



## Appendices

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### Appendix 5 – Corral Fly - Recycling Containment Site Photographs



## Site Photographs – Recycling Containments – Corral Fly

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Photograph #1: Satellite imagery showing the boring locations





## Appendices

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### Appendix 6 – Corral Fly- Recycling Containment OSE Water Wells & USGS Data



# New Mexico Office of the State Engineer

## Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced,  
O=orphaned,  
C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	POD Sub-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
<a href="#">RA 07162 EXP2</a>			ED	1	3	1	10	25S	29E	596214	3557222*	55	40	15

Average Depth to Water: **40 feet**

Minimum Depth: **40 feet**

Maximum Depth: **40 feet**

Record Count: 1

### Basin/County Search:

**Basin:** Roswell Artesian

### PLSS Search:

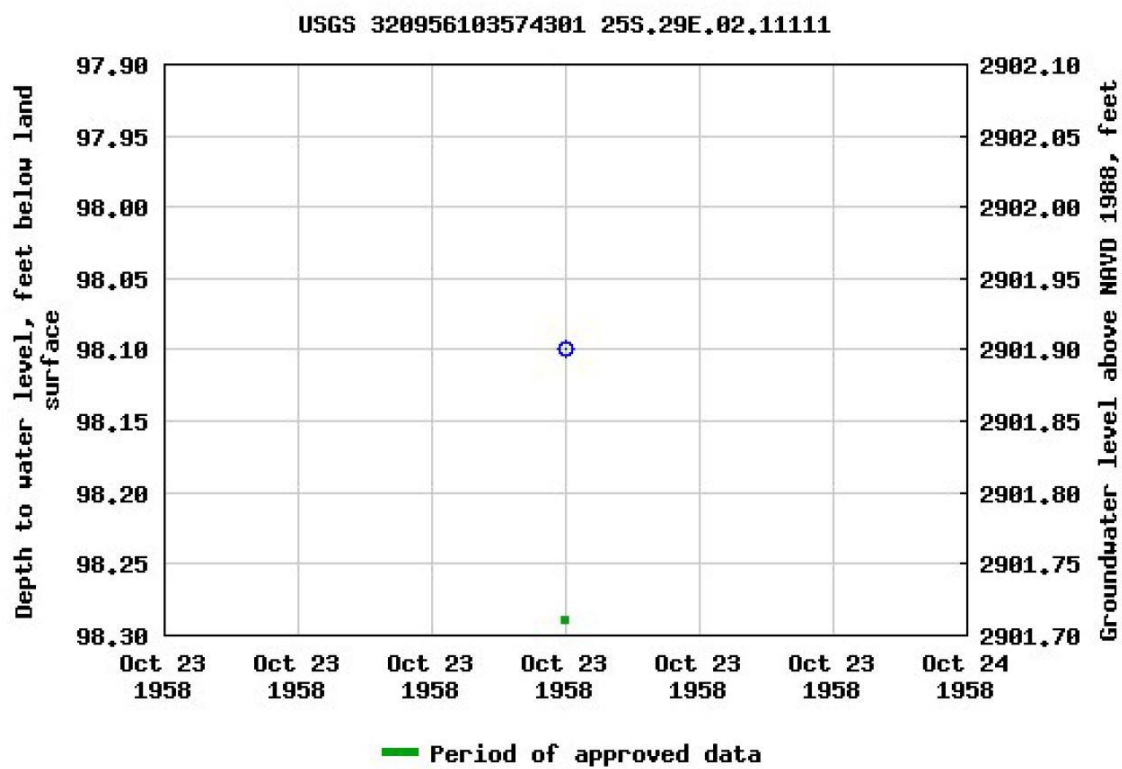
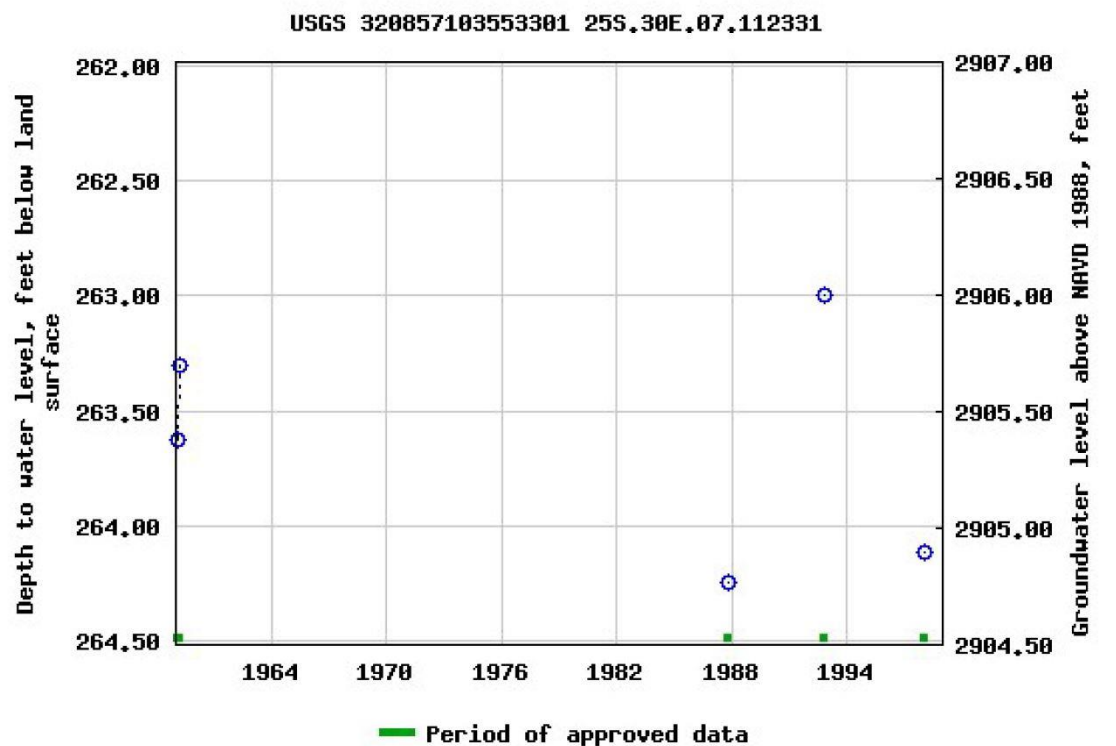
**Township:** 25S

**Range:** 29E

\*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.







## Appendices

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### Appendix 7 – Corral Fly - Recycling Containment FEMA FIRM





## Appendices

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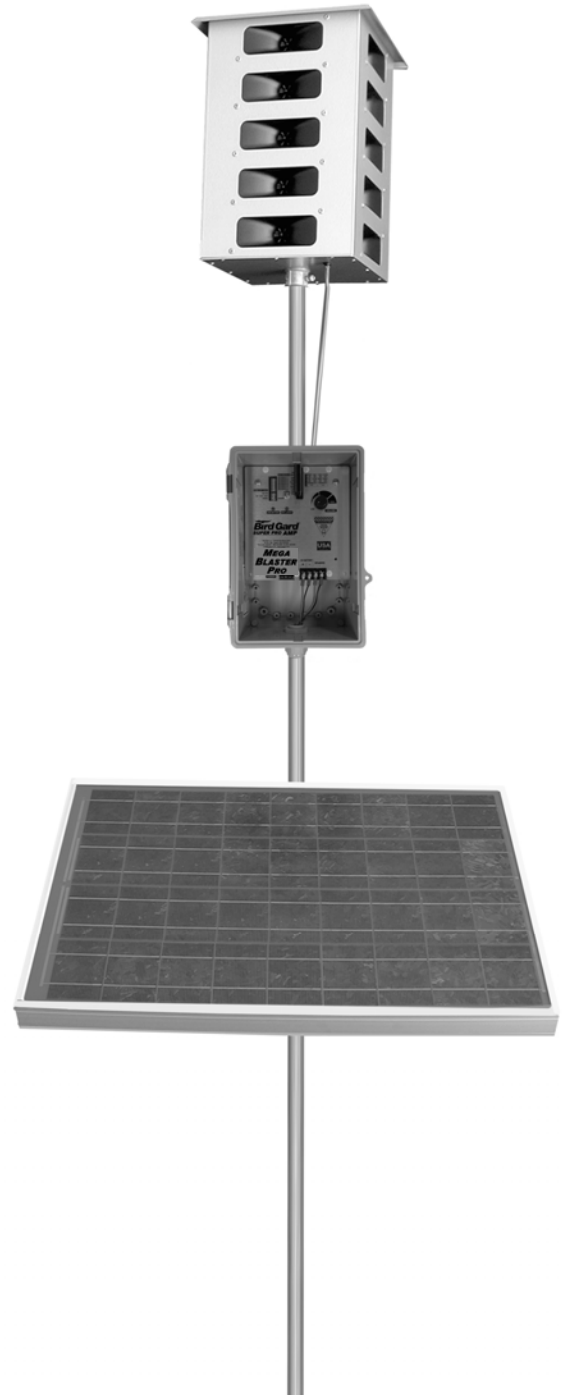
### Appendix 8 – Corral Fly - Recycling Containment Mega Blaster PRO

# ***MEGA BLASTER PRO***



## User's Manual

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# Overview

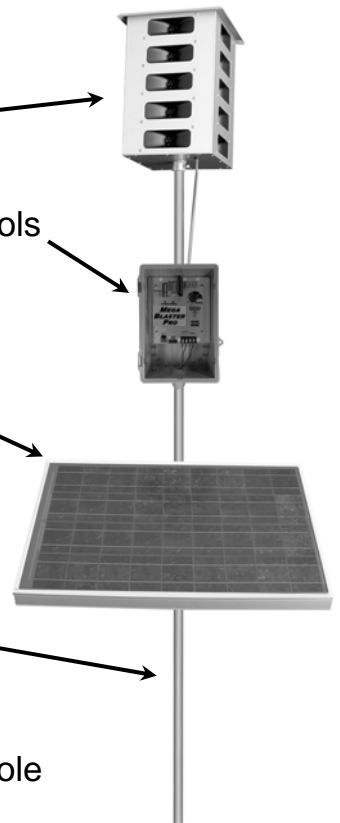
The Bird-X Mega Blaster Pro utilizes the innate power of the natural survival instincts of birds to effectively repel them. Digital recordings of distressed and alarmed birds, along with the sounds made by their natural predators are broadcast through high fidelity weather-resistant speakers over the top of areas. This action triggers a primal fear and flee response. Pest birds soon relocate to where they can feed without feeling threatened.

Your Bird-X Mega Blaster Pro system consists of:

**20-Speaker Tower** broadcasts the bird sounds

**Control Unit** produces the bird sounds and contains all operational controls

**Solar Panel** recharges the 12-volt deep cycle battery



Items needed but not included:

- (1) **Mounting Pole** or **Mast** tall enough to raise the 20-Speaker Tower at least 5 feet above the top of the areas, trees or other obstructions
- (1) **12-volt Deep Cycle Battery** (RV/Marine) Group 27 or larger wet cell
- (1) **T-Post** or similar (Optional) may be needed to support the mounting pole
- (1) **Bailing Wire** or **zip-tie** (Optional) to secure the Mounting Pole to the T-Post

***CAUTION: THE MEGA BLASTER PRO IS CAPABLE OF PRODUCING SOUNDS UP TO 125 DECIBELS. PROPER HEARING PROTECTION MUST BE WORN ANYTIME THE UNIT IS TURNED ON.***



# Bird Control Management Guidelines

**An active bird control management program is a key to successfully repelling pest birds. Bird feeding patterns may take several days or weeks to break. Follow all suggestions for maximum effectiveness. Read all instructions prior to installation.**





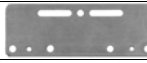





## **For best results:**

- **It is extremely important to fully protect your entire area from birds.** Any areas not fully protected will allow birds to begin feeding at the fringes of the sound coverage. They will soon become bolder and learn the sounds are nothing to fear. This will cause the effectiveness to diminish. Complete Bird-X product coverage forces birds to leave the area entirely.
- Install the Mega Blaster Pro unit at least two weeks before birds are attracted to your area. It is much easier to keep birds away before they have found a food source than it is to repel them once they have developed a feeding pattern.
- Most birds begin feeding from the perimeter of an area. Place Mega Blaster Pro units so the sound protection covers past the edges of the area.
- Birds will often use tall trees for roosting and observation. If birds are in bordering trees it is necessary to position the units so the sound protection covers the trees as well.
- Mount the 20-Speaker Tower at least five feet above trees, areas and structures for maximum coverage. The higher the better. Sound will disperse or reflect off structures or foliage. Mount control unit out of direct sun, if possible.
- When first installed, run Mega Blaster Pro units at FULL volume and on SHORT time off periods. This ensures maximum "bird stress" and creates a hostile environment.
- Watch for changes in bird activity and adjust the location of your Mega Blaster Pro unit if needed.
- **Check the battery and unit settings often to insure continuous bird control. Be certain that the system is not turned down or has a dead battery. Field hands or harvesters may turn down the volume.**
- Changing settings and switches often helps to prevent bird habituation. Periodically change the switch settings of the eight sounds (turning them ON or OFF). NEVER turn OFF the distress calls of the target birds you are trying to repel and always keep at least one predator bird sound turned ON.
- If different bird species enter the protected area and begin causing damage contact us immediately for an updated Sound Recording Card designed to repel the new invading birds.
- Remember that the Mega Blaster Pro system is a management tool, and should be used as part of your overall bird control strategy, sometimes in conjunction with other bird control techniques and devices.

**Be aware that under extreme drought or other adverse conditions, birds will disregard all deterrents and risks in order to survive**



# Materials List

Item	Qty		Notes
<b>Mega Blaster Pro Control Box</b>	1		
<b>Sound Recording Card</b>	1		Pre-installed in control box
<b>20-Speaker Tower</b>	1		
<b>Control Box Mounting U-Bolts</b>	2		1/4" x 1" x 2"
<b>Control Box Brackets</b>	2		
<b>40-Watt Solar Panel</b>	1		
<b>Solar Panel Mounting Bracket</b>	1		
<b>Solar Panel Mounting U-Bolts</b>	2		1/4" x 1-1/8" x 2"
<b>Control Box Connector Cable</b>	1		2 Wire, 4 ft. Long
<b>Battery Box</b>	1		

# Assembly

**Note: You will find it easier to pre-assemble the following components prior to installation in the field.**

## Control Unit

1. Lay the Control Unit face down
2. Attach the two Control Box Mounting Brackets to the back with the included screws (Figure 1)

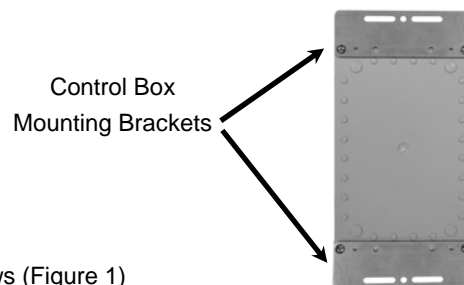


Figure 1

## Solar Panel

3. Install the two Solar Panel Mounting U-Bolts in the Head of the Solar Panel Mounting Bracket (Figure 2)
4. Loosen, but do not remove the Carriage Bolts securing the movable Clamp Plates on the Solar Panel Mount Bracket
5. Lay the solar panel on a flat surface with the glass side down
6. Lay the Mounting Arm across the Solar Panel with the Clamp Plates down. Position the Mounting Arm at an angle so the Clamp Plates slide under the lip of the Solar Panel (Figure 3A)
7. Rotate the Mounting Arm and secure it to the Solar Panel by tightening the Carriage Bolts (Figure 3B)

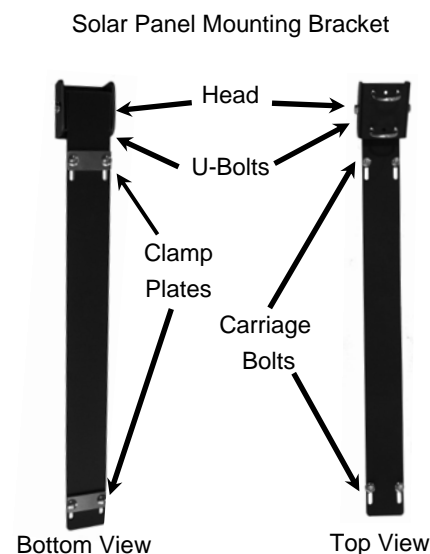


Figure 2

Clamp Plates slide under the lip of the Solar Panel

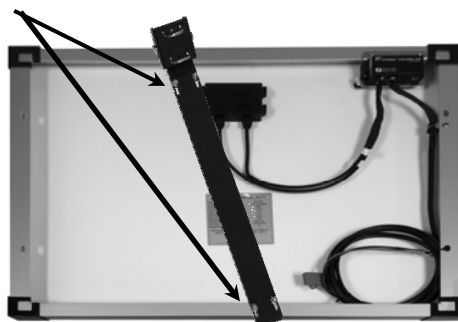


Figure 3A

Rotate Mounting Arm and tighten Carriage Bolts

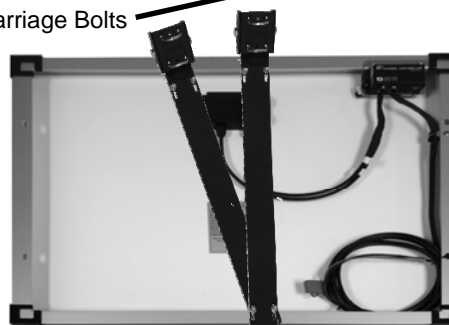


Figure 3B

# Placement

Your Mega Blaster Pro will protect an area up to approximately 600 feet in all directions.

**Factors to consider when selecting the best location include:**

- Birds typically feed from the perimeter of the area and work their way in. Place Mega Blaster Pro units so the sound protection covers all the way to the edges of the area. For larger areas Mega Blaster Pro units should be positioned 400-500 feet inside the area and spaced every 1,200 feet.
- Mount the 20-Speaker Tower at least 5 feet above terrain, areas, trees and other obstacles.
- Placing the Mega Blaster Pro on top of a hill or small rise will give you much better coverage than at the bottom of a valley. The greater the height the further the sounds will travel.
- Wind can blow the sound waves. If the area you need to protect has consistent wind coming from the same direction, position your Mega Blaster Pro more “upwind.”
- Trees surrounding areas provide birds with a safe perch that allows them to fly in, grab food and fly out. It is much more difficult to eliminate bird damage if the birds are able to use the surrounding trees as a staging area for attacks on your areas. Your Mega Blaster Pro unit should be positioned close to any trees bordering your areas. If birds are roosting in the trees at night the TIME OF OPERATION should be set to 24 HOUR.
- Lakes, rivers and wetlands are a favorite resting and hiding place for birds. Your Mega Blaster Pro unit should be placed so the sound thoroughly covers any areas where birds frequent.
- Neighbors, businesses and others may not appreciate hearing the bird sounds. At the limits of the effective range the sounds from your Mega Blaster Pro are at a level people may find annoying. Avoid placing the unit where it becomes a nuisance.

# Building a Mounting Pole or Mast

**CAUTION: TALL POLES AND MASTS CAN BE HEAVY AND POTENTIALLY DANGEROUS. USE EXTREME CAUTION WHEN CONSTRUCTING OR WORKING AROUND TALL POLES AND MASTS. BIRD-X, INC., ASSUMES NO RESPONSIBILITY FOR DAMAGES OR INJURIES.**

## **Things to consider:**

- The 20-Speaker Tower is designed to mount onto a 1 in. (outside diameter) pipe at least 14 in. long. 1 in. conduit works well as it is light, rigid, inexpensive and available in 10 ft. lengths making it ideal for low areas, vineyards and bushes.
- You will want to take down your Mega Blaster Pro unit after harvest and store it in a dry location until the next season.

## **A suggestion for masts up to 20 feet tall:**

1. 3/4 inch Galvanized steel water pipe has a 1 inch outside diameter and is the correct size to fit inside the 20-Speaker Tower. It is often available in 20 ft. lengths from hardware and plumbing supply stores. If these are not available, 10 ft. lengths are common and can be fastened together with a threaded coupler. Assemble the poles on the ground.
2. Slide the 20-Speaker Tower over the pipe and tighten the set screw in the collar at the base.
3. Stand the pole assembly up just inside the drip line of a tree and securely tie the pole to a few heavy branches.
4. Drive a T-Post into the ground at the base of the pole and secure with wire.

## **For masts taller than 20 feet:**

1. Use 20 ft. lengths of galvanized steel water pipe or similar, securely fastened together with threaded reducing couplers.
2. Starting with 3 in. pipe, step the size down with each length of pipe.
3. The last 10 ft. can be 1 in. (O.D.) conduit hose clamped to the final section of galvanized pipe.

A semi-permanent mast support can be made by digging a hole 4 ft. deep and 4 ft. round. In the middle of the hole sink a length of galvanized water pipe large enough that your mast will easily fit inside. Make sure at least 2 ft. of pipe is above ground level. Fill the area around the pipe with packed sand, leaving the last foot filled with concrete to form a cap over the hole. Your mast can be dropped into the galvanized water pipe “receiver” for support. At the end of harvest the mast can be lifted out and positioned on the ground for easy disassembly and storage.

# Installation

**Note: Foliage, trees, and other obstructions severely reduce the effective range of Mega Blaster Pro units. It is critical that the 20-Speaker Tower is mounted at least 5 feet above all obstructions to achieve the maximum protection.**

## Mounting Pole or Mast

1. The Mounting Pole or Mast will need to be supported by a T-Post, fence post, tree or other means. The Pole Support should be in place before proceeding.

## 20-Speaker Tower

2. Lay the 20-Speaker Tower on its side on the ground and cut the zip-tie securing the speaker cables.
3. Slide the 1 in. (outside diameter) Mounting Pole through the Collar at the bottom of the 20-Speaker Tower until it slides over the positioning bolt inside the top of the Tower (Figure 4).
4. Tighten the Set Screw in Collar securely.

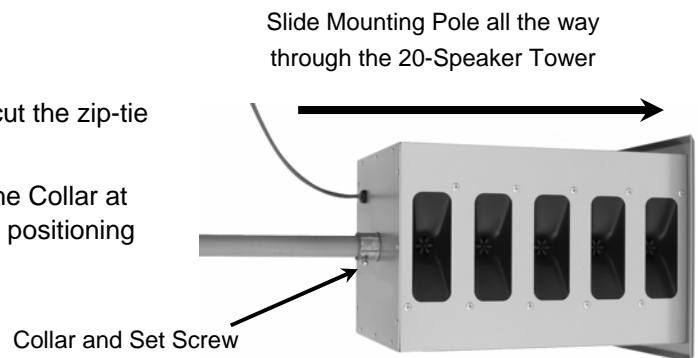


Figure 4

## Solar Panel

5. Rest the lower end of the Mounting Pole on the Solar Panel Mounting Bracket approximately three feet from the bottom of the pole with the top of the solar panel facing the 20-Speaker Tower (Figure 5).
6. Lean up the Mounting Pole with the 20-Speaker Tower on top, against the Pole Support and fasten the Mounting Pole to the Pole Support securely with wire or other semi-permanent means.
7. Rotate the solar panel so it receives sunlight.

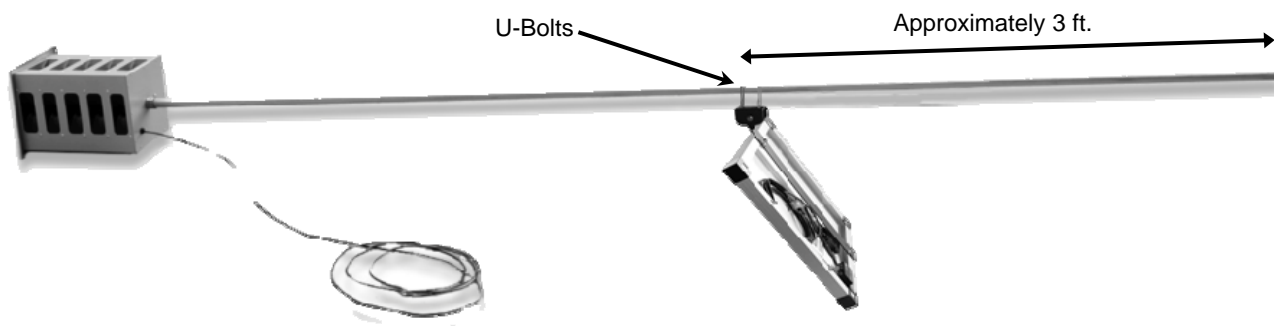


Figure 5

## Control Box

8. Attach the Control Box to the Mounting Pole with the U-Bolts.
9. Feed the Speaker Cables through the Cable Strain Relief at the bottom
10. Attach the Speaker Cables from the 20-Speaker Tower to the screws marked "SPEAKER" on the faceplate of the control panel.
11. Locate the Control Box Connector Cable (the grey 2 lead cables) and feed one end through the Cable Strain Relief.
12. Connect the RED wire to the screw marked "+" and the BLACK wire to the screw marked "-" under "12V BATTERY" on the faceplate of the control panel.
13. **MAKE SURE THE POWER SWITCH IS TURNED OFF BEFORE ATTACHING BATTERY.**
14. Connect the other end of the RED wire to the "+" terminal on the 12-volt Deep Cycle battery (not included). Connect the BLACK wire to the "-" terminal on the battery.
15. Hand tighten the Tapered Cinch Nut on the bottom of the Cable Strain Relief to help keep insects and moisture out.

Control Box Connector to Voltage Regulator

Cable Strain Relief

Tapered Cinch Nut

Speaker Cables

Figure 6

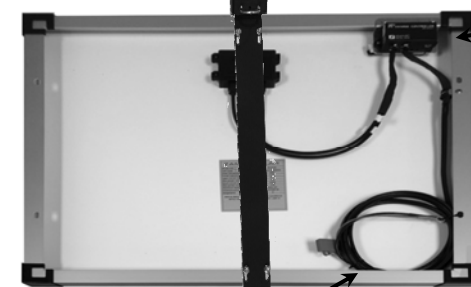
## Solar Panel Connections

16. Cut the black zip-ties securing the RED and BLACK wires on the underside of the solar panel. (Figure 7)
17. Connect the RED wire to the "+" terminal on the 12-volt battery and connect the BLACK wire to the "-" terminal on the battery.

**NOTE:** If you are using a "Sealed Gel" 12-volt battery (instead of a Lead Acid battery) you will need to cut the indicated small BLUE wire on the attached voltage regulator. This prevents Sealed Gel batteries from being overcharged. Failure to cut this wire can result in permanent battery damage. (Figure 8)

Figure 7

Solar Controller



RED and BLACK wires connect to BATTERY



Cut Blue wire for "Sealed Gel" batteries

Figure 8

**CAUTION:** The Mega Blaster Pro is capable of producing sounds up to 125 decibels. Hearing protection must be worn anytime the unit is on!



# Settings

Repelling birds requires regular monitoring and active management. Birds are intelligent and highly adaptable so it is important to create and maintain an environment the birds perceive as hostile and dangerous. This is achieved by playing the sounds frequently and at a high volume, otherwise the birds will not be fully repelled and will soon learn to adapt.

Below are the initial settings that should be used when your Mega Blaster Pro is first installed. Please see the “Bird Control Management Guidelines” section for more information.

## Recordings

There are eight separate bird sounds contained on the Replaceable Sound Card. The label on the sound card lists each sound with a number corresponding to the eight “RECORDINGS” dip switches to the left of the Sound Card. Initially all RECORDING switches should be turned ON. If the target birds begin returning, periodically change the switch settings for the eight sounds (turning them ON or OFF). **NOTE: NEVER turn OFF the distress calls of the target birds you are trying to repel and always keep at least one predator bird sound turned ON.**

## Mode Settings

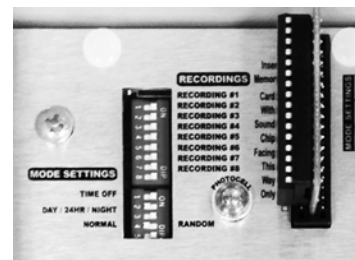
**TIME OFF INTERVAL** controls the time off periods between each playing of the bird recordings.

Setting	Time Off Duration	Switch #1	Switch #2
SHORT	17-50 Seconds	ON	OFF
MEDIUM	1:00-4:15 Minutes	OFF	ON
LONG	5:00-10:00 Minutes	ON	ON
XLONG	10:00-30:00 Minutes	OFF	OFF

When the Mega Blaster Pro unit is first installed the **TIME OFF INTERVAL** should be set to **SHORT** to create the greatest sense of danger and move the birds out of the area the fastest. Once the birds have left the area completely for a week or more you may try increasing the **TIME OFF INTERVAL** gradually, but you must monitor the birds carefully. Switch back to **SHORT** at the first sign birds are returning.

**TIME OF OPERATION** controls when the bird recordings play.

Setting	Switch #3	Switch #4
DAY ONLY	ON	OFF
24-HOUR	OFF	ON
NIGHT ONLY	ON	ON



Recommended Settings

In most cases birds are only active during the day so the **DAY ONLY** is recommended. If birds are roosting in bordering trees at night you will need to set the **TIME OF OPERATION** for **24-HOUR**.

**RANDOM OPERATION** should always be turned **ON**. **VOLUME** should be set as high as possible.



# Troubleshooting

Problem	Possible Cause	Solution
No Sound	Volume turned down	Turn volume up
	Dead battery	Charge or replace battery
	Loose battery connection	Verify all battery connections are tight
	All RECORDINGS are turned OFF	Verify all RECORDINGS are switched to ON
	Sound Card not fully seated	Remove sound card and reinstall, making sure it is fully inserted into the socket
	Sound Card is installed backward	Unplug the sound card and reinstall with the label facing to the left
	TIME OF OPERATION set to DAY ONLY without enough light	Change TIME OF OPERATION to 24-HOUR
	Unit was not shut down before the battery was disconnected causing the unit to go into "SAFE MODE"	<ol style="list-style-type: none"> <li>1. Turn the POWER switch OFF</li> <li>2. Disconnect the battery</li> <li>3. Remove the sound card</li> <li>4. Wait 30 seconds</li> <li>5. Reinstall sound card</li> <li>6. Reconnect the battery</li> <li>7. Turn the POWER switch ON</li> </ol>
Was working but stopped	The battery is dead	Connect the battery to a battery charger and see if it will hold a charge. Replace if necessary
	Solar Panel is not getting enough sunlight	Reposition the Solar Panel

# Limited Warranty

THIS MEGA BLASTER PRO UNIT IS WARRANTED AGAINST DEFECTS IN MATERIAL AND WORKMANSHIP FOR SIX MONTHS FROM DATE OF PURCHASE (EXTENDED WARRANTY AVAILABLE). BIRD-X WILL REPLACE OR REPAIR, PROVIDED DEFECT OCCURS UNDER NORMAL USE. *RETURNS ACCEPTED ONLY WITH AUTHORIZATION FROM OUR CHICAGO OFFICE.*



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EPA Establishment Number 075130-OR-001

*Mega Blaster Pro P/N 655-0065-00 (Rev. 9/2013)*



# EFFECTIVE WIDE-AREA BIRD CONTROL!

## Mega Blaster PRO sonic bird repeller covers 30 acres!



Mega Blaster PRO uses intermittent distress calls to create a "danger zone" that frightens infesting birds away for good.

PREDATOR cries help scare all the birds.



- **NEMA Rated Case**
- **Crystal-Clear Digital Sounds**

- *Laughing Gull*
- *Ring-Billed Gull*
- *Herring Gull*
- *California Gull*
- *Black-Headed Gull*
- *Glaucous-Winged Gull*
- *Double Crested Cormorant*
- *Marsh Hawk*

**Perfect for Landfills, Airfields, Fish Farms,  
Farm Fields or any multi-acre facility.**

Our most powerful system features two high-output amplifiers that drive our specially-designed 20 speaker tower. The intense sound output covers up to 30 acres (12 hectares).

It features solid-state electronics mounted inside a NEMA-type control box, suitable for most any application.

The generating unit mounts easily to a post or pole using the included hardware. The unit comes pre-recorded in four different configurations for the most common bird infestations.

Choose any or all of the 8 sounds, including predators to give the birds even more of a sense of danger. Customize by choosing volume and silent time between sounds.

### Mega Blaster PRO

Complete system includes the generating unit with two built-in high-output amplifiers, 20-speaker tower with audio cables, 40 watt solar panel, battery clips and all mounting hardware.

#### CONFIGURATIONS AVAILABLE:

- Agricultural  
# MEGA-AG
- Crow / Raven  
# MEGA-CROW
- Woodpecker  
# MEGA-WP
- Marine / Gull  
# MEGA-MAR



*The Bird Control 'X'-Perts*

**NOTE:** This unit is capable of sound output up to 125 decibels. **HEARING PROTECTION IS RECOMMENDED.**





selected recordings in a sequential order. *The Random Mode is recommended to keep birds from adapting to a preset pattern of sounds.* To operate the unit in Random mode, set switch 5 in **Mode settings** as follows:

Switch 5	Mode
ON	Random mode ON
OFF	Random mode OFF

## PROGRAMMING EXAMPLE

Recording Switches:	Results
1, 3, 5 and 6 to "ON" position	Plays Bird 1, 3, 5 & 6

### Mode Switches

1 = "OFF" position	
2 = "ON" position	(Medium), every 1 to 4 minutes
3 = "ON" position	
4 = "OFF" position	Operates during daylight hours only
5 = "ON" position	In random, non-sequential order

## VOLUME CONTROL

The unit has a volume control dial on the front panel of the unit. Turning the dial toward low will result in reduced sound output and rotating the dial toward high will result in an increase in sound output.

**CAUTION:** Take care when turning the dial since the unit may be in an inactive state when the dial is rotated. It could then reactivate at a very high level of sound which could be painful to your ears.

## POWER SWITCH

The power switch enables the unit to operate. Slide the switch to the ON position to start the unit. If you turn the unit OFF, be sure to leave it off for about 30 seconds before turning it back on to allow the electronics to properly reset.

## TROUBLESHOOTING

PROBLEM	SOLUTION
Unit is on, but no sound is heard	<ul style="list-style-type: none"> <li>Check volume settings.</li> <li>Check time of operation settings.</li> <li>Check that at least one bird is selected to play.</li> </ul>
Unit is on, but plays the same bird over and over, regardless of settings	Reset the unit by turning it off for 30 seconds and then back on.
Unit is not operating properly in the DAY or NIGHT mode	<ul style="list-style-type: none"> <li>Double check Mode switch settings.</li> <li>Make sure photocell is not obstructed.</li> <li>Make sure the photocell is not affected by bright lights in either the front or the back of the unit.</li> </ul>
Unit does not function properly when connected to a 12 volt battery	<ul style="list-style-type: none"> <li>Check battery condition.</li> <li>Turn power switch on unit to the OFF position. Reconnect the battery, wait 30 seconds, then switch the unit back on.</li> </ul>

## LIMITED WARRANTY

IF YOU ARE NOT COMPLETELY SATISFIED, CONTACT THE PLACE OF PURCHASE OR OUR CUSTOMER SERVICE DEPARTMENT WITHIN 1 YEAR OF YOUR DATE OF PURCHASE FOR PROMPT AND COURTEOUS REPLACEMENT, REPAIR OR REFUND.

BIRD-X INC'S LIABILITY HEREUNDER SHALL BE LIMITED TO REFUNDING THE PURCHASE PRICE PAID BY CUSTOMER OR REPLACING THE PRODUCT, IN BIRD-X'S SOLE DISCRETION, AND UNDER NO CIRCUMSTANCES SHALL BIRD-X INC BE LIABLE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES, OF ANY NATURE WHATSOEVER, ARISING FROM THE CUSTOMER'S USE OR OPERATION OF THE PRODUCT; PROVIDED, HOWEVER, THAT THIS LIMITATION MAY BE LIMITED BY STATE LAW.

EXCEPT FOR THE EXPRESS ONE-YEAR LIMITED WARRANTY SPECIFICALLY DESCRIBED HEREIN, BIRD-X INC DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, RELATING TO THE PRODUCT, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR IMPLIED WARRANTY OF FITNESS; AND THE EXPRESS WARRANTIES ARE IN LIEU OF ALL OBLIGATIONS OR LIABILITIES ON THE PART OF BIRD-X INC ARISING OUT OF OR IN CONNECTION WITH THE SALE, USE, OR OPERATION OF THE PRODUCT.



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# BIRD-X MEGABLASTER

## PRIOR TO INSTALLATION

Your complete Bird-X Mega-Blaster kit includes a control unit, 40 watt solar panel, battery cable with clips and a 20 speaker tower. Open the control unit by lifting the two latches on the side of the enclosure.



Cable Strain Relief

Prior to operation, route the speaker and power cables from their respective jacks on the control panel down through the cable strain relief in the lower part of the enclosure.

**IMPORTANT:** Be certain that the power switch is in the OFF position and the volume control is set to the minimum (LOW) volume level (counterclockwise) as shown in Fig. 1 when powering up the unit.



Fig. 1

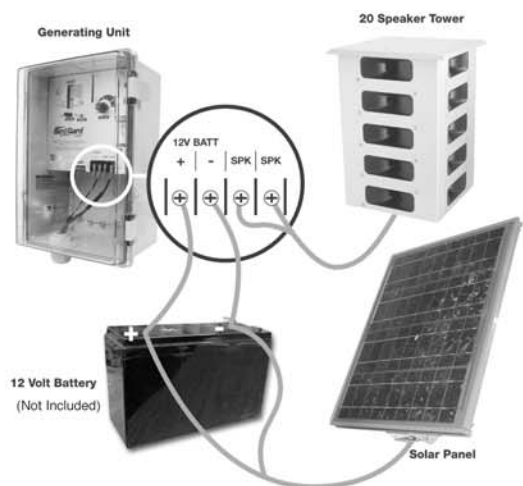
## SETUP AND INSTALLATION

- 1) Use the mounting hardware (included) to mount the control unit box to a wall, post, pole or other vertical surface.
- 2) Attach the battery cable assembly to a 12V battery (not included) matching the positive and negative terminals. The other end of the cable comes preinstalled into the power terminal block. Attach the



Complete system shown mounted on a pipe with solar panel.





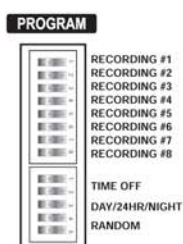
**Fig. 2** Wiring Setup Diagram

two speaker wires from the 20 speaker tower to the speaker terminals on the generating unit. Connect the solar panel to the battery matching the positive and negative terminals on both ends. (Fig. 2)

- 3) It is recommended to mount the 20 speaker tower on a pole or surface that is aimed directly and at the same level as the infected area.
- 4) Set the Recording switches, Mode Setting switches, Time-Off switches, Time of Operation switches and Random Operation switches to the desired settings. (See PROGRAMMING YOUR MEGABLASTER for complete details on how to program your bird repeller).
- 5) Make sure the volume setting is set to **LOW** (all the way counterclockwise).
- 6) Slide the power switch to the **ON** position. The unit may take a few seconds before starting.
- 7) Adjust the volume to the desired level.
- 8) Close the cover and latch shut.

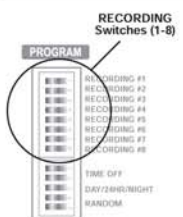
## PROGRAMMING YOUR MEGABLASTER

To program your Megablaster unit you will need a small screwdriver, toothpick, or other small, rigid



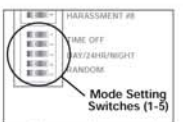
object to toggle the switches in the switch array. The switch array is the switch bank located in the top left corner of the unit (under "PROGRAM"). A switch is **ON** if the switch is pressed down on the right-hand side. The switch is **OFF** if the left side is pressed down.

## RECORDING SETTING SWITCHES



The Recording switches are the first eight switches in the switch array. Each switch has a recording number to the right of it that corresponds with the bird descriptions listed on the foil label inside the unit.

## MODE SETTING SWITCHES



The Mode Setting switches set the various modes of operation: such as the amount of time between playing bird distress calls, when the unit will operate (day only, night only, or 24 hours), and whether the unit will operate in the Random Mode or Normal Mode.

Switch	Mode or Function
1	Sets the Time-Off Period
2	Sets the Time-Off Period
3	Sets the Time the unit plays
4	Sets the Time the unit plays
5	Turns Random Mode On or Off

## TIME-OFF SWITCHES



The **two** Time-Off switches are located **just below the Recording switches** in the switch array. When the unit is set to one of the various Time-Off modes, the unit will delay a number of seconds or minutes between recorded sounds. Please note that the unit will play all of the selected recordings (either sequentially or non-sequentially, depending on the Random Mode) then it will go into a delay. The time the unit stays off depends on the Time-Off and the Random Mode settings. If the unit is operating in

Random Mode, the unit will delay anywhere from the minimum value to the maximum value for that time-off setting. If the unit is not in Random Mode, it will delay only the minimum value. To set the Time-Off period (or delay interval), use the following settings on switches 1 and 2 in the mode function settings.

Switch 1	Switch 2	Time Off Period
ON	OFF	Short
OFF	ON	Medium
ON	ON	Long
OFF	OFF	Extra Long

Mode	Min	Max
Short	17 sec	50 sec
Medium	1 min	4:15 min
Long	5:00 min	10:00 min
XLong	10 min	30 min

## TIME OF OPERATION SWITCHES



The **two** "Day/24hour/Night" switches are located **just under the Time-Off switches** in the switch array.

'Night Mode' operates the unit at night and 'Day Mode' operates the unit during the day. However, the photocell that senses the sunlight is susceptible to bright lights. Take care not to have bright lights shining towards the unit since this can prevent the unit from operating properly. In 24-hour mode, the unit will operate continuously, regardless of the time of day. To set the time period for the unit to operate set switches **3** and **4** in the Mode Function settings to the following:

Switch 3	Switch 4	Mode
ON	OFF	Day Only
OFF	ON	24-Hour
ON	ON	Night Only
OFF	OFF	also Night Only

## RANDOM OPERATION SWITCH


The "Random" switch is the bottom switch in the switch array. When operating in Random Mode, the unit will randomly play the selected recordings in non-sequential order. When the unit is not operating in the Random Mode, the unit will play the



## Appendices

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### Appendix 9 – Corral Fly - Recycling Containment Weekly Inspection Report

		<h2 style="text-align: center;">Weekly Inspection Report</h2> <h3 style="text-align: center;">Water Treatment Facility and Containment</h3>		
Work Order No:				
Inspected by (name and signature):				Date/Time:
<b>Review of Prior Corrections</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>	<b>Comments</b>
Have all identified issues from the previous facility inspection report been corrected and noted?				
<b>Equipment Description</b>	<b>Leak or spill? (Y/N)</b>	<b>Working condition? (Good / Needs Repairs)</b>	<b>Comments</b>	
<b>Water Treatment Facility</b>				
Upstream Pump (20 HP)				
Flow Line to Reaction Tanks				
Reaction Tanks				
Treatment pump (50 HP)				
Weir Tanks				
Manifold at Weir Tank				
Recycle & Flowback Lines				
Downstream Pump (20 HP)				
Flow Line to Treated Water Pond				
<b>Treated Water Containment(s) / Pond(s)</b>				
Manifold				
Leak Detection System*				
Are exposed liners intact?*				
Does surface show visible oil?				
Fluid Height of Staff Gauge(s):				
<i>* If a liner's integrity is compromised, or if any penetration of the liner occurs above the water surface, then the operator will notify the District office within 48 hours (phone or email).</i>				
<b>Additional Comments (including any equipment not checked off):</b>				





## Appendices

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### Appendix 10 – Corral Fly - Recycling Containment Monthly Inspection Report



## Monthly Inspection Report

Treated Water Containment / Pond

Work Order No:

Inspected by (name and signature):

Date/Time:

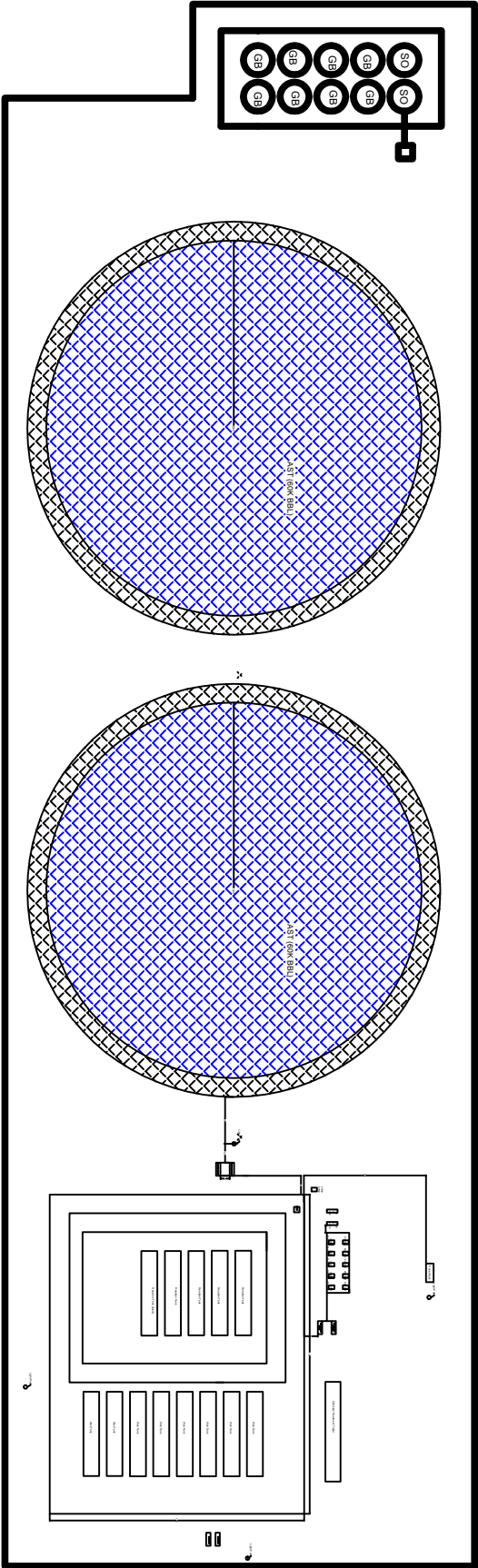
Review of Prior Corrections	Yes	No	N/A	Comments
Have all identified issues from the previous facility inspection report been corrected and noted?				
Equipment Description	Yes or No	Working condition? (Good / Needs Repairs)	Comments	
Are diversion ditches and berms around the containment secure? (check for erosion and collection of surface water run-on)				
Is the leak detection system intact? (check for evidence of damage or malfunction and monitor for leakage).				
Are there any dead migratory birds and other wildlife inside pond/treated water?*				
Are the sources and disposition of all recycled water recorded?**				
<p>* Within 30 days of discovery, report the discovery of dead migratory birds or other wildlife to the appropriate wildlife agency and to the division district office in order to facilitate assessment and implementation of measures to prevent incidents from reoccurring</p> <p>** Report to the division the total volume of water received for recycling, with the amount of fresh water received listed separately, and the total volume of water leaving the facility for disposition by use of the form C-148</p>				
Additional Comments (including any equipment not checked off):				



## Appendices

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### Appendix 11 – Corral Fly – Recycling Facility and ASTs Information





**Engineering and Standard  
Operating Procedures (QA/QC)  
for the  
Above Ground Storage Tanks  
(AST)  
Also known as  
Modular Large Volume Tanks  
(MLVT)**

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## 1.1

# EMERGENCY ACTION PLAN

## EMERGENCY PERSONNEL NAMES AND PHONE NUMBERS

DESIGNATED RESPONSIBLE PERSONNEL (Highest ranking manager at the site, such as, crew supervisor or crew lead.)

Name: \_\_\_\_\_

Phone: \_\_\_\_\_

### **EMERGENCY COORDINATOR:**

Name: Brian Bullock

Phone: 307-267-3964

## AREA MONITORS:

**Controller:** Mike Karaouni

Phone: 307-247-0791

**US Sales Manager:** Chad Campbell

Phone: 307-259-1987

## TANKS

North Dakota: Jake Travers

Phone: 208-610-6692

Wyoming: JW Morris

Phone: 307-267-8075

## WATER TRANSFER

Wyoming: Ben Ledford

Phone: 307-277-4681

## WELL WATER SOLUTIONS AND RENTALS OWNERSHIP

**CEO** Chris Songe

Phone: 307-247-1143

**PRESIDENT** Sean Lovelace

Phone: 307-267-1878

# EVACUATION ROUTES

- Evacuation routes have been posted in each work area. The following information is marked on evacuation maps.
  1. Emergency exits
  2. Primary and secondary evacuation routes
  3. Locations of fire extinguishers
  4. Fire alarm pull station locations
  5. Assembly points
- Site personnel should know at least two evacuation routes.
- All emergency numbers listed in this manual are for the Casper WY area. All field employees shall list in the space provided all emergency numbers needed for the regions that they are working in on the following form and in the JSA (Pre Job Safety Analysis).

# EMERGENCY PHONE NUMBERS

**FIRE DEPARTMENT:** Emergency 911  
Non-emergency 307-237-7260 (Bar Nunn volunteer FD)

**AMBULANCE:** Emergency 911  
Non-emergency 307-237-7260 (Bar Nunn volunteer FD)

**POLICE:** Emergency 911  
Non-emergency 307-235-9282 (Sheriff's office dispatch)

**POWER COMPANY:** 1-888-221-7070 (Rocky Mountain Power)

**WATER COMPANY:** 307-265-7034 (Wardwell Water and Sewer district)

**GAS COMPANY:** 1-800-563-0012 (Source Gas)  
Local Number 307-234-6216

## EMERGENCY REPORTING AND EVACUATION PROCEDURES

Types of emergencies to be reported by site personnel are:

- MEDICAL
- FIRE
- SEVERE WEATHER
- BOMB THREAT
- CHEMICAL SPILL
- EXTENDED POWER LOSS
- OTHER (specify)\_\_\_\_\_

(e.g., active shooter, terrorist attack/hostage)

### MEDICAL EMERGENCY

- Call medical emergency phone numbers
  - Ambulance
  - Fire Department
  - Police

Provide the following information:

- a. Nature of medical emergency
- b. Location of the emergency (address, building number, room number)
- c. Your name and phone number you are calling from

- Do not move victim unless absolutely necessary
- Call the following personnel trained in CPR and First Aid to provide the required assistance prior to the arrival of professional medical help:

Brian Bullock 307-267-3964

Mike Karaouni 307-247-0791

Marc Collier 307-277-6043

- If trained personnel are not available, as a minimum, attempt to provide the following assistance:
  1. Stop the bleeding with firm pressure on the wounds (note: avoid contact with blood and other body fluids.)
  2. Clear the air passage using the Heimlich maneuver in case of choking.
- In case of rendering assistance to personnel exposed to hazardous materials, consult the SDS (Safety Data Sheet) and wear the appropriate PPE (personal protective equipment) attempt First Aid ONLY if trained and qualified.

## **FIRE EMERGENCY**

When fire is discovered:

- Activate the nearest fire alarm (if installed)
- Notify the local fire department by calling 911.

Be prepared to give location, (address, building number, room number) your name and number you are calling from.

- If alarm is not available, notify site personnel about the fire emergency by the following means.
  - Voice communication
  - Phone paging
  - Radio
  - Other (specify)\_\_\_\_\_

Fight fire ONLY if:

- The Fire Department has been notified.
- The fire is small and is not spreading to other areas.
- Escaping the area is possible by backing up to the nearest exit.
- The fire extinguisher is in working condition and personnel are trained to use it.

Upon being notified about the fire emergency, occupants must:

- Leave the building using the designated escape routes.
- Assemble in the designated area (specify location)
- Remain outside until the component authority (Designated official or designee) announces that it is safe to reenter.

Designated official, Emergency Coordinator, or supervisors must,

- Disconnect utilities and equipment unless doing so jeopardizes his/her safety.
- Coordinate an orderly evacuation of personnel.
- Perform an accurate head count of personnel reported to the designated area.
- Determine a rescue method to locate missing personnel.
- Provide the Fire Department personnel with the necessary information about the facility.
- Perform assessment and coordinate with ownership for office closing procedures.

Area monitors must:

- Ensure that all employees have evacuated the area.
- Report any problems to the Emergency Coordinator at the assembly area.
-

## **EXTENDED POWER LOSS**

In the event of extended power loss to the facility, certain precautionary measures be taken depending on the geographical location and environment of the facility:

- Unnecessary electrical equipment and appliances should be turned off in the event that power restoration would surge causing damage to electronics and effecting equipment.
- Facilities with freezing temperatures should turn off and drain the following lines in the event of a long term power loss.
  - Fire sprinkler system
  - Standpipes
  - Portable water lines
  - Toilets
- Add propylene-glycol (anti-freeze) to drains to prevent traps from freezing.
- Equipment that contains fluids that may freeze due to long term exposure to freezing temperatures should be moved to heated areas, drained of liquids, or provided auxiliary heat sources.

Upon restoration of heat and power:

- Electronics should be brought up to ambient temperatures before energizing to prevent condensate from forming on circuitry.
- Fire and portable water piping should be checked for leaks from freeze damage after the heat has been restored to the facility and water turned back on.

## **CHEMICAL SPILL**

In the event of a spill, always consult the SDS and check safe distances and appropriate PPE (Personal Protective Equipment).

When a large spill has occurred:

- Immediately notify the designated official and Emergency Coordinator.
- Contain the spill with available equipment (e.g. pads, brooms, absorbent powder, etc.)
- Secure the area and alert other on site personnel.
- DO NOT attempt to clean the spill unless trained to do so.
- Attend to any injured personnel and call the medical emergency number, if required.
- Call a local spill clean-up company or the fire department (if arrangements have been made) to perform a large chemical spill clean-up.

Fire department Non-emergency 307-237-7260 (Bar Nunn volunteer FD)

- Evacuate building as necessary.

When a small spill has occurred:

- Notify Supervisor
- If toxic fumes are present, secure the area (with caution tape or cones) to prevent other personnel from entering.
- Deal with the spill in accordance with the instructions described in the SDS.
- Small spills must be handled in a safe manner, while wearing the proper PPE.

## TELEPHONE BOMB THREAT CHECKLIST

INSTRUCTIONS: BE CALM, BE COURTEOUS. LISTEN. DO NOT INTERRUPT THE CALLER.

YOUR NAME: \_\_\_\_\_ TIME: \_\_\_\_\_ DATE: \_\_\_\_\_

CALLER'S IDENTITY: SEX: MALE \_\_\_\_\_ FEMALE \_\_\_\_\_ ADULT \_\_\_\_\_ JUVENILE \_\_\_\_\_ APROX AGE \_\_\_\_\_

ORIGIN OF CALL: LOCAL \_\_\_\_\_ LON DISTANCE \_\_\_\_\_

<input type="checkbox"/> Loud <input type="checkbox"/> Soft <input type="checkbox"/> High pitch <input type="checkbox"/> Deep <input type="checkbox"/> Raspy <input type="checkbox"/> Pleasant <input type="checkbox"/> Intoxicated <input type="checkbox"/> Other <p style="text-align: center;">ACCENT</p> <input type="checkbox"/> Local <input type="checkbox"/> Not local <input type="checkbox"/> Foreign <input type="checkbox"/> Region <input type="checkbox"/> Race	<input type="checkbox"/> Fast <input type="checkbox"/> Slow <input type="checkbox"/> Distinct <input type="checkbox"/> Distorted <input type="checkbox"/> Stutter <input type="checkbox"/> Nasal <input type="checkbox"/> Slurred <input type="checkbox"/> Other <p style="text-align: center;">MANNER</p> <input type="checkbox"/> Calm <input type="checkbox"/> Angry <input type="checkbox"/> Rational <input type="checkbox"/> Irrational <input type="checkbox"/> Coherent <input type="checkbox"/> Incoherent <input type="checkbox"/> Deliberate <input type="checkbox"/> Emotional <input type="checkbox"/> Righteous <input type="checkbox"/> Laughing	<input type="checkbox"/> Excellent <input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor <input type="checkbox"/> Foul <input type="checkbox"/> Other <p style="text-align: center;">BACKGROUND NOISES</p> <input type="checkbox"/> Factory <input type="checkbox"/> Trains <input type="checkbox"/> Machines <input type="checkbox"/> Animals <input type="checkbox"/> Music <input type="checkbox"/> Quiet <input type="checkbox"/> Office <input type="checkbox"/> Voices <input type="checkbox"/> Machines <input type="checkbox"/> Airplanes <input type="checkbox"/> Street <input type="checkbox"/> Party <input type="checkbox"/> Traffic <input type="checkbox"/> Atmosphere
Voice Characteristics	Speech	Language

## BOMB FACTS

PRETEND DIFFICULTY HEARIN-KEEP CALLER TALKING-IF CALLER SEEMS

AGREEABLE TO FURTHER CONVERSATION, ASK QUESTIONS LIKE:

When will it go off? Certain Hour \_\_\_\_\_ Time Remaining \_\_\_\_\_

Where is it located? Building \_\_\_\_\_ Area \_\_\_\_\_

What kind of bomb? \_\_\_\_\_

What kind of package? \_\_\_\_\_

How do you know so much about the bomb? \_\_\_\_\_

What is your name and address? \_\_\_\_\_

If building is occupied, inform caller that detonation could cause injury or death.

Call the Sheriff at 307-235-9282 and relay information about the call.

Did the caller appear familiar with the shop or location (by his/her description of the bomb location)?

Write out the message in its entirety and any other comments on a separate sheet of paper and attach it to this checklist.

**Notify your supervisor immediately.**

## SEVERE WEATHER AND NATURAL DISASTERS

### **Tornado:**

- When a warning is issued by sirens or other means, seek inside shelter. Consider the following:
  1. Small interior rooms on the lowest floor and without windows.
  2. Hallways on the lowest floor away from doors and windows.
  3. Rooms constructed with reinforced concrete, brick, or block with no windows.
- Stay away from outside walls and windows.
- Use arms to protect head and neck.
- Remain sheltered until the tornado threat is announced to be over.

### **Earthquake:**

- Stay calm and await instructions from the Emergency Coordinator and/or the designated official.
- Keep away from overhead fixtures, windows, filing cabinets, and electrical power.
- Assist people with injuries in finding a safe place.
- Evacuate as instructed by the Emergency Coordinator and/or the designated official.

### **Flood:**

#### **If indoors:**

- Be ready evacuate as directed by the Emergency Coordinator and/or the designated official.
- Follow the designated primary and secondary routes.

#### **If outdoors:**

- Climb to high ground and stay there.
- Avoid driving or walking through flood water.
- If car stalls, abandon it immediately and climb to higher ground.

### **Blizzard:**

#### **If indoors:**

- Stay calm and await instructions from the Emergency Coordinator or the designated official.
- Stay indoors.
- If there is no heat:
  1. Close off unneeded rooms and areas.
  2. Stuff towels or rags in cracks under doors.
  3. Cover windows at night.
- Eat and drink. Food provides the body energy and heat. Fluids prevent dehydration.

- Wear layers of loose-fitting, lightweight, warm clothing if available.

If outdoors:

- Find a dry shelter. Cover all exposed parts of the body.
- If shelter is not available:
  1. Prepare a lean-to, windbreak, or snow cave for protection from the wind.
  2. Build a fire for heat and to attract attention. Place rocks around the fire to absorb and reflect heat.
  3. DO NOT eat snow. It will lower your core body temperature. Melt it first.

If stranded in a car or truck:

- Stay in the vehicle!
- Run the motor for about ten minutes every hour. Open the window a little for fresh air to avoid carbon monoxide poisoning. Make sure the exhaust pipe is not blocked.
- Make yourself visible to rescuers.
  1. Turn on the dome light at night when running the engine.
  2. Tie a colored cloth to the antenna or door.
  3. Raise the hood after the snow stops falling.
- Exercise to keep blood circulating and to keep warm.



1.2



Company Information

Company

Name\_\_\_\_\_

Location\_\_\_\_\_

Company Man\_\_\_\_\_

Phone\_\_\_\_\_

Victim Information

Name\_\_\_\_\_

Category: Injury Illness (circle one)

Location\_\_\_\_\_

Job Title\_\_\_\_\_

Department\_\_\_\_\_

Date\_\_\_\_\_

**Incident Information**

What was the injury or illness?\_\_\_\_\_

Time work began?\_\_\_\_\_

What happened? (short explanation of how the incident occurred)\_\_\_\_\_

\_\_\_\_\_

What object or substance directly harmed the employee?\_\_\_\_\_

\_\_\_\_\_

**Unsafe acts by people: (circle all that apply)**

Operating without permission

Operating at unsafe speeds

Servicing Equipment with power

Making a safety device inoperative

Using defective equipment

Using equipment incorrectly

Unsafe lifting

Taking an unsafe position or posture

Distraction, teasing, or horseplay

Failure to wear PPE

Failure to use available equipment

Other\_\_\_\_\_

Did you see the potential incident while performing the job? YES or NO

Explain\_\_\_\_\_

\_\_\_\_\_

Did you notify the supervisor of the unsafe acts or conditions prior to the incident?

YES or NO

Explain\_\_\_\_\_

\_\_\_\_\_

Where was the supervisor prior to and during the incident?\_\_\_\_\_

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How could this incident have been avoided? (circle all that apply)

Stop the activity	Train supervisor	Routinely inspect for the hazard
Guard the hazard	Redesign task steps	PPE
Train employee	Write a new policy or procedure	
Other_____		

Was there corrective action taken? YES or NO

What correction action was taken?\_\_\_\_\_

\_\_\_\_\_

List all unsafe conditions leading to injury.\_\_\_\_\_

\_\_\_\_\_

What happened? (short explanation of how injury occurred)\_\_\_\_\_

\_\_\_\_\_

Was the supervisor notified of unsafe acts or conditions prior to injury? YES or NO  
Explain\_\_\_\_\_

\_\_\_\_\_

Where was the supervisor prior to/during to the injury?\_\_\_\_\_

\_\_\_\_\_

How could this injury have been avoided?\_\_\_\_\_

\_\_\_\_\_

Was corrective action taken? YES or NO

What corrective action was taken?\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



---

## NEAR MISS REPORT

A near miss is a potential hazard or incident that has not resulted in any personal injury. Unsafe working conditions, unsafe employee work habits, improper use of equipment or use of malfunctioning equipment have the potential to cause work related injuries. It is everyone's responsibility to report and /or correct these potential accidents/incidents immediately. Please complete this form as a means to report these near-miss situations.

---

Department/Location \_\_\_\_\_ Date: \_\_\_\_\_

Time \_\_\_\_\_ ☐ am ☐ pm

Please check all appropriate conditions:

☐ Unsafe Act

☐ Unsafe equipment

☐ Unsafe Condition

☐ Unsafe use of equipment

Description of incident or potential hazard : \_\_\_\_\_

\_\_\_\_\_

Employee Signature \_\_\_\_\_ Date \_\_\_\_\_

*(optional)*

---

## NEAR MISS INVESTIGATION

Description of the near-miss condition: \_\_\_\_\_

\_\_\_\_\_

Causes (primary and contributing) \_\_\_\_\_

\_\_\_\_\_

Corrective action taken (Remove the hazard, replace, repair, or retrain in the proper procedures for the task)

\_\_\_\_\_

\_\_\_\_\_

Signed: \_\_\_\_\_ Date Completed \_\_\_\_\_

Not completed for the following reason: \_\_\_\_\_

Management \_\_\_\_\_ Date \_\_\_\_\_

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**ISA will be filled out prior to the start of the day or different new task.**



**DATE :** \_\_\_\_\_

### Task Description:

[illegible][illegible]

# 1.4

## TRUCK PRETRIP CHECKLIST

<b>Operator</b>	<b>Date</b>
<b>Truck #</b>	<b>Gas/Diesel</b>

### OPERATOR MUST COMPLETE CHECKLIST AT THE START OF THE DAY

Mileage Beginning \_\_\_\_\_ Mileage Ending \_\_\_\_\_

Visual checks	OK	Service	N/A	Notes
Tire Condition				
Head/Tail lights				
Warning lights				
Fluid Levels				
Battery conn.				
Seatbelts				
Mirrors				
Gauges				
Fluid leaks				
Oil change				
Horn				
Steering				
<b>Ops check</b>				
Check oil				
Check coolant				
Diesel additive				
Battery levels				
Tire pressure				
Brakes				
Brake fluid				
Power steering				
Belts/hoses				
<b>In service?</b>	<b>Yes</b>	<b>No</b>		



## TRAILER PRETRIP CHECKLIST

<b>Operator</b>	<b>Date</b>
<b>Trailer #</b>	<b>Dual Tandem/Single</b>

<b>Pre-trip</b>	<b>Ok</b>	<b>Service</b>	<b>Notes</b>
Check gooseneck, connection, safety latch, & emergency Brake away			
All lights and connection			
Tires, pressure, hub, and lugs			
Deck boards, condition, clean, broken			
Min 12 straps and 4 chains and ratchet boomers			
Date of last DOT inspection with proof and registration			
In service?	<b>Yes</b>	<b>No</b>	



## FORKLIFT PRE USE CHECKLIST

FORKLIFT # \_\_\_\_\_ LOCATION \_\_\_\_\_

DAY \_\_\_\_\_ SHIFT \_\_\_\_\_ TIME \_\_\_\_\_

ITEM INSPECTED	OK	HIGH	LOW	AMOUNT ADDED
Fuel level				
Oil level				
Leaks under lift				
Forks, backrest, and Carriage				
Mast, Chain, Hydraulic lines				
Check Frame for cracks				
Tires, tire pressure, Axles				
Overhead Guard				
Fuel tank and connections				
Hydraulic cylinders and levels				
Battery and Cables				
Seat and Seatbelt				
Horn and backup alarm				
Lights and ops manual				
Gauges and instruments				
Brakes and Emergency brake				
Hydraulic controls and lift				
Steering				
Check boom for leaks and cracks				
All glass and wipers				
All Mirrors				



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### BACKHOE PRE USE CHECKLIST

BACKHOE # \_\_\_\_\_ LOCATION \_\_\_\_\_

DAY \_\_\_\_\_ SHIFT \_\_\_\_\_ TIME \_\_\_\_\_

ITEM INSPECTED	OK	HIGH	LOW	AMOUNT ADDED
Fuel level				
Oil level				
Leaks oil, hydraulic, fuel				
Check belts and hoses for cracks				
Battery and cables				
Inspect frame for cracks				
Check Hydraulic lines and fittings				
Check steps and handles				
Check bucket and teeth				
Inspect stabilizers and pads				
Lights and signals				
Horn and backup alarm				
All glass and wipers				
Instruments and gauges				
Steering				
Check tires and pressure				
Check all brakes				
Grease all points daily				



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# Aerial lift pre-use inspection checklist



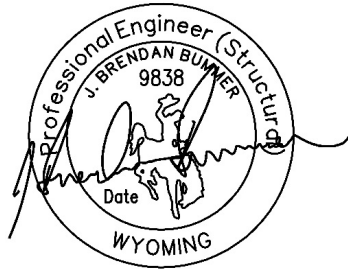
Operator _____ Date _____ Aerial or scissor lift ID _____			
Unit type:		Location	
<b>1. Safety Precautions</b>	OK, NO, NA	<b>2. Check Operations</b>	OK, NO, NA
Windy		Horn	
Less than 20-25 MPH		Guage	
PPE		Brakes	
Wheel chock or Brake		Lights	
Working surface -Level		Steering	
Power Lines or Electrical Source		Attatchments or Accessories	
Load Limits		Back up Alarm	
Outriggers		Warning lights	
Other		Other	
<b>3. Vehicle Inspection</b>	OK, NO, NA	<b>4. Platform Lift Inspection</b>	OK, NO, NA
Oil Level		Lift and travel controls and switches	
Hydraulic Oil level		Placards, Decals, and Control ID labels	
Fuel Level		Handrails, Guardrails, and Safety Chains	
Check lift and area for leaks		Platform deck and toeboards	
Coolant level		Other	
Tire pressure and condition of tires			
Battery and charger			
Ground control switches			
Other			
Comments			

**Modular Large Volume Tank**

# **STRUCTURAL DESIGN SPECIFICATIONS**

Prepared for:  
**WELL WATER SOLUTIONS**  
**Casper, Wyoming**

**July 1, 2014**



Prepared by:  
**PILLAR STRUCTURAL ENGINEERING**  
1964 E. 1<sup>st</sup> Street  
Casper, Wyoming 82601  
(307) 265-3900  
(307) 265-3559 fax  
[www.pillarse.com](http://www.pillarse.com)

---

## **Structural Design Specifications**

Project: Modular Large Volume MLVT

Project No.: 14-06087

Date: July 1, 2014

Pages 1-8: General References  
Project Summary  
Structural Design Certification  
MLVT Erection Operations Manual  
MLVT Inspection and Testing Specifications

Attachments: Design Drawings

---

## GENERAL REFERENCES

Manual of Steel Construction – Load and Resistance Factor Design, Third Edition, American Institute of Steel Construction.

Welded Steel Tanks for Oil Storage – API Standard 650, Eleventh Edition, June 2007, American Petroleum Institute.

Tank Inspection, Repair, Alteration, and Reconstruction – API Standard 653, Fourth Edition, April 2009, Addendum 1, August 2010, American Petroleum Institute.

## PROJECT SUMMARY

These specifications have been prepared for Well Water Solutions, a supplier of MLVT's located in Casper, WY.

The specifications herein include the structural design certification, MLVT erection operations manual, and MLVT inspection and testing specifications. All other components of the policy requirements including site preparation and liner certification and installation are provided and certified by others. These specifications have been prepared as general guidelines specific to the MLVT's provided only by Well Water Solutions.

## PILLAR STRUCTURAL ENGINEERING

June 30, 2015

Well Water Solutions and Rental, Inc.  
2130 W. 40<sup>th</sup>  
Casper, WY 82604  
Attn: Sean Lovelace

Re: Portable Frac Tank Certification – Pinned Seams

Dear Mr. Lovelace:

Per your request our office has performed a structural analysis of the portable frac tanks as well as the associated accessories. This analysis was performed to determine that the tanks meet the required strength criteria under operating conditions according to the AISC Manual of Steel Construction.

The tanks range in diameter from approximately 81 to 190 feet and are 11 feet, 8 inches in height and are designed to store water. They are constructed of individual steel reinforced panels that are connected together with a patent pending steel pin system.

The following tanks sizes were included in the analysis:

- 10,000 BBL – Approximately 81'Ø
- 20,000 BBL – Approximately 108'Ø
- 30,000 BBL – Approximately 135'Ø
- 40,000 BBL – Approximately 156'Ø
- 50,000 BBL – Approximately 176'Ø
- 55,000 BBL – Approximately 183'Ø
- 60,000 BBL – Approximately 190'Ø

The tanks are constructed of the following materials:

- Tank Panels – ASTM A36, 36 ksi Steel Plate
- Horizontal & Vertical Framing – ASTM A500, Grade B, 46 ksi Structural Steel Tubing
- Connecting Pins - ASTM A36, 36 ksi Steel Round Bar



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June 30, 2015  
Page 2 of 2

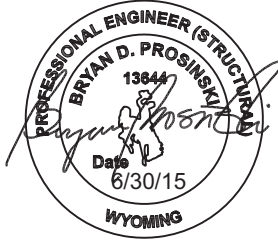
Our office has determined that the portable frac tanks, as described herein, are capable of supporting the operating load conditions in conformance with the AISC Manual of Steel Construction.

Calculations of this analysis can be provided upon request.

If you have any questions or require additional information please contact our office.

Sincerely,

Bryan Prosinski, P.E., S.E.  
Pillar Structural Engineering



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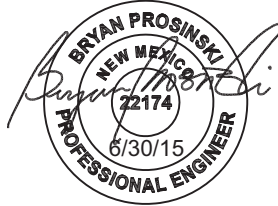
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Sincerely,

J. Brendan Bummer, P.E.  
Pillar Structural Engineering



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June 30, 2015  
Page 2 of 2

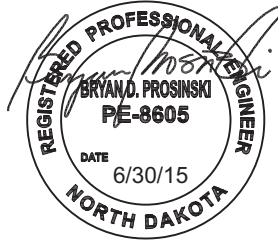
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Pillar Structural Engineering





Box 7866 5014 Industrial Road, Drayton Valley, Ab. T7A 1L5 Ph: (780) 542-3096 Fax: (780) 542-6405

## Engineering Compliance

July 6, 2015

KFE Project #151055

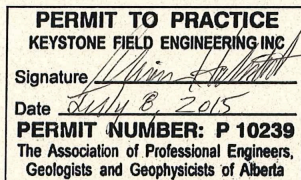
Water Well Solutions and Rentals, Inc.  
Attn: Scott Sandler  
2130 W. 40<sup>th</sup>  
Casper, Wyoming (USA) 82604

Attention: Mr. Scott Sandler

Re: Portable Frac Tank Engineering Review and Compliance – Pinned Seams  
Sizes: 10K, 20K, 30K, 40K, 50K, 55K and 60K Tanks

A structural engineering review was conducted by Peter Vann (P. Eng) of Keystone Field Engineering Inc. for the above noted tank sizes. It was determined that the 'pinned' tank panel connections are capable of supporting the operating load conditions; and the panel lift points are of suitable construction according to the Canadian Handbook of Steel Construction (latest addition). The certified liner for the tanks shall have a minimum bonded seam strength of 40 ppi.

If you have any questions, please contact the office at 780-542-3096.



Peter Vann, P. Eng  
Structural Engineer

KEYSTONE FIELD ENGINEERING INC.  
PV/ kj  
Reference:  
Drawings completed by Nalco FabTech

[www.keystonefieldeng.com](http://www.keystonefieldeng.com)

## 2.3

---

### I. MLVT ERECTION OPERATIONS MANUAL

#### A. PRE CHECKS

1. Complete JSA prior to any work commencing
2. Confirm MLVT location and inspect for proper compliance with WYOGC requirements and site preparation recommendations.
3. Inspect trenches for proper construction according to site preparation recommendations.
4. Check weather conditions for the entire day to assure there will be proper weather conditions. If wind exceeds 15-20 MPH consider stopping work or consider deploying liner once all but one MLVT panels have been erected to provide a satisfactory wind block.
5. Review compaction tests for conformance with site preparation recommendations.
6. Comply with MLVT Inspection and Testing Specifications.

#### B. TOOLS, MATERIALS, and EQUIPMENT

1. Hard Hat
2. FRC Clothing
3. Gloves and Safety Glasses
4. Fall Arrest Gear
5. Box Knife
6. Drills with Deep Well Sockets
7. Telehandler Attachment
8. Telehandler (9,000 lb. or larger)
9. Optional Telehandler Man Basket with OSHA Certified Load Rating
10. Man Lift

#### C. MLVT ERECTION PROCEDURE

1. Inspect ditches, find center of MLVT and paint the ring for the MLVT. 40K=156'Ø, 30K=135' Ø, 20K=108' Ø, 10K=82' Ø.
2. Once the ring is painted make a mark 15' out from the ring around the outside. This mark is used as a reference point to assure there is enough liner to go over the MLVT walls once they are erected.
3. Unroll and position the 10 ounce geotextile fabric to all sides of the ring. Ensure the center mark labeled on the geotextile fabric is in the center of the MLVT. Adjust the geotextile if necessary.
4. Once the geotextile fabric is laid out and free of large wrinkles unroll and pull the liner out past the edges of the geotextile fabric. All layers should overlap each other and the liner should extend past the 15' mark. Once you have ensured the geotextile fabric and liner are square and centered it is ok to then begin to fill the trenches with water. Take care not to walk on liner that has no geotextile fabric underneath it. Make sure boots are clean and free of rocks before walking on any liner.
5. Once the geotextile fabric and liner are pulled out, begin to set the ring by first folding the geotextile fabric and the liner back onto itself to expose the MLVT diameter line for the MLVT panel ring.



- 
6. Put telehandler attachment on telehandler (Remove round bar holding forks onto telehandler and reinsert through custom attachment and re-secure bar to carriage.) and use attachment to place the first panel on the line. Secure the panel in place to secondary equipment with a certified chain. Secondary equipment may be a backhoe or other large machinery.
  7. Continue to set panels in a counter clockwise fashion by placing the female holes of the new panel onto the male pins of the previous panel. Set the rest of the ring in this same manner. (At each panel joint secure a 16 ounce geotextile strip to top pin of the panel and drape to the inside of the MLVT. Spray glue or tape in place on the interior joint to provide added liner protection at these points.)
  8. Hang one to two fill lines and secure them with ratchet straps to give the water trucks a place to continue filling the MLVT as the remainder of the panels are erected.
  9. Once there are enough panels (about half) in place for the MLVT to hold itself erect, begin pulling liner up the wall and placing temporary clips to hold in place. Take care to leave sufficient slack in the liner. Ensure that the person in the man basket has on the appropriate fall arrest gear.
  10. Before setting the last panel hang the manifold and connect the suction line and strainer box. (Make sure suction hose is connected in a straight alignment to assure good suction.)
  11. Set the last panel of the MLVT.
  12. Begin setting the permanent clips by adjusting liner in a straight and loose manner to allow for tightening as water is added to the MLVT. Ensure that personnel setting the clips are wearing the proper fall arrest gear.
  13. When the liner is adjusted correctly, place 2 clips per panel and tighten the bolts with impact drills.
  14. Continue setting clips in this manner until all clips are placed. It is very critical to have around 12-16 inches of water in the MLVT before all clips are installed. Monitor the MLVT closely until the minimum required amount of water is in the MLVT. If there is not at least 12 inches of water in the MLVT, install the clips only on every other panel. This will break any vacuum created from wind and will prevent the liner from shifting. Once the required amount of water is in the MLVT it must be fully clipped.
  15. Once all clips are set, trim back the excess liner and discard.
  16. Hang all remaining plumbing and secure with ratchet straps.
  17. Walk location and pick up ALL trash.
  18. Secure all materials and trash to be removed from location and leave location.

---

II. MLVT INSPECTION AND TESTING SPECIFICATIONS

A. VISUAL INSPECTION FREQUENCY

1. MLVT owner to visually inspect each panel as they are offloaded.
2. MLVT owner to visually inspect each panel and panel connection once the MLVT is erected.
3. Operator, contractor, or MLVT owner to conduct routine visual inspections of the exterior panels and panel connections of the MLVT as required by the WYOGC.
4. MLVT owner to visually inspect each panel and panel connection as they are disassembled.
5. MLVT owner to verify thickness of every panel a minimum of every 50 set-ups.
6. Design Engineer of Record to perform annual visual observation of each MLVT in production.

B. VISUAL INSPECTION GUIDELINE

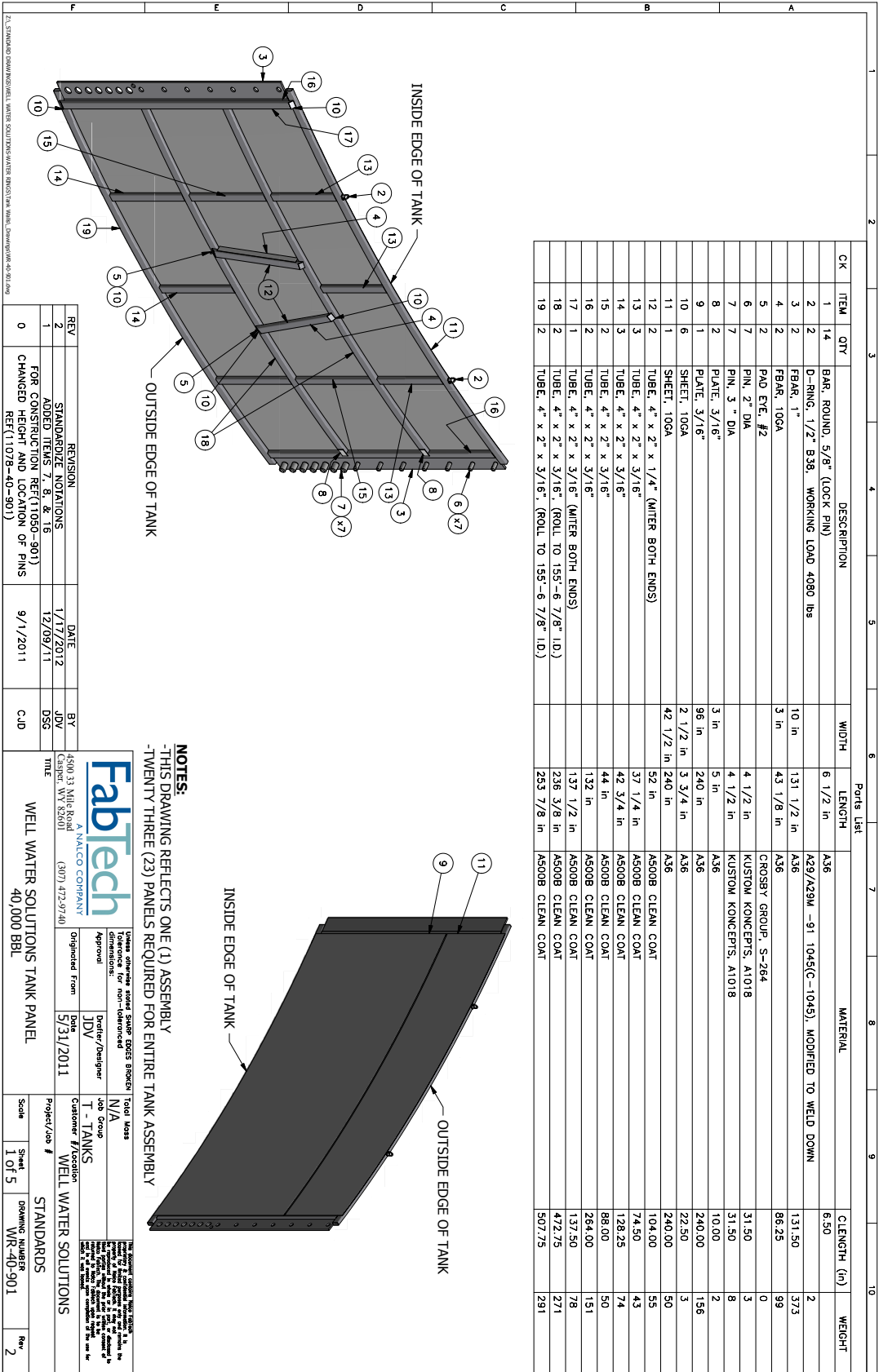
1. Inspect for deficiencies in the MLVT panels, panel connections, and connection components. Deficiencies include but are not limited to; damaged panels or panel connection components, excessive corrosion of steel, cracked welds, paint coatings, etc.
2. Inspect for any indication of tank settlement.
3. Inspect for any indication of leaks.
4. Inspect for any indication of tank panel and/or panel connection fatigue.

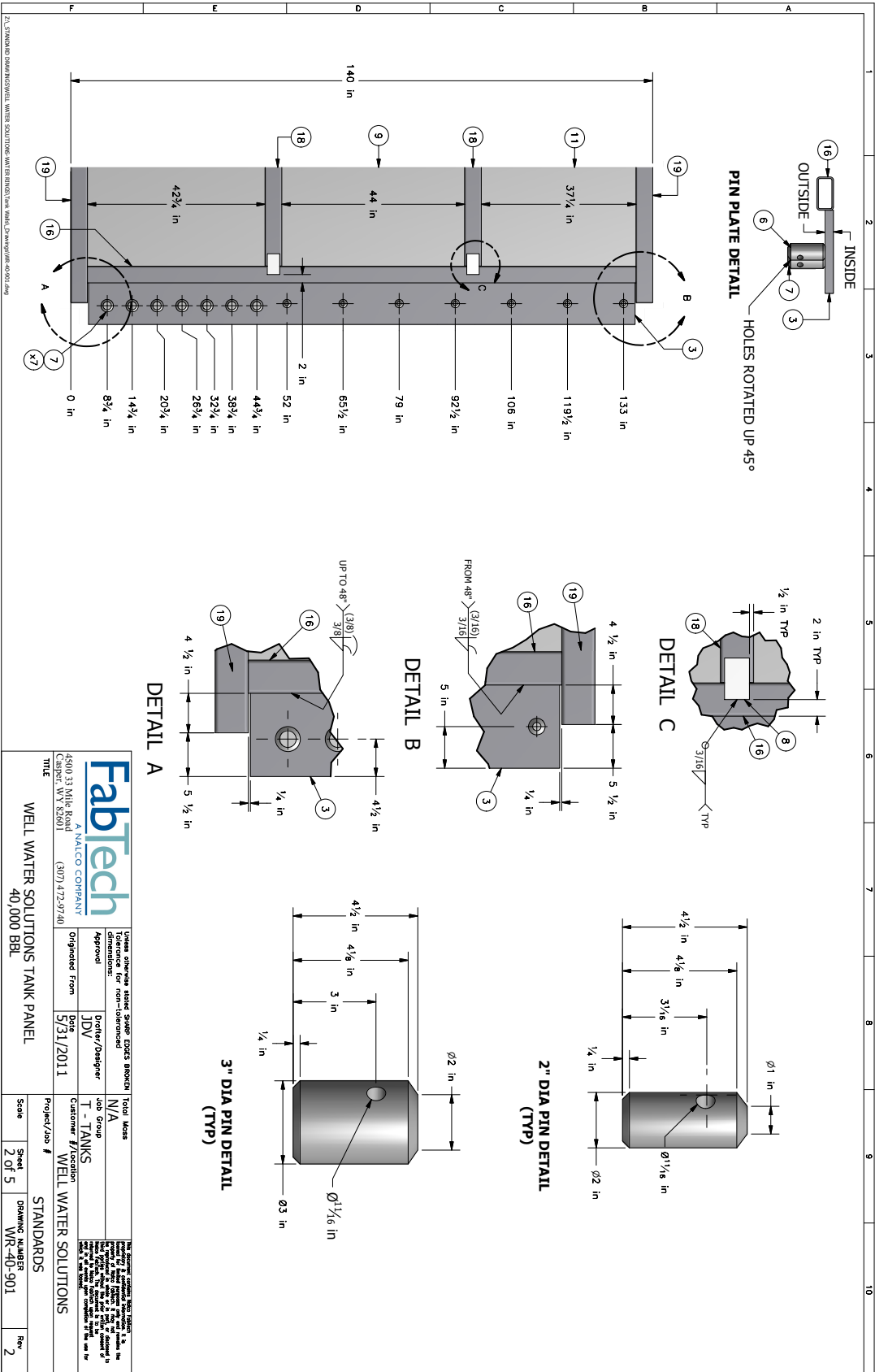
C. MAGNETIC PARTICLE EXAMINATION

1. Magnetic Particle Examination must be performed by a certified inspector a minimum of every 50 MLVT set-ups.
2. The examination must include ALL welded joints.
3. Any deficiencies found must be repaired by a certified welder. If deficiencies cannot be adequately repaired, consult design engineer for appropriate recommendations.

D. RECORDS

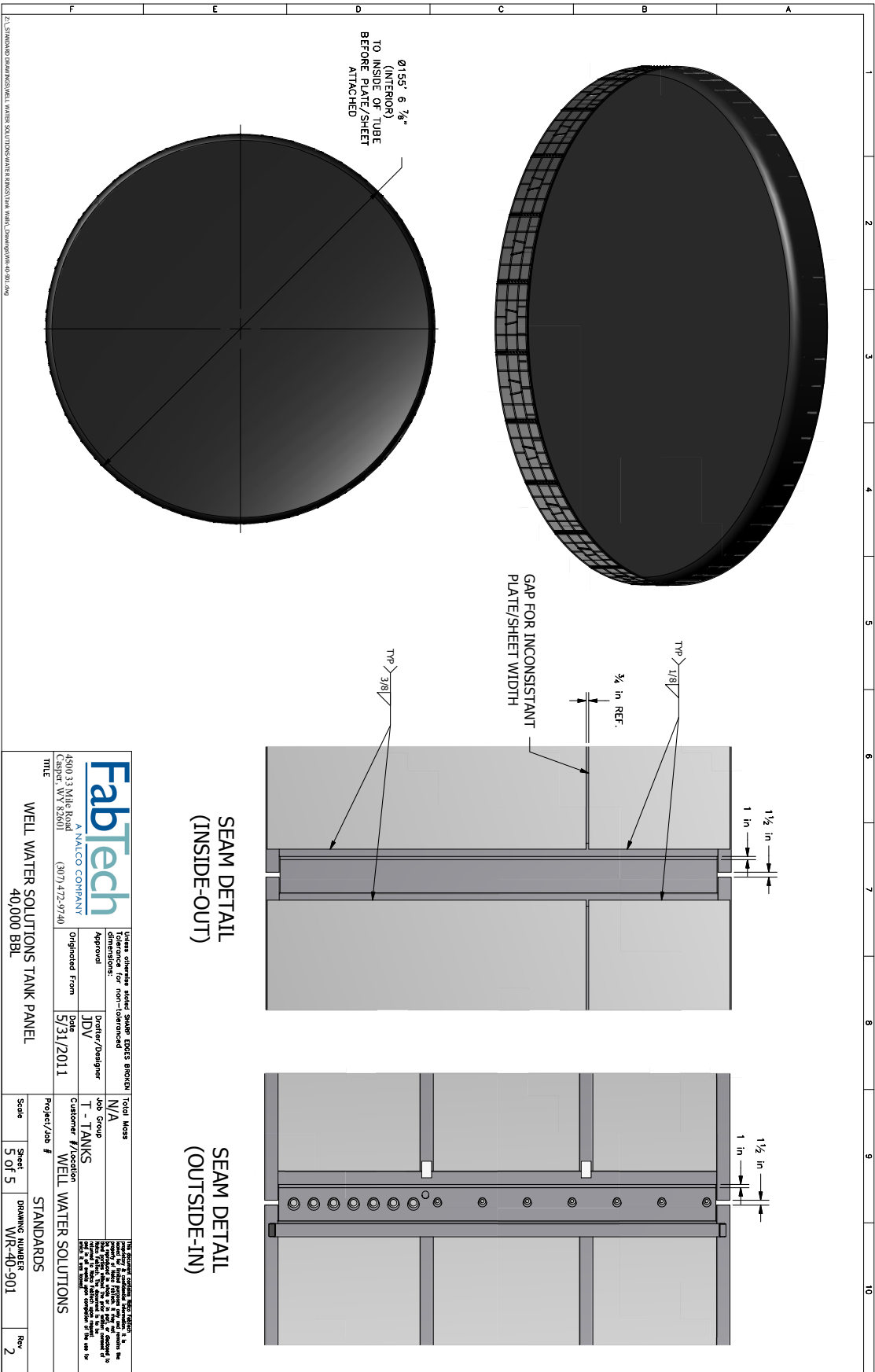
1. Records of all inspections must be kept.
2. A log of each MLVT must be kept by MLVT owner indicating dates and duration of each service, inspections and examinations performed, and repairs or alteration performed.





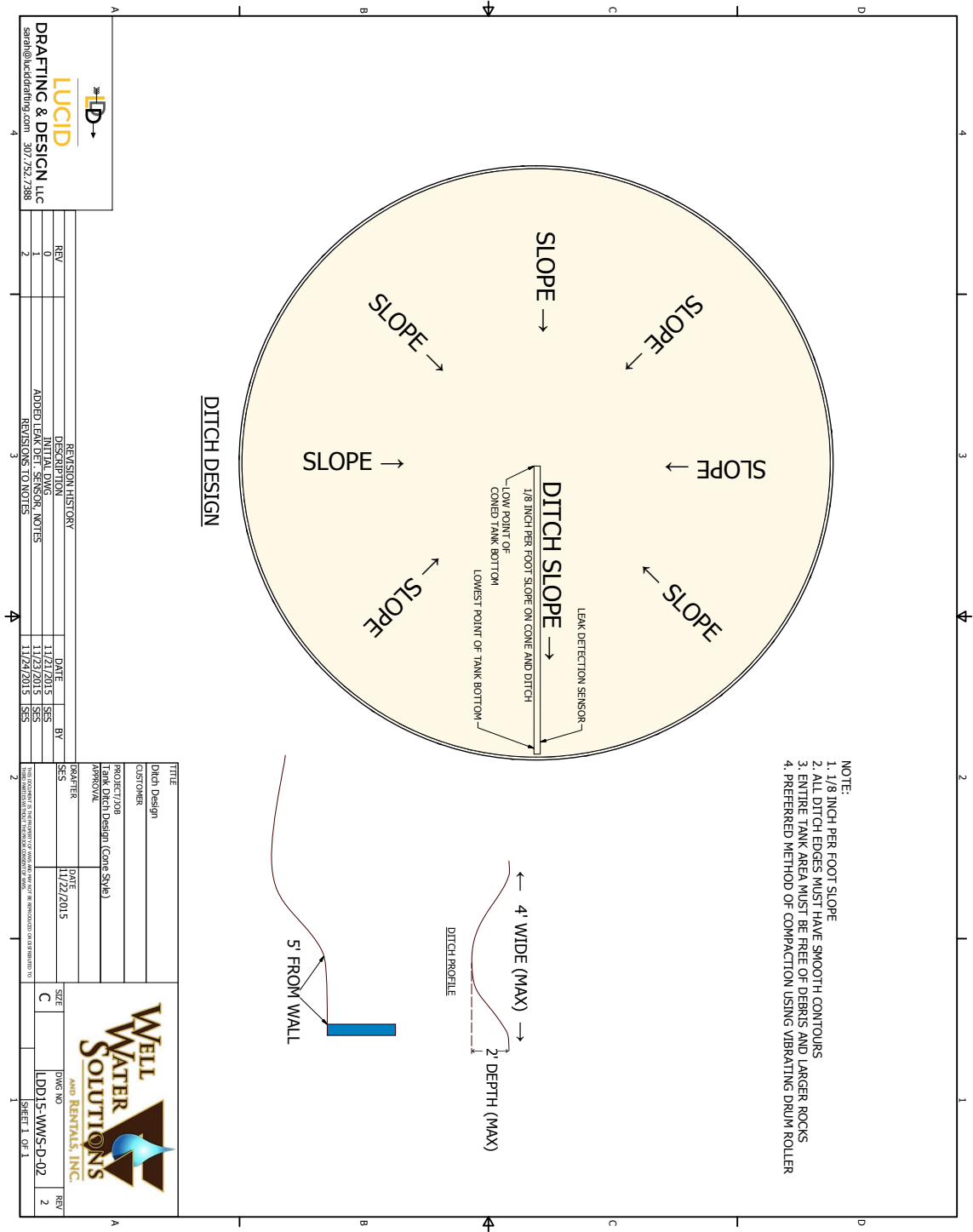






<b>FabTech</b> A NALCO COMPANY 4500 33 Mile Road Casper, WY 82601 (307) 472-9740 MLE		Unless otherwise noted, SHARP CORERS BROKEN Tolerances for non-toleranced dimensions: Approval Originated From	Total Mass N/A Job Group T - TANKS Customer #/Version WELL WATER SOLUTIONS	The drawing contains specific information that is the property of FabTech, Inc. and is intended for internal use only. It is not to be distributed outside the company without the express written permission of the president of FabTech, Inc.
WELL WATER SOLUTIONS TANK PANEL 40,000 BBL		JDV 5/31/2011	Project/Job # STANDARDS	Rev 2
Scale 5 of 5 DRAWING NUMBER WK-40-901				

3.1







## 4.1

November 20, 2015

To whom it may concern:

Referenced Project: Unknown

Referenced Material: SuperGeo L40B

Material Description: 40 mil Nominal Linear Low Density Polyethylene Black/Black  
Smooth provided in fabricated panels approximately 200' X 200'.

Brawler Industries' SuperGeo L40B is compatible and approved for use with processed water containing 1000 ppm oil and bleach. Brawler Industries estimates the exposed life of SuperGeo L40B to be a minimum of 15 years and would issue a warranty for 10 years against UV degradation.

Please see below for additional information required.

Tensile strength at break – 200 lb/in per ASTM D6693 (On data sheet)

Elongation at break – 800 % per ASTM D6693(On data sheet)

Puncture resistance – 90 lbs per ASTM D1004 (On data sheet)

Hydrostatic burst strength – N/A

Axi-symmetric strain – 60 % per ASTM D5617 (On data sheet)

Flexibility cycles without cracking – N/A

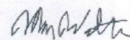
Uv resistance % at 30000 hrs – N/A

Coeff of thermal expansion - <2 %

Chem resistance to oil, bleach – See above – No issues with given concentration level

Complete material description – See above

Seaming method, results – Wedge welding, Hot Air, or Extrusion Welding approved



Marilyn Waltner  
Director of Market Development  
Brawler Industries, LLC

## SuperGeo™ LL Smooth



Properties	Test Method	Nominal Values
<b>40 mil</b>		
Thickness, mil	ASTM D5199	40
Density, g/cm <sup>3</sup> (max)	ASTM D1505	.939
Tensile Properties (MD and TD) <ul style="list-style-type: none"> <li>• Strength at Break, lb/in width (mm)</li> <li>• Elongation at Break, %</li> </ul>	ASTM D6693, Type IV	200 800
2% Modulus-lb/in. (max.)	ASTM D5323	2400
Tear Resistance, lb	ASTM D1004	30
Puncture Resistance, lb)	ASTM D4833	90
Axi-Symmetric Break Resistance Strain- %	ASTM D5617	60
Carbon Black Content, %	ASTM D4218 (2)	2.0-3.0
Carbon Black Dispersion	ASTM D5596	Note (3)
Oxidative Induction Time (OIT) <ul style="list-style-type: none"> <li>(a) Standard OIT (min. ave.)</li> <li>----- or -----</li> <li>(b) High Pressure OIT (min. ave.)</li> </ul>	ASTM D3895 ASTM D5885	100 400
Oven Aging at 85°C <ul style="list-style-type: none"> <li>(a) Standard OIT (min. ave.) -% retained after 90 days</li> <li>----- or -----</li> <li>(b) High Pressure OIT (min. ave.) -% retained after 90 days</li> </ul>	ASTM D5721 ASTM D3895 ASTM D5885	85 83
UV Resistance (5) <ul style="list-style-type: none"> <li>(a) Standard OIT (min. ave.)</li> <li>----- or -----</li> <li>(b) High Pressure OIT (min. ave.) -% retained after 1600 hrs</li> </ul>	ASTM D7238 ASTM D3895 ASTM D5885	N.R. (6) 89
Roll Length, ft		910
Roll Width, ft		22
Roll Area, ft <sup>2</sup>		20,020

*This data is provided for informational purposes only. Brawler Industries, LLC makes no warranties as to the suitability of the fitness for a specific use or merchantability of products referred to, no guarantee of satisfactory results upon contained information or recommendations and disclaims all liability from resulting loss or damage. This information is subject to change without notice, please check with Brawler Industries, LLC for current updates.*



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**HOUSTON, TX**  
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Houston, TX . 77086  
800.364.7688  
281.272.1660

SE HABLA ESPAÑOL

[www.brawler.com](http://www.brawler.com)





US008365937B2

(12) **United States Patent**  
**Lovelace et al.**

(10) **Patent No.:** **US 8,365,937 B2**  
(45) **Date of Patent:** **Feb. 5, 2013**

- (54) **PORTABLE RESERVOIR FRAME**
- (75) Inventors: **Sean Michael Lovelace**, Casper, WY (US); **Christopher Jason Songe**, Casper, WY (US)
- (73) Assignee: **Energy Innovations, LLC**, Casper, WY (US)
- (\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **13/469,845**

(22) Filed: **May 11, 2012**

(65) **Prior Publication Data**  
US 2012/0234829 A1 Sep. 20, 2012

**Related U.S. Application Data**

- (63) Continuation of application No. 13/426,286, filed on Mar. 21, 2012, which is a continuation-in-part of application No. 13/245,492, filed on Oct. 21, 2011.

(51) **Int. Cl.**  
**B65D 6/00** (2006.01)

(52) **U.S. Cl.** ..... **220/4.17**; 220/4.16; 220/693; 220/567; 220/4.12

(58) **Field of Classification Search** ..... 220/565, 220/567, 1.6, 4.16, 4.12, 9.4, 495.06, 495.08, 220/23.9, 4.17, 693, 681  
See application file for complete search history.

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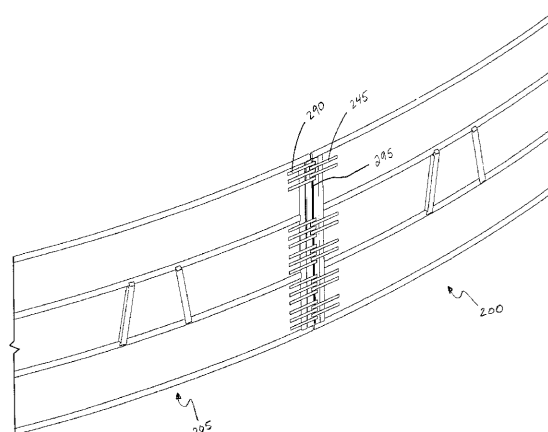
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(57) **ABSTRACT**

A portable reservoir frame having a number of interlocking panels secured by a plurality of interleaved knuckle members is provided.

**20 Claims, 20 Drawing Sheets**





## Reference Photos

