



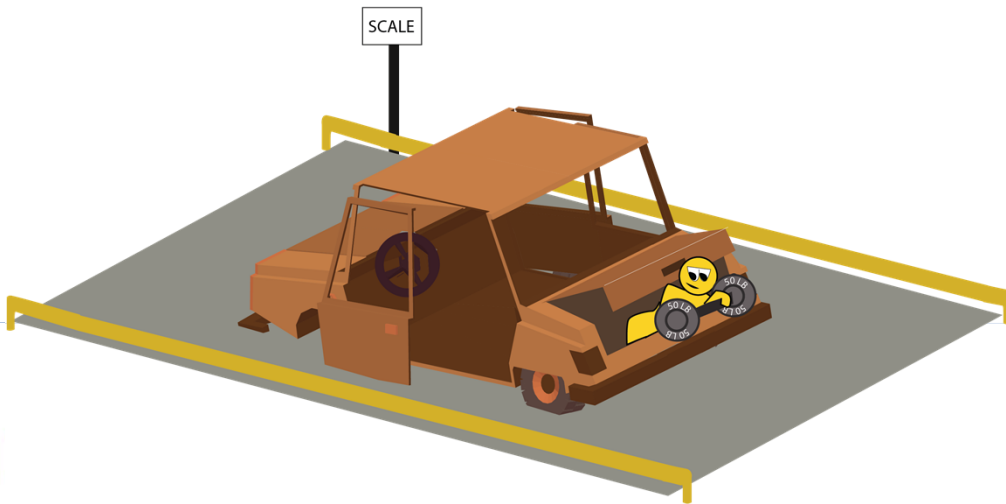
The real cost of inaccuracy in waste & recycling

Bobby Feigler

Michelli Weighing & Measurement

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The real cost of inaccuracy in waste & recycling



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Drivers of Weighing Inaccuracy

1. Issue: Improper Maintenance Causes Scale Errors
2. Issue: Rushing the Weighment Causes Inaccuracy
3. Issue: Improper Positioning of Truck on Scale Drains Profits
4. Issue: Data Recorded Inaccurately Can Be Costly



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Inaccuracy Cost Calculator – Dump Fee

Imagine the rate for this landfill is \$40.80 per ton, or \$0.02 per lb.

| | |
|--------------------------------------|-------------|
| Material cost per lb. : | \$0.02 |
| Scale error in lbs. : | 100 lbs. |
| Loads per day crossing scale: | 100 loads |
| Days per week scale is in operation: | 6 days/week |

Scan this QR code
with your smart phone
camera to use the free
inaccuracy cost
calculator on our
website.



Weekly Loss: \$1,200.00

Monthly (4 weeks) Loss: \$4,800.00

Annual Loss: \$62,400.00



Large loads: loads larger than 5 cubic yards are weighed and charged by the ton - \$40.80/ton (minimum charge \$62.25)

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Inaccuracy Cost Calculator – Recycler

Imagine the rate for #2 Copper Scrap is \$3.00 per lb.

Material cost per lb. : \$3.00

Scale error in lbs. : 5 lbs.

Loads per day crossing scale: 12 loads

Days per week scale is in operation: 5 days/week

Scan this QR code
with your smart phone
camera to use the free
inaccuracy cost
calculator on our
website.



Weekly Loss: \$900.00

Monthly (4 weeks) Loss : \$3,600.00

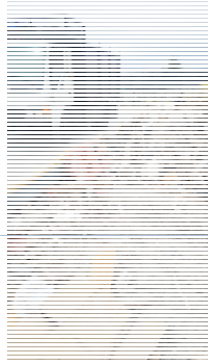
Annual Loss: \$43,200.00

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1. Issue: Improper Maintenance Causes Scale Errors

Problem:

Improper Maintenance



Solution:

Proper Preventative Maintenance

- Establish preventative maintenance schedule
- Track asset status to plan for equipment replacement
- Utilize a quality service provider
 - Ensure they use a standard inspection method
 - Ask about steps to take to prevent inaccuracy



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Standard Inspection Method

- **Task List**
Repeatable operation
- **Specifications**
Based on Handbook 44
- **Test Standards**
Standard NIST Traceable Weights



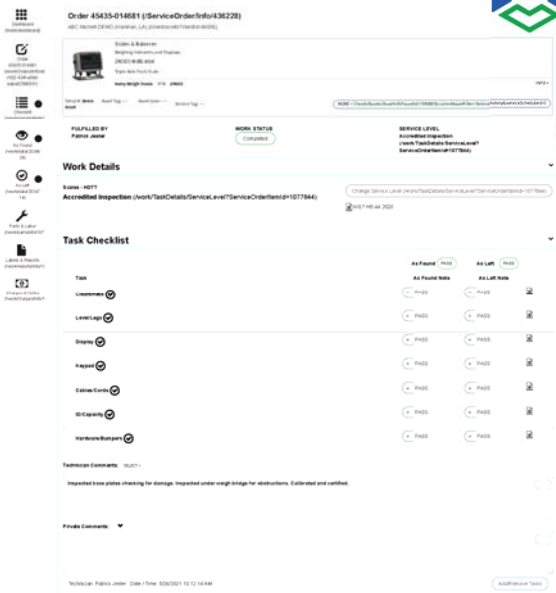





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Require your Service Provider to utilize a Task Checklist

- **Consistency of Service**
Regardless of Technician onsite
- **Ensures critical checks are made**
Helps to identify maintenance issues





Track Records, Assets & Calibrations

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Require Service Provider to share & utilize test specifications

- Ensures scale is being fully tested utilizing NIST Traceable Test Weights
- Standards should represent how you use the scale
- Detailed Results on Certificate



G.T. Michelli Co., Inc.
130 Brookhollow Expressway
Harahan, LA 70123
info@gtmichelli.com
504-735-9622

Calibration Certificate Accredited Calibration

Report Number: 45025-F14881-01
Report Issue Date: 05/06/2021

| CUSTOMER INFORMATION | | SERVICE DETAILS | | ASSET INFORMATION | |
|---------------------------|-------------------|---|---|---------------------|--------------------|
| Account Number: A | Client: ABC | Service Type: Scale - METT | Asset Name: Avery Weigh-Tronix | Asset Number: 1000 | Asset Tag: 1000 |
| PO Number: 00000000 | ABC Hardware Dept | Service Order: 45025-F14881 | Asset Location: Warehouse | Serial Number: 1000 | Asset Tag: 1000 |
| Company: ABC Hardware | 140 Brookhollow | Order Number: 45025-F14881 | Manufacturer: Avery Weigh-Tronix | Scale Number: 1000 | Asset Tag: 1000 |
| Address: Harahan LA 70123 | Harahan LA 70123 | Service Date: 05/06/2021 | Model: 1000 | Asset Tag: 1000 | Equipment ID: 1000 |
| City: Harahan, LA | Harahan, LA | Next Service Due: 05/06/2022 | Capacity: 1000 | Asset Tag: 1000 | Equipment ID: 1000 |
| | | Completed By: Fabrice JACOB 05/06/2021 10:25 AM | Quality Control By: Jasper NASSER 05/06/2021 10:25 AM | | |

| As Found Readings | | | | As Left Readings | | | |
|--|---------|---------|------------|------------------|---------|-------|------------|
| Measurement | Nominal | Reading | U.U. | U.U. Error | Reading | U.U. | U.U. Error |
| Increasing Load | 0.0 | 0 | + 2.3E-051 | -05 -20 | Pass | 0 | + 2.3E-051 |
| Increasing Load | 1000.0 | 1000 | + 2.3E-051 | 0000 - 0020 | Pass | 1000 | + 2.3E-051 |
| Increasing Load | 10000.0 | 10000 | + 2.3E-051 | 0000 - 10000 | Pass | 10000 | + 2.3E-051 |
| Increasing Load | 20000.0 | 20000 | + 2.3E-051 | 0000 - 20000 | Pass | 20000 | + 2.3E-051 |
| Increasing Load | 30000.0 | 30000 | + 2.3E-051 | 0000 - 30000 | Pass | 30000 | + 2.3E-051 |
| Decreasing Load | 20000.0 | 20000 | + 2.3E-051 | 20000 - 22000 | Pass | 20000 | + 2.3E-051 |
| Decreasing Load | 10000.0 | 10000 | + 2.3E-051 | 10000 - 10000 | Pass | 10000 | + 2.3E-051 |
| Decreasing Load | 1000.0 | 1000 | + 2.3E-051 | 1000 - 1000 | Pass | 1000 | + 2.3E-051 |
| Decreasing Load | 0.0 | 0 | + 2.3E-051 | -05 -20 | Pass | 0 | + 2.3E-051 |
| Blank Test - METT only | 20.0 | 20 | + 2.3E-051 | -05 -80 | Pass | 20 | + 2.3E-051 |
| Blank Test - METT & G&P | 20.0 | 20 | + 2.3E-051 | -05 -80 | Pass | 20 | + 2.3E-051 |
| Stability Test - G&P only | 30000.0 | 30000 | + 2.3E-051 | 29900 - 30000 | Pass | 30000 | + 2.3E-051 |
| Stability Test - G&P & Weight | 30000.0 | 30000 | + 2.3E-051 | 29900 - 30000 | Pass | 30000 | + 2.3E-051 |
| Both Test (Standard) - Scale 1 - Section 1.0 | 30000.0 | 30000 | + 2.3E-051 | 29900 - 30000 | Pass | 30000 | + 2.3E-051 |
| Both Test (Standard) - Scale 1 - Section 1.0 | 30000.0 | 30000 | + 2.3E-051 | 29900 - 30000 | Pass | 30000 | + 2.3E-051 |
| Both Test (Standard) - Scale 1 - Section 2.0 | 30000.0 | 30000 | + 2.3E-051 | 29900 - 30000 | Pass | 30000 | + 2.3E-051 |
| Both Test (Standard) - Scale 1 - Section 2.0 | 30000.0 | 30000 | + 2.3E-051 | 29900 - 30000 | Pass | 30000 | + 2.3E-051 |
| Both Test (Standard) - Scale 1 - Section 3.0 | 30000.0 | 30000 | + 2.3E-051 | 29900 - 30000 | Pass | 30000 | + 2.3E-051 |
| Both Test (Standard) - Scale 1 - Section 3.0 | 30000.0 | 30000 | + 2.3E-051 | 29900 - 30000 | Pass | 30000 | + 2.3E-051 |
| Both Test (Standard) - Scale 1 - Section 4.0 | 30000.0 | 30000 | + 2.3E-051 | 29900 - 30000 | Pass | 30000 | + 2.3E-051 |
| Both Test (Standard) - Scale 1 - Section 4.0 | 30000.0 | 30000 | + 2.3E-051 | 29900 - 30000 | Pass | 30000 | + 2.3E-051 |
| Both Test (Standard) - Scale 2 - Section 1.0 | 30000.0 | 30000 | + 2.3E-051 | 29900 - 30000 | Pass | 30000 | + 2.3E-051 |
| Both Test (Standard) - Scale 2 - Section 1.0 | 30000.0 | 30000 | + 2.3E-051 | 29900 - 30000 | Pass | 30000 | + 2.3E-051 |
| Both Test (Standard) - Scale 2 - Section 2.0 | 30000.0 | 30000 | + 2.3E-051 | 29900 - 30000 | Pass | 30000 | + 2.3E-051 |
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| Both Test (Standard) - Scale 2 - Section 4.0 | 30000.0 | 30000 | + 2.3E-051 | 29900 - 30000 | Pass | 30000 | + 2.3E-051 |
| Both Test (Standard) - Scale 3 - Section 1.0 | 30000.0 | 30000 | + 2.3E-051 | 29900 - 30000 | Pass | 30000 | + 2.3E-051 |
| Both Test (Standard) - Scale 3 - Section 1.0 | 30000.0 | 30000 | + 2.3E-051 | 29900 - 30000 | Pass | 30000 | + 2.3E-051 |
| Both Test (Standard) - Scale 3 - Section 2.0 | 30000.0 | 30000 | + 2.3E-051 | 29900 - 30000 | Pass | 30000 | + 2.3E-051 |
| Both Test (Standard) - Scale 3 - Section 2.0 | 30000.0 | 30000 | + 2.3E-051 | 29900 - 30000 | Pass | 30000 | + 2.3E-051 |
| Both Test (Standard) - Scale 3 - Section 3.0 | 30000.0 | 30000 | + 2.3E-051 | 29900 - 30000 | Pass | 30000 | + 2.3E-051 |
| Both Test (Standard) - Scale 3 - Section 3.0 | 30000.0 | 30000 | + 2.3E-051 | 29900 - 30000 | Pass | 30000 | + 2.3E-051 |
| Both Test (Standard) - Scale 3 - Section 4.0 | 30000.0 | 30000 | + 2.3E-051 | 29900 - 30000 | Pass | 30000 | + 2.3E-051 |
| Both Test (Standard) - Scale 3 - Section 4.0 | 30000.0 | 30000 | + 2.3E-051 | 29900 - 30000 | Pass | 30000 | + 2.3E-051 |



Track Records, Assets, & Calibrations



Keep TRAC of Equipment Status

- Identify Faulty Equipment
Replace scales that fail repeatedly
- Monitor Maintenance Schedule
Increase or decrease scale service as you notice inaccuracies

Scalors & Balances
Weighing indicators and displays
Truck Scale
1200000 x 20 00k
Manufacturer: METTLER
Model: 1013

Info Maintenance Lifecycle History Attributes Performance

Maintenance Plans: All Maintenance Plans

Service history for All Maintenance Plans

Time since last failed: As Found: 2 month(s)

Times serviced since last failed: 2

Service interval before failed: Less than a month

| Service | Order | Date | As Found | As Left |
|---------------------|--------------|------------|----------|---------|
| Inspection | 45A35-019747 | 4/29/2021 | N/A | N/A |
| Inspection | 45A35-019506 | 4/2/2021 | PASS | PASS |
| Inspection | 45A35-020959 | 3/5/2021 | FAIL | PASS |
| Inspection | 45A35-008227 | 2/18/2021 | PASS | PASS |
| Inspection | 45A35-006775 | 1/8/2021 | PASS | PASS |
| Standard inspection | 45A35-006236 | 12/19/2020 | FAIL | PASS |
| Calibration | 45A35-005643 | 12/16/2020 | PASS | PASS |
| Calibration | 45A35-004967 | 11/18/2020 | PASS | PASS |
| Calibration | 45A35-004272 | 10/17/2020 | FAIL | PASS |
| Calibration | 45A35-003888 | 9/4/2020 | PASS | PASS |
| Calibration | 45A35-002987 | 8/2/2020 | PASS | PASS |
| Calibration | 45A35-002732 | 8/2/2020 | FAIL | FAIL |
| Calibration | 45A35-002321 | 8/2/2020 | PASS | PASS |
| Calibration | 45A35-002083 | 8/2/2020 | PASS | PASS |
| Calibration | 45A35-002000 | 8/1/2020 | FAIL | PASS |
| Calibration | 45A35-001605 | 4/25/2020 | FAIL | PASS |
| Truck Scale | 45A35-001436 | 3/16/2020 | FAIL | FAIL |
| Calibration | 45A35-000921 | 2/17/2020 | FAIL | PASS |
| Calibration | 45A35-000675 | 1/23/2020 | FAIL | PASS |
| Calibration | 45A35-000273 | 12/18/2019 | PASS | PASS |
| Calibration | 45A35-000039 | 11/17/2019 | FAIL | PASS |
| Calibration | 45A35-000005 | 10/14/2019 | FAIL | PASS |



Track Records, Assets, & Calibrations



2. Issue: Rushing the Weighment Causes Inaccuracy

Problem:

Inefficiency



Solution:

Unmanned Kiosk

- Ensure accuracy while maximizing efficiency
- Minimize risk to drivers & employees
- Reduce labor costs

Solution:

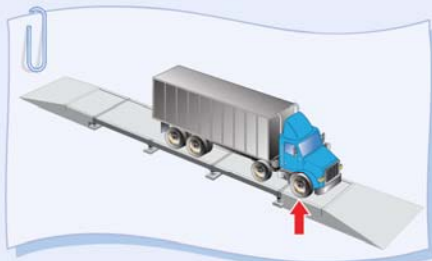
Load Scanner for Volumetric Measurement

- Ensure accuracy while maximizing efficiency
- Allows for efficient cubic yard measurement
- Reduce labor costs

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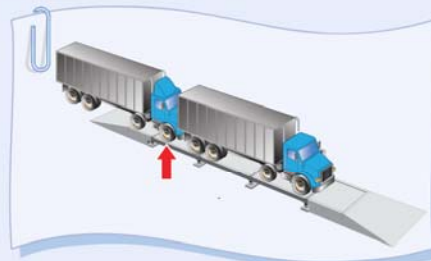
3. Issue: Improper Positioning of Truck on Scale Drains Profits

It is the most common and easiest way drivers can cheat at the truck scale. Unattended scales and scales where large volumes of traffic are moving through quickly are the most vulnerable. This cheat can cost you thousands of dollars in lost profits if undetected.



Scenario 1

A driver pulls up so that one set of axles is off the front of the scale, or not fully on, and leaves a set of axles off the back of the scale. This will cause a deceptively light weight reading and the driver will pay for less than they are receiving.



Scenario 2


With one truck fully on the scale, the next truck in line drives one set of axles on to the scale. This creates a deceptively high weight reading.




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Unmanned Kiosk Weighing System

- **Photo Eyes**
Ensure only 1 truck is on scale at a time
- **Traffic Light**
Tells drivers to pull forward or stop
- **Scoreboard**
Displays weight
- **Unmanned Kiosk**
Prints ticket & records data





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Load Scanning

- **The System**
The Payload Scanner is a non-contact measurement instrument used to measure the volumetric loads in open top vehicles. The system incorporates eye safe laser scanners and Patent Pending Algorithms to determine the actual amount of material carried in vehicles.
- **How It Works**
As vehicles drive below the scan head, and the laser scanners measures the 3D shape profile; while the algorithms record the data returned from the scanners and determine the actual amount of material within the truck bed.

The system then returns actual carried load volume and graphical imagery for each load.

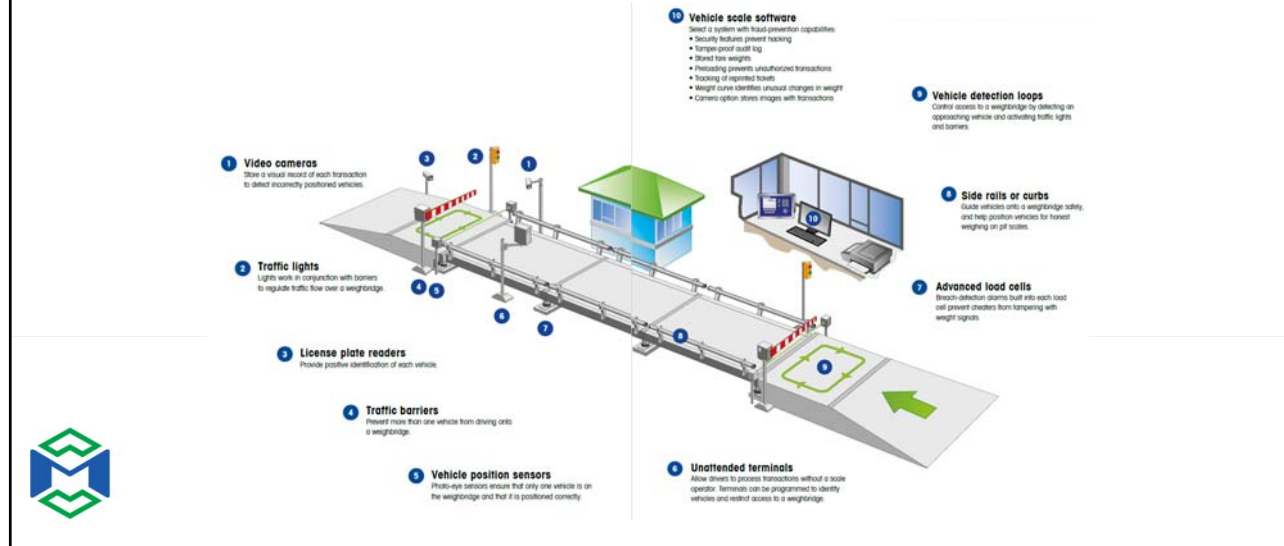
Integrates with scale





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Fraud-prevention equipment to keep your scale Safe and Secure



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4. Issue: Data Recorded Inaccurately Can Be Costly

Problem:

Data Entry Errors



Solution:

Automated Data Collection

- Reduce paperwork
- Minimize labor required for data entry
- Eliminate possibility of human error
- Ensure accurate weights are recorded

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Automatic Data Collection

- **Reduce Paperwork**
Decrease supply expense & chance of ticket loss or damage
- **Remove Risk of Human Error**
No data entry issues such as typos or skipped tickets
- **Minimize Labor Required**
Transaction is digitally recorded as it happens

01:48:29 pm 01/05/2012
Inbound 69880 LB



01:51:12 pm 01/05/2012
Inbound 68140 LB



01:53:12 pm 01/05/2012
Inbound 84280 LB



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Speak with one of our experts for more solutions



- Visit our table to pick up a truck scale checklist
- Scan the QR code with your smart phone to access the inaccuracy cost calculator on our website



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