1.Meter Set

Event Description

An assortment of fittings, service regulator, meter and meter gaskets will be available in a tote box. There will be extra fittings in the box that will not be needed. Pipe dope is not required. The meter set must be hand tight, straight, and level. Gloves are not required for this event. Meter set may require physical alignment. Teams will not be allowed to rearrange fittings or touch the tote box prior to the start of the event.

Prior to the start of the event, the Team Captain shall visually verify that all components (fittings and parts) are in the tote box. Once verified, the Team Captain will initial score sheet acknowledging verification. The meter set board and components will be located in the center of each lane; team members will start in center of lane board / components.

Each team's time will be recorded once both people on the team raise one or both hands. If the event is not finished by a team, the team will receive the slowest time plus 20 seconds as their score.

Penalties

There will be a 10-second penalty per infraction (except where noted) for any of the following:

- Loose fittings
- Missing gaskets or gaskets not properly installed
- Meter not level or swivel connections in a bind
- Regulator body not installed correctly; flow arrow pointing in wrong direction
- Touching parts before starting whistle
- Throwing items or tools

Supplied Parts & Tools

Materials

- (1) Roots B42r regulator ³/₄" x 1" body
- (1) ¾" x 3" nipple
- (2) 1" x 3" nipples
- (1) Sensus 275 meter
- (2) 1" Pitt Meter Spuds, Nuts, and Washers
- (3) 1" Elbows
- (2) 1" x 2" Nipples
- (1) 1" union
- (1) 1" Tee
- (1) 1" Plug
- (1) 18" x 1" Nipple

Extra Fittings

- (1) ¾" elbow
- (1) ¾" tee
- (1) 1" x 12" Nipple

Floor Plate (All material below will be assembled prior to the beginning of the event)

- (1) 1" floor flange
- (1) ¾" floor flange
- (1) ³/₄" x 6 3/4" nipple
- (1) ¾" lock wing
- (1) ¾" threaded plug (removal begins the event)



2. Mini Excavator: Drop in the Bucket

Event Description

The Drop in the Bucket will use three (3) containers for the balls. Each container will be specific to one of the balls (softball – 5-gallon bucket, soccer ball – 32-gallon garbage can, and basketball – 44-gallon garbage can).

On the whistle, the operator will attempt to transfer three balls with a mini-excavator bucket and deposit each of them in a specific container. With the mini-excavator bucket placed in the starting position, bucket on the ground. The operator will use the bucket to individually pick up 3 different size balls, and deposit them in three different containers. The balls will be set at different heights and distances from the mini excavator. The operator will transfer each ball individually and maneuver them through the course and deposit each ball in its designated

container. The operator must deposit all three balls in the appropriate container. The balls must be placed (not bounced) inside the container, all balls must remain inside the appropriate container. Operators will have four minutes to complete this course and the event judge will blow a whistle after time expires. All balls must be picked up with the front of the bucket, each ball must roll over the teeth of the bucket. Once all three balls are successfully deposited, the operator must return the excavator bucket to the starting position, with the bucket resting on the ground, with the teeth in the up position. Once this is completed, time will be stopped and recorded for results. The excavator may be started at any time prior to the start of that teams heat.

If a ball is missed, the operator may try for the next ball. Should the operator drop or miss one or more of the balls, the excavator bucket must be returned to the starting position with it resting on the ground (teeth up). The runner may then reset the items missed by the operator. After the items are reset, the runner must return to outside the danger zone before the operator can continue. No penalty will be assessed if the container needs to be moved to retrieve the ball and the container is reset properly in designated area. If damages occur to any of the items, and the team cannot complete the course due to the damages, the judge will blow a whistle indicating the end of the event and that team will be penalized 3 minutes, operator will then return bucket to safe area. The team can then proceed to the next station.

Only the Judges are allowed to set the balls prior to the start of the event.

The Excavator used is dependent upon availability. It is our intent to use the John Deere model 35G (or equivalent) excavator.

The team's operator is responsible for switching the hydraulics prior to the start of their heat.

Penalties

There will be a 10-second penalty per infraction (except where noted) for any of the following:

- Not shutting off equipment prior to exiting
- Team member(s) entering indicated danger zone, or body part breaking the vertical plane of the danger zone. Only exception to this rule: operator gaining entry or exiting equipment.
- Not returning the excavator bucket to the designated area
- Balls not picked up with the front of the bucket during transfer, no side transfer or bumping the stand
- Excavator Bucket teeth not in the "up" position prior to touchdown
- Excavator bucket not in the bucket return area prior to team member exiting Participant area
- Runners foot touching or over the danger zone
- During ball reset: more than one person in the danger zone, per infraction
- Operator bumping the pylon, stand or ball; reasonable effort must be made to pick up with the front of the bucket
- Any pylon, stands, or container damaged or knocked over by equipment (20-second penalty)
- Slamming bucket and or bucket teeth on pavement (30-second penalty)

Event Diagram(s)

Excavator:

• Bucket width: 18"

Pylon Heights for Balls

- Soccer ball: 4'
- Basketball: 3'
- Softball: 5'



3.Pipe Squeeze

Event Description

This event involves a squeeze off of 2-inch plastic pipe. The pipe will be pressurized to approximately 40 psig. The pipe will be a 2-way feed. This event will require the installation of 2 mechanical squeeze tools. The squeeze tools will be positioned in front of the area of the squeeze and will be open prior to the start of the event. The area for each team to squeeze will be identified on the pipe.

To determine that the pipe is sufficiently squeezed, a section of clear PVC pipe is installed on a tee at the center of the event. Inside the pipe is a plastic ball. The ball will rise to the top of the clear pipe when the system is pressurized. When the squeeze tools are installed, the ball will drop to the bottom of the clear pipe. Once the ball has dropped to the bottom of the clear pipe, the judge will stop the time and record it for results.

Penalties

There will be a 10-second penalty per infraction (except where noted) for any of the following:

- Failure to install squeeze tools in designated area for your team
- Handling of squeeze off tools before whistle is blown to start event.

At the conclusion of the event, each team will be responsible for opening the squeeze tools and returning them to their starting positions.



4.Pump & Pig

Event Description

This event involves the assembly of a pig launcher, pressurizing the launcher, pigging the 2-inch section of plastic pipe, and landing the discharged pig in a designated area. The downstream portion of the pipe from the closed lock wing will already be assembled and placed in a pipe

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stand with the pig loaded in the plastic portion of the pipe by the event Judge or designee prior to the start of the competition. When the whistle blows to start the event, competitors will assemble the steel portion of the launcher as shown in the diagram below. Upon completion of the assembly, the entire pig launcher must be removed and placed on the ground with the no part of the 2 inch lock wing extending past the designated mark beside the pipe stand. Using the bicycle pump provided, the steel portion of the launcher must be pressurized to a minimum of 100 PSIG prior to opening the valve to discharge the pig. A designated target will be placed 50 feet from the designated start line, and the distance from the discharged pig will be measured by the event Judge or designee. The closest pig to the designated target after the pig has came to rest will have 10 seconds taken away from the completion time of the event. The time will begin on the whistle and will end at the complete discharge of the pig from the end of the plastic pipe.

Supplied Parts & Tools Materials

Assembled parts:

- 2" soft foam pig
- 7' of 2" PE pipe butt fused to a 2" transition fitting
- 2" lock wing

Parts to assemble:

- 2" x 12" steel threaded nipple
- 2" x 1" bell reducer
- 1" x 2" steel threaded nipple
- 1" x ¼" bell reducer with Schrader Valve and 150 psi gauge

Tools Provided:

- 18" pipe wrench
- 12" pipe wrench
- Adjustable crescent wrench
- Manual Bicycle Pump
- Pipe Dope or tape

Penalties

There will be a 10-second penalty per infraction (except where noted) for any of the following:

- Touching materials prior to the whistle to begin the event
- Any portion of the 2" valve ahead of the designated launching line

- Any team member that does not remain behind the exit end of the plastic pipe
- Not doping or taping pipe joints during assembly
- Not pressurizing to at least 100 PSIG

Team will be disqualified from the event if the pig is intentionally projected in the direction of other people at the event and not the designated target area.

Teams participating in the event will be responsible for the disassembling and return of all parts to the original starting position.

