Corp - Probe (PLS-1-1-S, PLS-4-1-S, TG-CL48-SS-T).

Testing notes: None.

