999 Fourier Dr., Ste. 101
Madison, WI 53717

T 608.826.3600
TRCcompanies.com

November 22, 2022

Ms. Cindy Koepke
Hydrogeologist
Wisconsin Department of Natural Resources
3911 Fish Hatchery Road
Fitchburg, WI 53711

Subject: Refuse Hideaway Landfill
October 2022 Operation Monitoring and Maintenance Activities

Dear Cindy:

TRC completed the following operation, monitoring, and maintenance activities and system troubleshooting at the Refuse Hideaway Landfill in Middleton, WI in October 2022.

- October 1 – October 6, 2022: Van Ert Conducted Electrical System Upgrades
- October 3, 2022: Gas Probe Monitoring
- October 6, 2022: Restart GES Blower System, Troubleshoot Air Compressor System, Evaluate GV-4 Broken Air Line
- October 7, 2022: Site Walk to Evaluate Air Line Relocation
- October 11, 2022: Bi-weekly Site Inspection
- October 20, 2022: Landfill Cap Reseeding
- October 21, 2022: GV-4 Air Line Repair
- October 26, 2022: Monthly Site Inspection and Electrical Evaluation
- October 28, 2022: Completed GV-4 Air Line Repair
- October 31, 2022: Electrical System Evaluation with Van Ert

## Electrical System Upgrades

Van Ert Electric removed the old transformers from the electrical system, prepped the transformer structure and installed a roof over the structure. Following preparation work, one new Square D (Model EXN75T3H) transformer was installed to replace the old transformers to provide the 480-volts needed to operate the leachate and gas extraction systems. The product data for the transformer is attached. A metal roof cover will be installed in the future when supplies are available.

Van Ert conducted startup of the system on October 6, 2022, and adjustments were made to the transformer based on the output voltage reading 560 volts. The system was restarted, and the output voltage ranged between 497 and 501 volts. The gas extraction and air compressor system were restarted, and further discussion is noted below. Based on the initial system start up, output voltage, and air compressor operation, the system electrical repairs are being evaluated by a TRC electrical engineer. TRC was onsite on October 26, 2022, and October 31, 2022 to collect additional information for the evaluation. A summary of the system upgrades and the evaluation will be provided to WDNR once complete.

## Gas Extraction System & Gas Probe Monitoring

The gas extraction system (GES) was restarted on October 6, 2022 and was operated throughout the remainder of the month. TRC conducted two balancing events (October 11 and 26, 2022) since the system was restarted during the month of October.

Perimeter gas probe monitoring was conducted at the site on October 3, 2022, prior to the system being restarted.

Field data from system and gas probe monitoring is included in the attachments.

## Leachate Extraction System

The leachate extraction system remained off during the month of October. A new pump head was installed on the air compressor system in June 2022, and the air compressor system was restarted on October 6, 2022 following electrical upgrades. The electrical contactor for the motor starter failed during the start-up and will need be replaced. Based on the issues with the system to date and the electrical upgrades, the compressor system is being further evaluated by TRC's electrical engineer and a summary will be provided once complete.

During the October 6, 2022, site visit, TRC observed that the air line for gas vent GV-4 was damaged during the September mowing event. TRC coordinated the repairs of the air line with J&R Underground (J&R) and the line was repaired between October 21 and 28, 2022. During the October 21 site visit, the airline was exposed, and it was found that the service line to GV-4 was broken off from a t-fitting installed on the main air supply line. J&R ordered a new t-fitting and installed the fitting along with a new service line to GV-4 on October 28, 2022. Photos of the repair are included in the attached October 28, 2022 field notes.

The leachate tank level was gauged during the October 11, and October 26, 2022 Site Inspections and contained 15.5 inches and 19.75 inches of leachate, respectively.

## Cap Inspection

TRC conducted a monthly inspection of the landfill cap and stormwater conveyance features on October 11, 2022. TRC personnel observed areas of bare soil throughout the landfill cap that were previously seeded in 2021. TRC reseeded select areas on October 20, 2022. The areas will be monitored for regrowth in Spring of 2023. The cap inspection form and photo log are attached with further details.

Monitoring results collected during the site visits completed in October 2022 are attached.

If you have any questions, please contact me at astehn@trccompanies.com or 608-807-8112.

Sincerely,

TRC

Andrew M. Stehn

Andrew Stehn, PE
Project Manager

Attachments: October 2022 Monitoring Results

# October 2022 Monitoring Results

# REFUSE HIDEAWAY LANDFILL
# GAS PROBE MONITORING FORM

TECHNICIAN(S): J. Roelke

DATE: 10/3/2022
START TIME: 8:20 AM
END TIME: 2:00 PM

GAS/INSTRUMENT TYPE: **GEM 2000**
SERIAL NO.: 11668
DATE LAST CALIBRATED: 10/3/2022
METHOD: Standard Calibration Gases
PRESS INSTRUMENT : Manometer

WEATHER CONDITIONS: sunny
TEMPERATURE: 62
BAROMETRIC PRESSURE & TREND: 30.37, falling
GROUND CONDITIONS: moist

| GAS PROBE NAME | Time | PRESSURE (in. WC) | METHANE (% LEL) | METHANE (%, by vol.) | CARBON DIOXIDE (%, by vol.) | OXYGEN (%, by vol.) | COMMENTS |
|---|---|---|---|---|---|---|---|
| **GP-1D** | 8:45 | -0.04 | 6.0 | 0.3 | 11.8 | 4.0 | (2) |
| **GP-1S** | 8:47 | 0.00 | 4.9 | 9.9 | 14.4 | 2.3 | (2) Stable readings at 2 minutes. |
| **GP-2D** | 8:53 | -0.14 | 0 | 0.0 | 5.4 | 15.0 | (1) |
| **GP-2S** | 8:55 | 0.0 | 0.0 | 0.0 | 5.1 | 15.7 | (1) |
| **GP-3** | 8:58 | 0.0 | 22.0 | 1.1 | 3.1 | 16.9 | (1) |
| **GP-4** | 9:04 | 0.0 | 0.0 | 0.0 | 7.2 | 15.6 | (1) |
| **GP-5** | 9:07 | 0.0 | 0.0 | 0.0 | 4.6 | 17.4 | (2) |
| **GP-6** | 9:12 | 0.0 | 0.0 | 0.0 | 4.1 | 18.0 | (1) |
| **GP-7** | 9:20 | 0.0 | 0.0 | 0.0 | 4.2 | 17.2 | (2) |
| **GP-8** | 9:28 | 0.0 | 0.0 | 0.0 | 5.6 | 16.0 | (2) |
| **GP-9** | 9:33 | 0.0 | 0.0 | 0.0 | 4.5 | 16.5 | (1) |
| **GP-10** | 9:38 | 0.0 | 0.0 | 0.0 | 6.1 | 15.2 | (1) |
| **GP-11D** | 9:43 | 0.0 | 39 | 1.9 | 9.9 | 8.0 | (2) |
| **GP-11S** | 9:45 | 0.0 | 0.0 | 0.0 | 6.0 | 15.5 | (2) |
| **GP-12D** | 9:50 | 0.0 | >100 | 5.9 | 11.2 | 9.5 | (1) Stable readings at 2 minutes. |
| **GP-12S** | 9:53 | 0.0 | 0.0 | 0.0 | 1.6 | 18.6 | (1) |
| **GP-13D** | 9:57 | 0.0 | 3 | 0.7 | 4.3 | 14.4 | (2) |

| GAS PROBE NAME | Time | PRESSURE (in. WC) | METHANE (% LEL) | METHANE (%, by vol.) | CARBON DIOXIDE (%, by vol.) | OXYGEN (%, by vol.) | COMMENTS |
|---|---|---|---|---|---|---|---|
| GP-13S | 9:59 | 0.0 | 0.0 | 0.0 | 2.1 | 18.5 | (2) |
| GP-16D | 10:19 | 0.0 | 0.0 | 0.0 | 0.9 | 19.1 | (2) |
| GP-16S | 10:21 | 0.0 | 0.0 | 0.0 | 2.4 | 18.1 | (2) |
| GP-17D | 10:12 | 0.0 | 0.0 | 0.0 | 3.2 | 16.8 | (1) |
| GP-17M | 10:14 | 0.0 | 0.0 | 0.0 | 1.6 | 18.5 | (1) |
| GP-17S | 10:16 | 0.0 | 0.0 | 0.0 | 3.9 | 16.6 | (1) |
| GP-18D | 10:26 | 0.0 | 0.0 | 0.0 | 0.2 | 19.9 | (2) |
| GP-18M | 10:28 | 0.0 | 0.0 | 0.0 | 0.3 | 19.8 | (2) |
| GP-18S | 10:30 | 0.0 | 0.0 | 0.0 | 0.2 | 19.9 | (2) |
| GP-19$^{85-100}$ | 11:12 | 0.0 | 0.0 | 0.0 | 1.1 | 19.8 | (1) |
| GP-19$^{50-70}$ | 11:14 | 0.0 | 0.0 | 0.0 | 1.3 | 19.5 | (1) |
| GP-19$^{25-40}$ | 11:16 | 0.0 | 0.0 | 0.0 | 1.2 | 19.5 | (1) |
| GP19$^{2-15}$ | 11:18 | 0.0 | 0.0 | 0.0 | 1.9 | 18.9 | (1) |
| GP-20$^{85-100}$ | 11:03 | 0.0 | 0.0 | 0.0 | 0.1 | 20.7 | (2) |
| GP-20$^{50-70}$ | 11:05 | 0.0 | 0.0 | 0.0 | 0.3 | 20.5 | (2) |
| GP-20$^{25-40}$ | 11:07 | 0.0 | 0.0 | 0.0 | 0.7 | 20.1 | (2) |
| GP-20$^{2-15}$ | 11:09 | 0.0 | 0.0 | 0.0 | 2.1 | 18.8 | (2) |
| GP-21$^{85-100}$ | 10:54 | 0.0 | 0.0 | 0.0 | 0.2 | 20.3 | (2) |
| GP-21$^{50-70}$ | 10:56 | 0.0 | 0.0 | 0.0 | 0.0 | 20.8 | (2) |
| GP-21$^{25-40}$ | 10:58 | 0.0 | 0.0 | 0.0 | 0.2 | 20.5 | (2) |
| GP-21$^{2-15}$ | 11:00 | 0.0 | 0.0 | 0.0 | 0.6 | 20.2 | (2) |
| GP-22$^{85-100}$ | 11:26 | 0.0 | 0.0 | 0.0 | 2.9 | 18.0 | (2) |
| GP-22$^{50-70}$ | 11:28 | 0.0 | 0.0 | 0.0 | 0.6 | 19.9 | (2) |
| GP-22$^{25-40}$ | 11:30 | 0.0 | 0.0 | 0.0 | 1.5 | 19.0 | (2) |
| GP-22$^{2-15}$ | 11:32 | 0.0 | 0.0 | 0.0 | 3.9 | 17.3 | (2) |

| GAS PROBE NAME | Time | PRESSURE (in. WC) | METHANE (% LEL) | METHANE (%, by vol.) | CARBON DIOXIDE (%, by vol.) | OXYGEN (%, by vol.) | COMMENTS |
|---|---|---|---|---|---|---|---|
| **GP-23$^{85-100}$** | 11:36 | 0.0 | 0.0 | 0.0 | 0.3 | 20.2 | (2) |
| **GP-23$^{50-70}$** | 11:38 | 0.0 | 0.0 | 0.0 | 0.2 | 20.5 | (2) |
| **GP-23$^{25-40}$** | 11:40 | 0.0 | 0.0 | 0.0 | 0.0 | 20.8 | (2) |
| **GP-23$^{2-15}$** | 11:42 | 0.0 | 0.0 | 0.0 | 0.6 | 20.1 | (2) |
| **GP-24$^{85-100}$** | 11:47 | 0.0 | 0.0 | 0.0 | 3.5 | 16.4 | (2) Stable readings at 2 minutes. |
| **GP-24$^{50-70}$** | 11:50 | 0.0 | 0.0 | 0.0 | 1.0 | 19.5 | (2) |
| **GP-24$^{25-40}$** | 11:52 | 0.0 | 0.0 | 0.0 | 0.2 | 20.3 | (2) |
| **GP-24$^{2-15}$** | 11:54 | 0.0 | 0.0 | 0.0 | 1.9 | 19.0 | (2) |
| **GPW-1D** | 13:33 | 0.29 | 0.0 | 0.0 | 3.5 | 16.1 | (1) |
| **GPW-1M** | 13:35 | 0.30 | 0.0 | 0.0 | 0.4 | 19.8 | (1) |
| **GPW-1S** | 13:37 | 0.0 | 0.0 | 0.0 | 2.2 | 17.8 | (1) |
| **G-1D** | 8:33 | 0.0 | 0.0 | 0.0 | 0.1 | 20.7 | (1) |
| **G-1S** | 8:35 | 0.0 | 93 | 4.6 | 12.8 | 5.4 | (1) Stable readings at 2 minutes. |
| **G-2D** | 10:03 | 0.0 | 0.0 | 0.0 | 2.3 | 18.0 | (1) |
| **G-2S** | 10:05 | 0.0 | >100 | 6.1 | 18.1 | 0.0 | (1) Stable readings at 2 minutes. |
| **G-5** | 9:26 | 0.0 | 0.0 | 0.0 | 6.8 | 14.0 | (1) |
| **G-6** | 8:26 | 0.0 | 0.0 | 0.0 | 0.0 | 20.8 | (1) |
| **G-8** | 10:49 | 0.0 | 0.0 | 0.0 | 0.0 | 20.8 | (1) |
| **G-9** | 10:38 | 0.0 | 0.0 | 0.0 | 0.1 | 19.4 | (1) |
| **G-10** | 12:00 | -0.04 | 0.0 | 0.0 | 0.3 | 20.4 | (1) |
| **Speedway Office** | 8:42 | 0.0 | 0.0 | 0.0 | 0.0 | 20.8 | Open to ATM |

**NOTES: 8:13 Stopped monitoring probes to assist with compressor/leachate pumps. 9:16 Started to monitor probe GP-6.**

(1); Locked probe casing.
(2): Probe is above casing and cannot be locked.
(3): No cap for probe casing and cannot be locked.

Entered by: J. Roelke 10/3/2022
Checked by: A. Ruetten 10/14/2022

**Key:**

| |
|---|
| Shallow or 2'-15' |
| Medium or 25'-40' |
| Deep or 50'-70' |
| 85'-100' |

**Monthly System Inspection Log**
**Landfill Gas Extraction and Leachate Pump System**
**WDNR - Refuse Highway Landfill**
**Middleton, Wisconsin**

| | | |
|---|---|---|
| **TRC Operator Name: John Roelke** | | |
| **Date: 10/11/2022** | **Arrival Time: 8:23** | **Departure Time: 11:05** |

| **Site Conditions** | **Initial[1]** | **Final[2]** | **Equipment** | |
|---|---|---|---|---|
| Weather Conditions: | sunny | sunny | Gas/Instrument Type: | GEMS 2000 |
| Ground Condition: | dry | dry | Serial Number: | 11668 |
| Barometric Pressure: | 30.00 | 29.95 | Date Last Calibrated: | 10/11/2022 |
| Barometric Pressure Trend: | falling | falling | Method: | Standard field calibration |
| Temperature: | 54 | 65 | Pressure Instrument: | Dwyer Series 475 Manometer |

| **Landfill Gas Extraction System[3]** | | | | | | | |
|---|---|---|---|---|---|---|---|
| ***System*** | ***Location*** | ***Tag #*** | ***Equipment Description*** | ***Set Point*** | ***Typical Range*** | ***Initial Field Reading [1]*** | ***Final Field Reading [2]*** |
| Blower Motor | Remote | GHS-BLR-301 | Amperage | - | 3 - 4 amps | 3.33 | -- |
| | | | Speed | - | 1800 - 1900 rpm | 1477.92 | -- |
| | | | Frequency | - | 30 - 35 Hz | 24.8 | -- |
| | HMI | | Amperage | - | 3 -4 amps | 3.3 | -- |
| | HMI | | Speed | - | | 34 | -- |
| | HMI | | Hours | - | - | 6474 | -- |
| Blower Operating (YES). Note excessive noise or issues observed. | | | | | | | |
| Blower Inlet | HMI | PT-301 | Blower Inlet Vacuum | 7 in. w.c. | 7 in. w.c. | -7.0 | -7 |
| | HMI | TE-301 | Blower Inlet Temperature | - | 50 - 90 °F | 68 | -- |
| | Local | GHS-PI-301 | Blower Inlet Vacuum | 7 in. w.c. | 7 in. w.c. | -6.97 | -6.96 |
| | Local | GHS-TI-301 | Blower Inlet Temperature | - | 50 - 90 °F | 64 | 72 |
| | Local | Sample Port | Gas Composition - % Methane | - | | 11.8% | 18.2% |
| | | | Gas Composition - % CO2 | - | | 8.6% | 13.0% |
| | | | Gas Composition - % Oxygen | - | | 15.6% | 12.9% |
| | | | Gas Composition - % Balance | - | | 64.0% | 55.9% |
| Demister | Local | GHS-PDI-301 | Demister Differential Pressure | - | 1-2 in w.c | 4 | -- |
| | Local | | Slight Glass: Liquid Present | - | - | -- | -- |
| | HMI | LS-701 | Level Indication | - | - | -- | -- |
| Blower Outlet | HMI | PT-302 | Blower Outlet Flow Pressure | - | - | 0.1 | 0.1 |
| | HMI | TE-302 | Blower Outlet Temperature | - | 50 - 90 °F | 67 | 72 |
| | HMI | PDT-301 | Blower Outlet Flow Differential Pressure | - | 1-2 in w.c | 0.67 | 0.68 |
| | HMI | - | Blower Outlet Flow Rate | - | 180 - 190 scfm | 120 | 136 |
| | Local | GHS-PI-302 | Blower Outlet Flow Pressure | - | - | -6.96 | -- |
| | Local | GHS-TI-302 | Blower Outlet Temperature | - | 50 - 90 °F | 64 | 72 |
| | Local | Sample Port | Gas Composition - % Methane | - | | 11.8% | 18.2% |
| | | | Gas Composition - % CO2 | - | | 8.6% | 13.0% |
| | | | Gas Composition - % Oxygen | - | | 15.6% | 12.9% |
| | | | Gas Composition - % Balance | - | | 64.0% | 55.9% |
| Branch Headers | Local | North | North Branch Vacuum | - | 6 - 7 in w.c. | -6.41 | -6.16 |
| | Local | North | Valve Position | 6 turns open /6 | 6 turns open | 6 | 6 |
| | Local | North Sample Port | Gas Composition - % Methane | - | | 30.3% | 33.6% |
| | | | Gas Composition - % CO2 | - | | 18.3% | 20.1% |
| | | | Gas Composition - % Oxygen | - | | 6.9% | 5.1% |
| | | | Gas Composition - % Balance | - | | 44.5% | 41.2% |
| | Local | Central | Central Branch Vacuum | - | 6 - 7 in w.c. | -6.26 | -6 |
| | Local | Central | Valve Position | - | 6 turns open | 6 | 6 |
| | Local | Central Sample Port | Gas Composition - % Methane | - | | 11.3% | 12.5% |
| | | | Gas Composition - % CO2 | - | | 8.1% | 8.9% |
| | | | Gas Composition - % Oxygen | - | | 15.9% | 15.0% |
| | | | Gas Composition - % Balance | - | | 64.7% | 63.6% |
| | Local | South | South Branch Vacuum | - | 6 - 7 in w.c. | -6.36 | -6.17 |
| | Local | South | Valve Position | - | 6 turns open | 6 | 6 |
| | Local | South Sample Port | Gas Composition - % Methane | - | | 10.2% | 22.3% |
| | | | Gas Composition - % CO2 | - | | 8.0% | 16.3% |
| | | | Gas Composition - % Oxygen | - | | 16.2% | 11.5% |
| | | | Gas Composition - % Balance | - | | 65.6% | 49.9% |

| Air Compressor System[3,5,6] - AIR COMPRESSOR SYSTEM OFFLINE | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Operational Settings | Pressure Set Points | | | | | Condensate Set Points | | |
| | Tank Low (psi) | Tank High (psi) | Well Field (psi) | On (min.) | Off (min.) | Open (sec.) | Closed (min.) | Test Operation |
| | NOT OPERATING | | | | | | | (yes/no) |

| Air Dryer System[4] - AIR DRYER OFFLINE | | Electrical Status | | HMI Heater/Air Conditioner | |
|---|---|---|---|---|---|
| System Operational: | NO | 3-Phase Power Indicator: | 3 of 3 | Operational | |
| Condensate Drain Operational: | NO | GFI 1 Status: | GREEN | Temperature | |
| Alarm Indictor: | NO | GFI 2 Status: | GREEN | Filter Cleaned | |
| Condenser Cleaned[2]: | NO | **Leachate Tank/Loadout** | | | |
| Dew Point Indicator: N/A | | Liquid Level (inches): | 15.5 inches | Visual Check: | |
|  | Indicate which bars are green(G) or red (R) and note (F) if flashing. | ***Contact WDNR if level is above*** | 71 inches | · Evidence of Tank Overflow: | no |
| | | Leak Detection Test Completed: | NO | · Inspect concrete pad and storm sewer for damage or backup | |
| | | Overfill Float Functional[7] | YES | | |
| | | **Exhaust Stack** | | | |
| | | Drain Stack Sump (vol. removed) | NONE | Stack Condition[6]: | GOOD |

***1. Initial site conditions represents readings collected upon arrival to the site and initial field readings are collected prior to the landfill balancing.***

***2. Final site conditions represents readings collected upon departure from the site and final field readings are collected following the landfill balancing.***

***3. Check all air lines and gas extraction lines for leaks during each site visit. Drain inline air filters and replace as needed.***

***4. Air Dryer - Clean the condenser monthly using an air jet (max. 2 bar / 30 psig) inside out. Make sure not to damage the aluminum lamellae of the cooling package.***

***5. On a quarterly basis change the oil and check/clean the air filters and intercoolers for the air compressor.***

***6. Inspect mounting brackets and bolts for the air compressor and effluent stack for tightness.***

***7. Test overfill float operation on a monthly basis.***

Comments/Notes:
Air compressor and air dryer offline, leachate tank is @ 15.5"
NA - Not Applicable
NM - Not Measured

Data Entered By: J. Roelke 10/19/2022
Checked By: B. Wachholz 11/19/2022

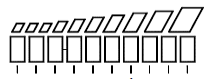
**Monthly System Inspection Log**
**Landfill Gas Extraction and Leachate Pump System**
**WDNR - Refuse Highway Landfill**
**Middleton, Wisconsin**

| | | |
|---|---|---|
| **TRC Operator Name: John Roelke** | | |
| **Date: 10/26/2022** | **Arrival Time: 9:14** | **Departure Time: 11:34** |

| **Site Conditions** | **Initial[1]** | **Final[2]** | **Equipment** | |
|---|---|---|---|---|
| Weather Conditions: | Cloudy | | Gas/Instrument Type: | GEMS 2000 |
| Ground Condition: | moist | | Serial Number: | 11668 |
| Barometric Pressure: | 30.35 | | Date Last Calibrated: | 10/26/2022 |
| Barometric Pressure Trend: | rising | | Method: | Standard field calibration |
| Temperature: | 38 | | Pressure Instrument: | GEMS 2000 |

| **Landfill Gas Extraction System[3]** | | | | | | | |
|---|---|---|---|---|---|---|---|
| ***System*** | ***Location*** | ***Tag #*** | ***Equipment Description*** | ***Set Point*** | ***Typical Range*** | ***Initial Field Reading [1]*** | ***Final Field Reading [2]*** |
| Blower Motor | Remote | GHS-BLR-301 | Amperage | - | 3 - 4 amps | 3.35 | -- |
| | | | Speed | - | 1800 - 1900 rpm | 1444.81 | -- |
| | | | Frequency | - | 30 - 35 Hz | 24.29 | -- |
| | HMI | | Amperage | - | 3 -4 amps | 3.3 | -- |
| | HMI | | Speed | - | | 33 | -- |
| | HMI | | Hours | - | - | 6855 | -- |
| Blower Operating (YES). Note excessive noise or issues observed. | | | | | | | |
| Blower Inlet | HMI | PT-301 | Blower Inlet Vacuum | 7 in. w.c. | 7 in. w.c. | -7.0 | -7 |
| | HMI | TE-301 | Blower Inlet Temperature | - | 50 - 90 °F | 55 | -- |
| | Local | GHS-PI-301 | Blower Inlet Vacuum | 7 in. w.c. | 7 in. w.c. | -6.8 | -6.9 |
| | Local | GHS-TI-301 | Blower Inlet Temperature | - | 50 - 90 °F | 50 | 54 |
| | Local | Sample Port | Gas Composition - % Methane | - | | 8.3% | 8.7% |
| | | | Gas Composition - % CO2 | - | | 9.3% | 8.8% |
| | | | Gas Composition - % Oxygen | - | | 14.6% | 14.7% |
| | | | Gas Composition - % Balance | - | | 67.8% | 67.8% |
| Demister | Local | GHS-PDI-301 | Demister Differential Pressure | - | 1-2 in w.c | 1 | -- |
| | Local | | Slight Glass: Liquid Present | - | - | none | -- |
| | HMI | LS-701 | Level Indication | - | - | -- | -- |
| Blower Outlet | HMI | PT-302 | Blower Outlet Flow Pressure | - | - | 0.1 | 0.1 |
| | HMI | TE-302 | Blower Outlet Temperature | - | 50 - 90 °F | 56 | 65 |
| | HMI | PDT-301 | Blower Outlet Flow Differential Pressure | - | 1-2 in w.c | 0.87 | 0.84 |
| | HMI | - | Blower Outlet Flow Rate | - | 180 - 190 scfm | 138 | 135 |
| | Local | GHS-PI-302 | Blower Outlet Flow Pressure | - | - | 0.13 | -- |
| | Local | GHS-TI-302 | Blower Outlet Temperature | - | 50 - 90 °F | 54 | 62 |
| | Local | Sample Port | Gas Composition - % Methane | - | | 8.2% | 8.8% |
| | | | Gas Composition - % CO2 | - | | 9.2% | 8.7% |
| | | | Gas Composition - % Oxygen | - | | 14.8% | 14.7% |
| | | | Gas Composition - % Balance | - | | 67.8% | 67.8% |
| Branch Headers | Local | North | North Branch Vacuum | - | 6 - 7 in w.c. | -5.90 | -6.30 |
| | Local | North | Valve Position | 6 turns open /6 | 6 turns open | 6 | 6 |
| | Local | North Sample Port | Gas Composition - % Methane | - | | 19.4% | 30.2% |
| | | | Gas Composition - % CO2 | - | | 17.9% | 19.3% |
| | | | Gas Composition - % Oxygen | - | | 6.9% | 4.4% |
| | | | Gas Composition - % Balance | - | | 55.8% | 46.1% |
| | Local | Central | Central Branch Vacuum | - | 6 - 7 in w.c. | -5.7 | -6.5 |
| | Local | Central | Valve Position | - | 6 turns open | 6 | 6 |
| | Local | Central Sample Port | Gas Composition - % Methane | - | | 5.8% | 5.9% |
| | | | Gas Composition - % CO2 | - | | 6.6% | 5.6% |
| | | | Gas Composition - % Oxygen | - | | 16.6% | 16.5% |
| | | | Gas Composition - % Balance | - | | 71.0% | 72.0% |
| | Local | South | South Branch Vacuum | - | 6 - 7 in w.c. | -5.80 | -6.40 |
| | Local | South | Valve Position | - | 6 turns open | 6 | 6 |
| | Local | South Sample Port | Gas Composition - % Methane | - | | 9.8% | 10.2% |
| | | | Gas Composition - % CO2 | - | | 11.5% | 11.2% |
| | | | Gas Composition - % Oxygen | - | | 13.7% | 13.5% |
| | | | Gas Composition - % Balance | - | | 65.0% | 65.1% |

| Air Compressor System[3,5,6] - AIR COMPRESSOR SYSTEM OFFLINE | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Operational Settings | Pressure Set Points | | | | | Condensate Set Points | | |
| | Tank Low (psi) | Tank High (psi) | Well Field (psi) | On (min.) | Off (min.) | Open (sec.) | Closed (min.) | Test Operation |
| | NOT OPERATING | | | | | | | (yes/no) |

| Air Dryer System[4] - AIR DRYER OFFLINE | | Electrical Status | | HMI Heater/Air Conditioner | |
|---|---|---|---|---|---|
| System Operational: | NO | 3-Phase Power Indicator: | 3 of 3 | Operational | |
| Condensate Drain Operational: | NO | GFI 1 Status: | GREEN | Temperature | |
| Alarm Indictor: | NO | GFI 2 Status: | GREEN | Filter Cleaned | |
| Condenser Cleaned[2]: | NO | **Leachate Tank/Loadout** | | | |
| Dew Point Indicator: N/A | | Liquid Level (inches): | 19.75 inches | Visual Check: | |
|  | Indicate which bars are green(G) or red (R) and note (F) if flashing. | ***Contact WDNR if level is above*** | 71 inches | · Evidence of Tank Overflow: | no |
| | | Leak Detection Test Completed: | NO | · Inspect concrete pad and storm sewer for damage or backup | |
| | | Overfill Float Functional[7] | YES | | |
| | | **Exhaust Stack** | | | |
| | | Drain Stack Sump (vol. removed) | NONE | Stack Condition[6]: | GOOD |

***1. Initial site conditions represents readings collected upon arrival to the site and initial field readings are collected prior to the landfill balancing.***

***2. Final site conditions represents readings collected upon departure from the site and final field readings are collected following the landfill balancing.***

***3. Check all air lines and gas extraction lines for leaks during each site visit. Drain inline air filters and replace as needed.***

***4. Air Dryer - Clean the condenser monthly using an air jet (max. 2 bar / 30 psig) inside out. Make sure not to damage the aluminum lamellae of the cooling package.***

***5. On a quarterly basis change the oil and check/clean the air filters and intercoolers for the air compressor.***

***6. Inspect mounting brackets and bolts for the air compressor and effluent stack for tightness.***

***7. Test overfill float operation on a monthly basis.***

Comments/Notes:
Air compressor and air dryer offline.
NA - Not Applicable
NM - Not Measured

Data Entered By: J. Roelke 11/21/2022
Checked By: T. Perkins 11/21/2022

# October 2022 Cap Inspection

# Cap Inspection

| Inspection Details | | Site Conditions | |
|---|---|---|---|
| **Inspector:** | John Roelke | **Weather Conditions:** | Sunny |
| **Date:** | 10/11/2022 & 10/20/2022 | **Ground Condition:** | Dry |
| **Time:** | 11:15 | **Temperature:** | 65 F |

Note: Photograph all issues encountered during inspection

Note: Keep vehicle traffic to gravel roadways, avoid driving on the landfill surface

**Is the landfill surface covered in snow (Y/N)?** No

**Inspect the landfill surface when not covered in snow. Describe the condition and any issues observed for each category below:**

**Cap integrity:** Cap integrity is acceptable, with no changes from previous condition.

Condition of drainage ways:

West Drainage Ditch - the north portion shows signs of vegetation die-off, see Photo 1. During September's inspection standing water was observed. This area was identified as having less positive slope than its surroundings and regraded several times during 2020-2021 grading work at the Site. Final survey showed positive slope.

East Drainage Ditch -. TRC has continues to monitor the rip rap along west embankment of the northern culvert and riprap appears to be eroding, see photo 2. Following the September mowing event, soil was exposed at north portion of the drainage ditch, see Photo 3. Natural flow of the surface water is draining into the sediment pond.

TRC reseeded select areas in both drainage ditches on October 20, 2022 to re-establish vegetation. The areas will be monitored for regrowth in Spring of 2023.

Beyond the above noted issues, drainage ways are acceptable, with minimal to no changes from previous conditions.

**Extent of vegetation cover:** Vegetation cover is acceptable over the majority of the Site. Some areas that were seeded post-construction in 2021 are not showing signs of growth, as shown in photos 4-6. Re-seeding was conducted by TRC on October 20, 2022 in select areas to re-establish vegetation. The areas will be monitored for regrowth in Spring of 2023.

Burrowing was observed at gas extraction wells GW-2, GW-4, and GW-12, see photos 7-9. Larger holes were filled in with top soi during the October 20, 2022 reseeding event.

**Significant erosion:** No evidence of significant erosion at the Site observed.

**Repeated erosion:** No evidence repeated erosion at the Site observed.

**Vegetation die-off:**

*West Drainage Ditch* - The north portion shows signs of vegetation die off, see Photo 1. No standing water in this area during the inspection but vegetation regrowth was sparing indicating water may be ponding at times.

*East Drainage Ditch* - Following the mowing event light erosion was observed along a north portion of the drainage ditch, see Photo 3. TRC will continue will reseed in the fall.

TRC reseeded select areas in both drainage ditches on October 20, 2022 to re-establish vegetation. The areas will be monitored for regrowth in Spring of 2023.

**Maintain surface water conveyances and the sedimentation basin by completing the following:**

**Inspect drainage ditches for erosion, blockages, and vegetation, describe and note any issues:**

*East Drainage Ditch* - Some light erosion to the north end of the north-to-south portion observed, see Photo 3.

TRC reseeded the area on October 20, 2022 to re-establish vegetation. The areas will be monitored for regrowth in Spring of 2023.

**Inspect sedimentation basin banks and outfalls for erosion, describe and note any issues:** No erosion or other issues at sedimentation basin banks and outfalls.

**Measure the distance between the invert of the sedimentation basin outlet and the top of the sediments accumulated in the basin (June Only)**: NM

Data Entered By: J. Roelke 10/11/2022

Checked By: A. Stehn 11/18/2022

# Photographic Log

| Client Name: | Site Location: | Project No.: |
|---|---|---|
| Wisconsin Department of Natural Resources (WDNR) | Refuse Hideaway Landfill Middleton, WI | TRC # 457573 |

| Photo No. | Date |
|---|---|
| 1 | 10/11/2022 |

**Description**

Western Drainage Ditch:
North portion shows signs vegetation die off at the time of the inspection. During September's inspection standing water was observed. Surface water is flowing naturally towards the southernly riprap.

TRC reseeded the area on October 20, 2022.

| Photo No. | Date |
|---|---|
| 2 | 10/11/2022 |

**Description**

Eastern Drainage Ditch:
Riprap has begun to deteriorate at the west side of the western culvert. Drainage is flowing and is not being obstructed.

# Photographic Log

| Client Name: | Site Location: | Project No.: |
|---|---|---|
| Wisconsin Department of Natural Resources (WDNR) | Refuse Hideaway Landfill Middleton, WI | TRC # 457573 |

| Photo No. | Date |
|---|---|
| 3 | 10/11/2022 |

**Description**

Eastern Drainage Ditch:
After mowing operations bare soil was observed at the north portion of the drainage ditch. Drainage shows natural flowage of surface water into the sediment pond.

TRC reseeded the area on October 20, 2022.

| Photo No. | Date |
|---|---|
| 4 | 10/11/2022 |

**Description**

Northwestern Landfill Extents
Select areas that were seeded following the 2021 construction event contained bare soil.

TRC reseeded the areas on October 20, 2022.

# Photographic Log

| Client Name: | Site Location: | Project No.: |
|---|---|---|
| Wisconsin Department of Natural Resources (WDNR) | Refuse Hideaway Landfill Middleton, WI | TRC # 457573 |

| Photo No. | Date |
|---|---|
| 5 | 10/11/2022 |

**Description**

Northern Landfill Extents

Select areas that were seeded following the 2021 construction event contained bare soil.

TRC reseeded the areas on October 20, 2022.

| Photo No. | Date |
|---|---|
| 6 | 10/11/2022 |

**Description**

Central Landfill Extents

Select areas that were seeded following the 2021 construction event contained bare soil.

TRC reseeded the areas on October 20, 2022.

# Photographic Log

| Client Name: | Site Location: | Project No.: |
|---|---|---|
| Wisconsin Department of Natural Resources (WDNR) | Refuse Hideaway Landfill Middleton, WI | TRC # 457573 |

| Photo No. | Date |
|---|---|
| 7 | 10/11/2022 |

**Description**

Southern Landfill Extents: Signs of burrowing at GW-2. No damage to the header pipe.

Holes were filled in during the October 20, 2022 reseeding event.

| Photo No. | Date |
|---|---|
| 8 | 10/11/2022 |

**Description**

Southern Landfill Extents: Signs of burrowing at GW-4. No damage to the header pipe.

Holes were filled in during the October 20, 2022 reseeding event.

# Photographic Log

| Client Name: | Site Location: | Project No.: |
|---|---|---|
| Wisconsin Department of Natural Resources (WDNR) | Refuse Hideaway Landfill Middleton, WI | TRC # 457573 |

| Photo No. | Date |
|---|---|
| 9 | 10/11/2022 |

**Description**

Northern Landfill Extents:
Signs of burrowing at GW-12. No damage to the header pipe.

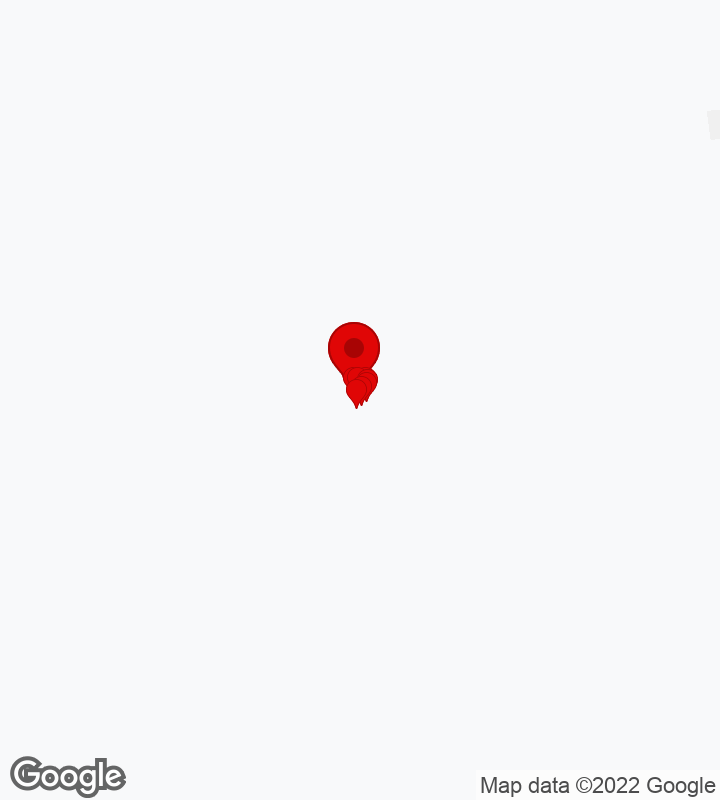
Holes were filled in during the October 20, 2022 reseeding event.

# Gas Vent GV-4 Repair Field Notes

# RHL Repairs - Daily Log

## Refuse Hideaway, October 28, 2022

**11/21/2022, 3:48:31 PM UTC**




**CREATED**

10/28/2022, 2:28:33 PM UTC
by Andrew Stehn

**UPDATED**

11/21/2022, 3:48:31 PM UTC
by Andrew Stehn

**STATUS**

Complete

**LOCATION**

43.097461, -89.579177

**PROJECT**

No Project

**ASSIGNED TO**

No Assignment

| | |
|---|---|
| **Work Date** | October 28, 2022 |
| **Work Start Time** | 09:31 |
| **Project Name** | RHL Source Control Systems Repair and Upgrades |
| **TRC Project Manager Name** | Andrew Stehn |
| **Client Contact Name** | Cynthia Koepke - WDNR |
| **TRC Field Team Lead Name** | Andrew Stehn |
| **General Weather Conditions** | Sunny and 40s |
| **Daily Work Objective** | Repair air line to GV-4 |
| **On-Site Personnel (Name - Company)** | Andrew Stehn |
| **On-Site Equipment (Name - Company)** | |

## Weather (1 Item)

### Weather - 1. 09:32

| | |
|---|---|
| **Date** | October 28, 2022 |
| **Time** | 09:32 |
| **Tap to Add Weather Data** | |
| **Weather Summary** | CONDITIONS: Clear, TEMPERATURE: 42.71 F, PRESSURE: 1020 hPa, RELATIVE HUMIDITY: 92 %, WIND SPEED: 1.99 MPH, WIND DIRECTION: 140 degrees |

## Health and Safety Tailgate

| | |
|---|---|
| **Health and safety tailgate conducted?** | Yes |
| **Tail Board Leader** | Andrew astehn |
| **Attendees** | Kyle Maseruch, Connor Hunter. JR |
| **Topics of H&S** | Physical Hazards - Slip/Trips and Falls, Physical Hazards - Underground or Overhead Utilities, Physical Hazards - Fire/Explosion |

## Work Summary

## Work Summary Entry (4 Items)

### Work Summary Entry - 1. AS, 08:00

| | |
|---|---|
| **Time of Summary Entry** | 08:00 |

| | |
|---|---|
| **Description of Activities** | Chris received a call from Kyle with JR that they were on-site to complete the air line repair at GV-4.<br><br>Andy Stehn mob to site to let in JR. Andy called Timm<br>with JR and Timm confirmed that the additional cost to replace the t-fitting would be between $400 and $500.<br><br>Andy contacted Cindy with WDNR to provide an update on work being completed and that the cost to replace the t-fitting, in addition to the supply line to GV-4, would be between $400 and $500. Andy provided Cindy with an update on the electrical system and the compressor operation. TRC met with internal Electrical Engineers to discuss the issues at the site.<br><br>Andy to follow up with Bryan Dahm about the air line repair.<br><br>Andy called Bryan Dahm and left him a voicemail confirming the damaged air line was being repaired and that the additional cost to replaced the t-fitting would be between $400 and $500. |
| **Initials** | AS |

## Work Summary Entry - 2. AS, 08:38

| | |
|---|---|
| **Time of Summary Entry** | 08:38 |
| **Description of Activities** | Andy shutdown the blower and JR are working on repairing the airline. |
| **Initials** | AS |

## Work Summary Entry - 3. AS, 10:25

| | |
|---|---|
| **Time of Summary Entry** | 10:25 |
| **Description of Activities** | JR has installed two butt fusions. One to the existing supply line running east to west and one to the t fitting.<br><br>Electro fuse joints were used to attached the supply line at the 90 degree bend and the two connections on the 1 inch service line. |
| **Initials** | AS |

## Work Summary Entry - 4. AMS , 11:00

| | |
|---|---|
| **Time of Summary Entry** | 11:00 |
| **Description of Activities** | JR completed the air line repair and backfilling. See photos. TRC placed grass seed on disturbed area.<br><br>JR offsite 1100<br><br>Andy called Cindy and proved update to her that line was repaired.<br><br>Andy restarted blower system and vac out to well field is 6 to 7 in wc. Flow around 148cfm |
| **Initials** | AMS |

# Site Visitors

# Construction Activity Photos

## Photo Info (4 Items)

### Photo Info - 1. 09:29, JR repairing the air line at GV-4

**Photos**

| | |
|---|---|
| **Photo Date** | October 28, 2022 |
| **Photo Time** | 09:29 |
| **View Direction** | |
| **Description** | JR repairing the air line at GV-4 |
| **Photographers Name** | Andrew astehn |

### Photo Info - 2. 10:21, Supply line repairs complete.

**Photos**

| | |
|---|---|
| **Photo Date** | October 28, 2022 |
| **Photo Time** | 10:21 |
| **View Direction** | |
| **Description** | Supply line repairs complete. |
| **Photographers Name** | Andrew astehn |

**Photo Info - 3. 10:25, Electro fuse wells used for connecting the the 90 degree on the supply line and the two connections for the 1 inch line. See photo**

**Photos**

| | |
|---|---|
| **Photo Date** | October 28, 2022 |
| **Photo Time** | 10:25 |
| **View Direction** | |
| **Description** | Electro fuse wells used for connecting the the 90 degree on the supply line and the two connections for the 1 inch line. See photo |
| **Photographers Name** | Andrew Stehn |

## Photo Info - 4. 11:07, Air line repairs and backfilled. TRC placed grass seeed down after backfilling was complete.

**Photos**

| | |
|---|---|
| **Photo Date** | October 28, 2022 |
| **Photo Time** | 11:07 |
| **View Direction** | |
| **Description** | Air line repairs and backfilled. TRC placed grass seeed down after backfilling was complete. |
| **Photographers Name** | Andrew astehn |

## End of Day Notes

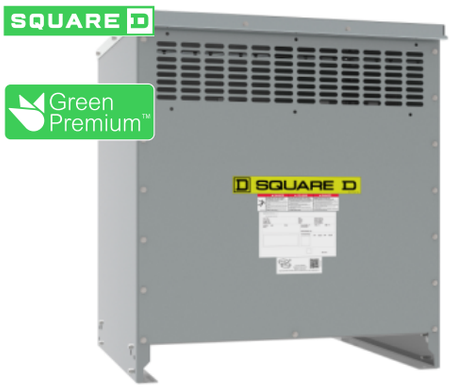
| | |
|---|---|
| **Summary of Daily Activities** | Repaired airline at GV-4 |
| **Next Day's Scope of Work** | |

| | |
|---|---|
| **Work End Date** | October 28, 2022 |
| **Work End Time** | 11:30 |
| **TRC Field Team Lead Signature** |  Signed 10/28/2022, 9:13:15 PM UTC |

# Square D Transformer Product Data Sheet

# Product data sheet

Specifications




## Low voltage transformer, DOE 2016, dry type, 3 phase, 75kVA, 480V pri, 208Y/120 sec, Al, 150C rise, Type 2

EXN75T3H

**Product availability : Stock - Normally stocked in distribution facility**

**Price* : 5,456.00 USD**

## Main

| | |
|---|---|
| **Range of Product** | Square D |
| **Product or Component Type** | DOE 2016 energy efficient transformer |
| **Device short name** | DOE 2016 |
| **Transformer type** | Energy efficient |
| **Device Application** | Low voltage electrical distribution |

## Complementary

| | |
|---|---|
| **Box number** | 20M |
| **Phase** | 3 phase |
| **Rated operational power in VA** | 75 kVA |
| **Network Frequency** | 60 Hz |
| **Type of cooling** | Natural convection |
| **Primary Voltage** | 480 V delta |
| **Number of tap-offs** | 2 2.5 % FCAN<br>4 2.5 % FCBN |
| **Primary operational current** | 90.21 A 208.18 A 75 kVA |
| **Secondary voltage** | 208Y/120 V |
| **Coil Material** | Aluminium |
| **Basic IMP level (BIL)** | 10 kV |
| **Temperature Rise** | 150 °C<br>220 °C insulated |
| **DOE Efficiency** | 98.63 % at 35 % load factor , 167 °F (75.0 °C) |
| **Sound Level** | 3 dB NEMA ST-20<br>47 dB |
| **%IZ** | 4.90 % |
| **%IX** | 3.97 % |
| **X/R Ratio** | 1.54 |
| **Inrush current** | 985 A |
| **Let Through Current** | 3.71 kA |
| **Transformer Losses** | 142 no load (core loss) |

* Price is “List Price” and may be subject to a trade discount – check with your local distributor or retailer for actual price.

| | |
|---|---|
| | 2226 load loss (coil loss) |
| **Transformer BTU/HR** | 696 16.6 %<br>959 25 %<br>2383 50 %<br>4757 75 %<br>8080 100 % |
| **Height** | 33.50 in (851 mm) |
| **Depth** | 27.44 in (697 mm) |
| **Width** | 30.08 in (764 mm) |
| **Net Weight** | 515.00 lb(US) (233.60 kg) |
| **Mounting support** | Floor<br>Floor, with 7400FMB<br>Ceiling, with 7400CMB18M19M20M<br>Wall, with 7400WMB18M19M20M |
| **Degree of protection** | UL type 2<br>UL type 3R, with 7400WS18M19M20M |
| **Electrical connection** | 2 Hole Nema Pad primary 0.44 in (11.1 mm)<br>2 Hole Nema Pad secondary 0.44 in (11.1 mm)<br>4 Hole Nema Pad sec - XO 0.44 in (11.1 mm) |
| **Number of mounting holes** | 0.51 in (13 mm) |

## Environment

| | |
|---|---|
| **Ambient air temperature for operation** | 104 °F (40 °C) |
| **Average ambient air temperature for operation** | 30 °C |
| **Standards** | UL 1561<br>CSA C22.2 No 47<br>NEMA ST-20 |

## Ordering and shipping details

| | |
|---|---|
| **Category** | 16256-3PH EXN/2016 15-150KVA LVGP XFMR |
| **Discount Schedule** | PE2X |
| **GTIN** | 785901272687 |
| **Returnability** | Yes |
| **Country of origin** | MX |

## Packing Units

| | |
|---|---|
| **Unit Type of Package 1** | PCE |
| **Package 1 Length** | 32.00 in (81.28 cm) |
| **Number of Units in Package 1** | 1 |
| **Package 1 Width** | 35.00 in (88.9 cm) |
| **Package 1 Height** | 38.50 in (97.79 cm) |
| **Package 1 Weight** | 544.98 lb(US) (247.2 kg) |

## Offer Sustainability

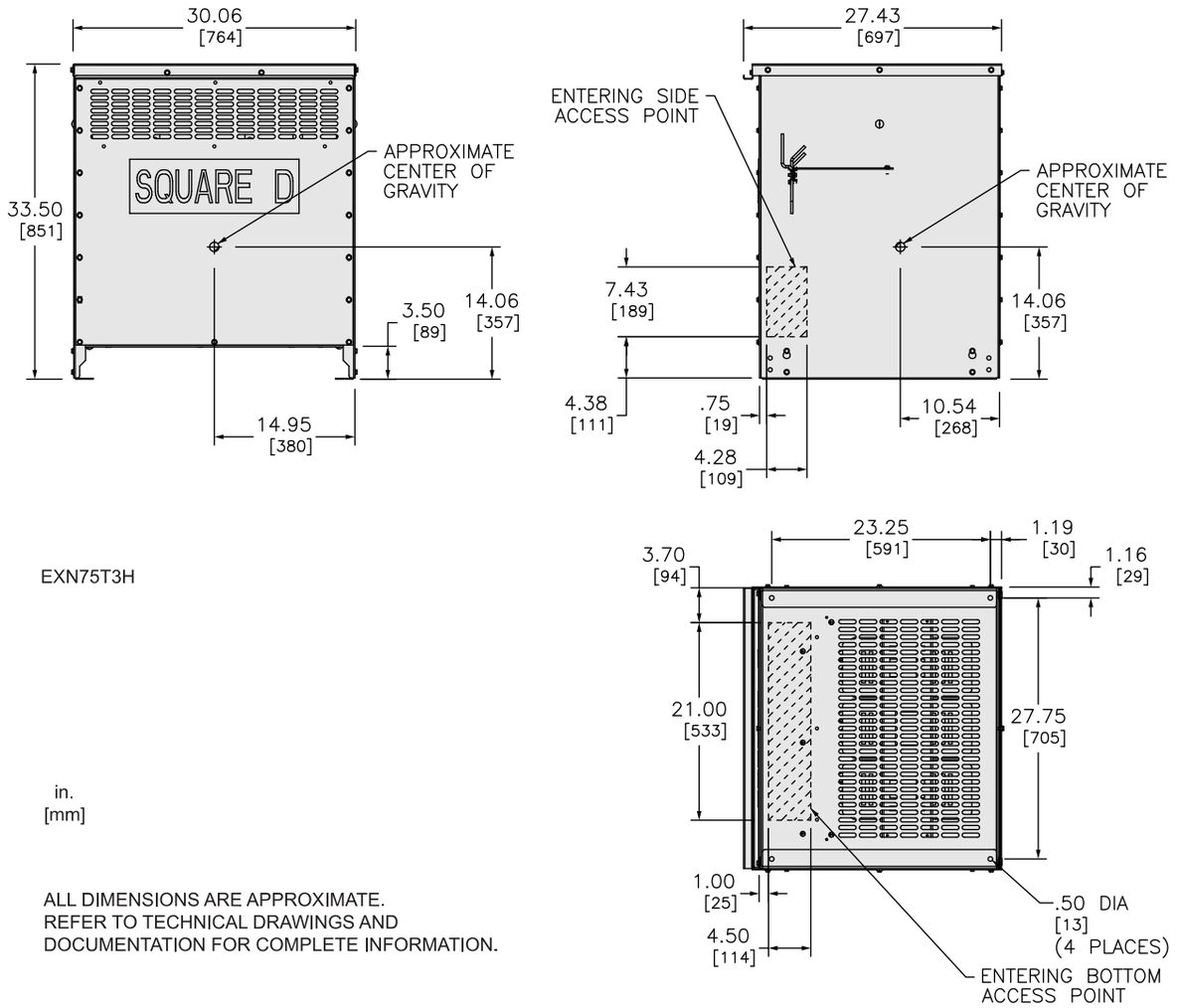
| | |
|---|---|
| **Sustainable offer status** | Green Premium product |
| **California proposition 65** | WARNING: This product can expose you to chemicals including: Phenyl Glycidyl Ether, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov |
| **REACh Regulation** | REACh Declaration |
| **REACh free of SVHC** | Yes |
| **EU RoHS Directive** | Compliant<br>EU RoHS Declaration |

| | |
|---|---|
| **Toxic heavy metal free** | Yes |
| **Mercury free** | Yes |
| **RoHS exemption information** | Yes |
| **China RoHS Regulation** | China RoHS declaration<br>Pro-active China RoHS declaration (out of China RoHS legal scope) |
| **Environmental Disclosure** | Product Environmental Profile |
| **PVC free** | Yes |
| **Halogen content performance** | Halogen free plastic parts product |

# Product data sheet EXN75T3H

Technical Illustration

## Dimensions




EXN75T3H

in.
[mm]

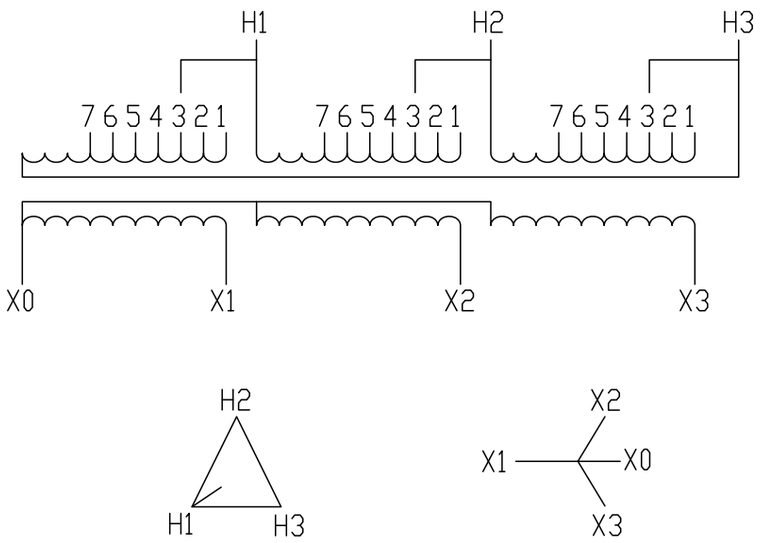
ALL DIMENSIONS ARE APPROXIMATE.
REFER TO TECHNICAL DRAWINGS AND
DOCUMENTATION FOR COMPLETE INFORMATION.

## Wiring Diagram

| IN EACH PHASE CONNECT TO TAPS | |
|---|---|
| PRIMARY VOLTS | 2–2.5% FCAN<br>4–2.5% FCBN |
| 504 | 1 |
| 492 | 2 |
| 480 | 3 |
| 468 | 4 |
| 456 | 5 |
| 444 | 6 |
| 432 | 7 |

NOTE: ACTUAL VOLTAGES & NAMEPLATE VALUES MAY NOT MATCH VOLTAGE IN TABLE

EXN75T3H










REFER TO TECHNICAL DRAWINGS AND DOCUMENTATION FOR COMPLETE INFORMATION.