

Aboveground Storage Tanks at Gasoline Dispensing Facilities

May 8, 2024



Topics

What is an Aboveground Storage Tank at Gasoline Dispensing Facility?

What AST at a GDF requires an Air Permit?

Vapor Recovery System

Enhanced Vapor Recovery

Inspection



What is an AST at a GDF?

As per N.J.A.C. 7:27-16.1

Aboveground Storage Tank (AST) means any storage tank that is not an underground storage tank.

Gasoline Dispensing Facility (GDF) means a stationary facility that dispenses gasoline into the fuel tank of a motor vehicle.



What AST at a GDF require an Air Permit?

As per N.J.A.C. 7:27- 8.2(c)9

Storage tanks for Gasoline 2,000 gallons or greater



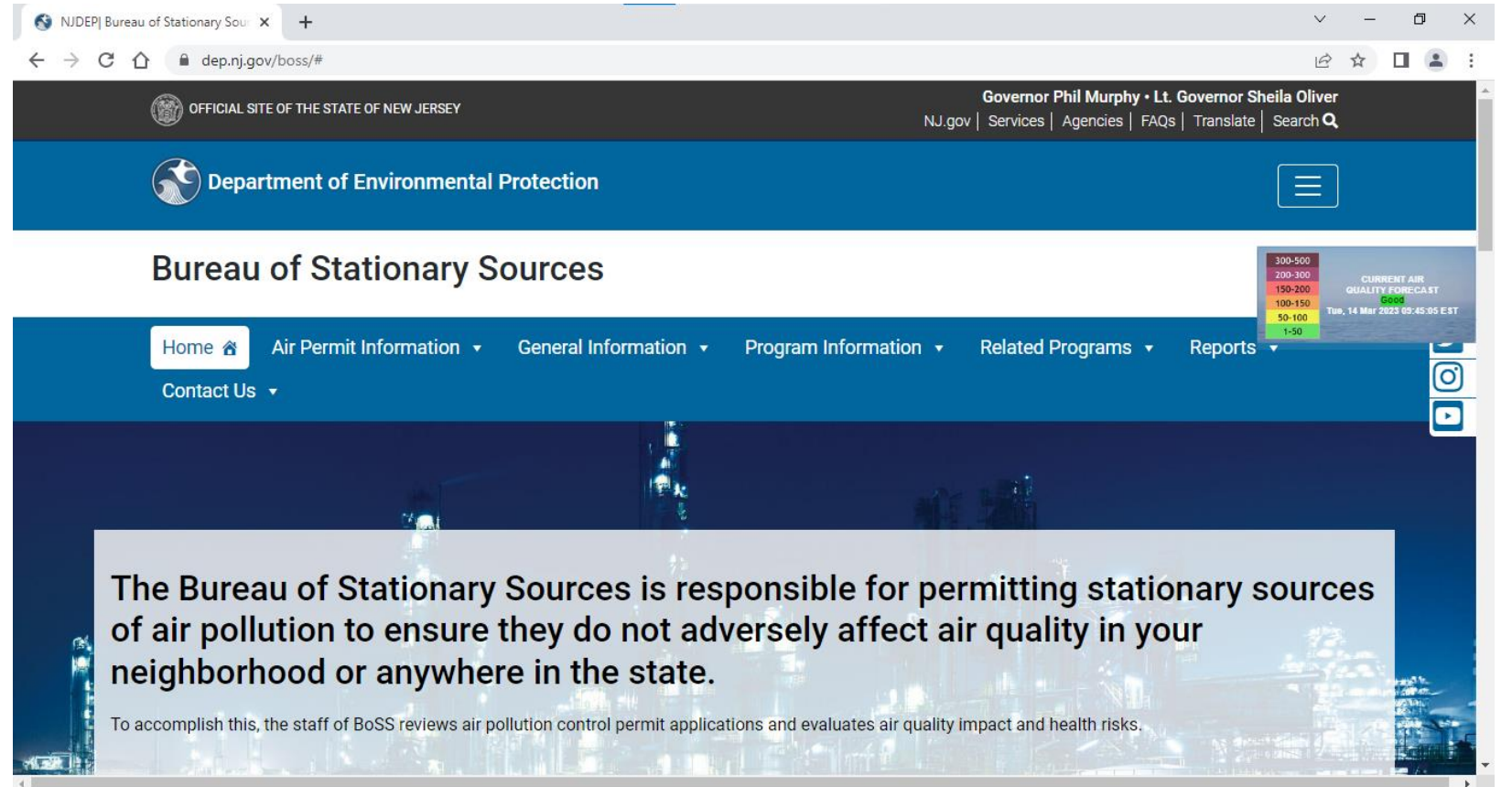
What AST at a GDF require an Air Permit?

For help with Air Permits:

<https://dep.nj.gov/boss/#>

(609) 633-2829

aqpppls@dep.nj.gov



The screenshot shows the official website of the Bureau of Stationary Sources (BoSS) under the Department of Environmental Protection (NJDEP). The browser address bar shows the URL dep.nj.gov/boss/#. The page header includes the text "OFFICIAL SITE OF THE STATE OF NEW JERSEY" and "Department of Environmental Protection". The main heading is "Bureau of Stationary Sources". A navigation menu contains links for "Home", "Air Permit Information", "General Information", "Program Information", "Related Programs", "Reports", and "Contact Us". A "CURRENT AIR QUALITY FORECAST" widget is visible in the top right corner, showing a "Good" forecast for Tuesday, March 14, 2023. The main content area features a large image of an industrial facility at night with a text overlay: "The Bureau of Stationary Sources is responsible for permitting stationary sources of air pollution to ensure they do not adversely affect air quality in your neighborhood or anywhere in the state. To accomplish this, the staff of BoSS reviews air pollution control permit applications and evaluates air quality impact and health risks."



Vapor Recovery System

WHY VRS?

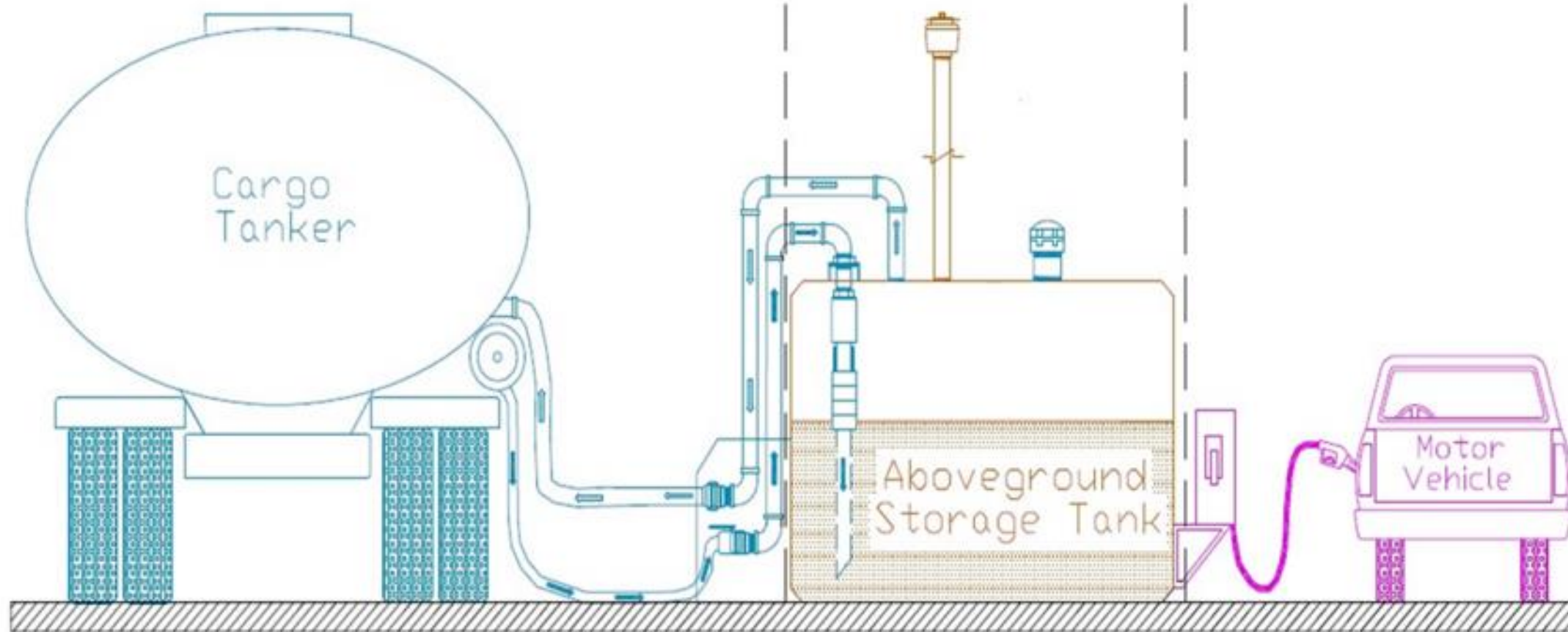
VAPOR RECOVERY = LESS EMISSIONS



Phase I

Standing Loss

Phase II



CALIFORNIA
AIR RESOURCES BOARD

Vapor Recovery System (VRS)

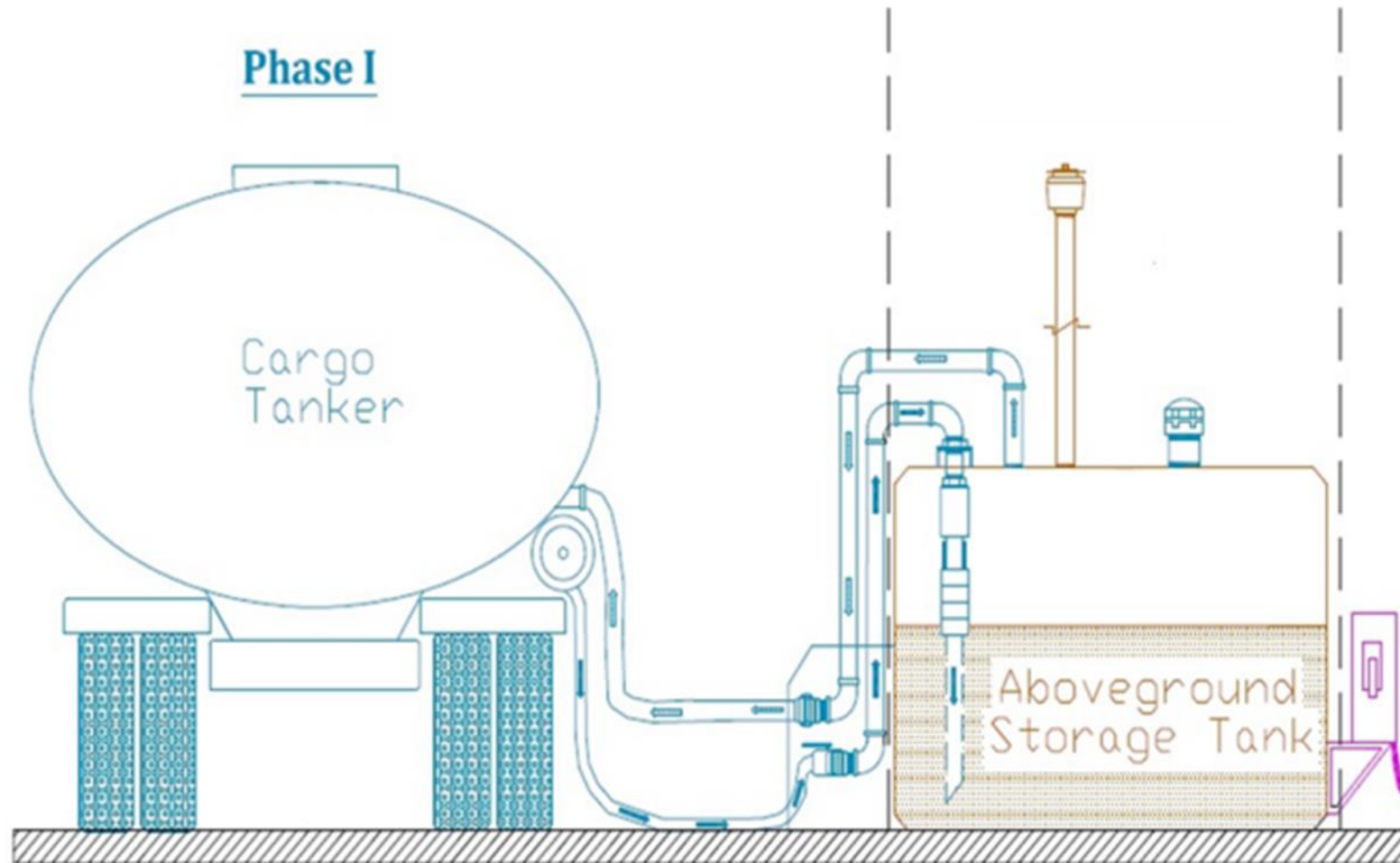
Phase I (Stage I) system – Transfer to Tank

- means a system that controls vapors during the transfer of gasoline from a delivery vessel to a gasoline dispensing facility vessel. This system is also known as a Stage I vapor recovery system or a Stage I vapor control system.
- N.J.A.C. 7:27-16.1

Phase II (Stage II) system – Dispensing to Vehicle

- means a system that controls vapors during the transfer of gasoline from a gasoline dispensing facility vessel to a motor vehicle. This system is also known as a Stage II vapor recovery system or a Stage II vapor control system.
- N.J.A.C. 7:27-16.1

Phase I VRS Transfer to Tank





Phase IVRS

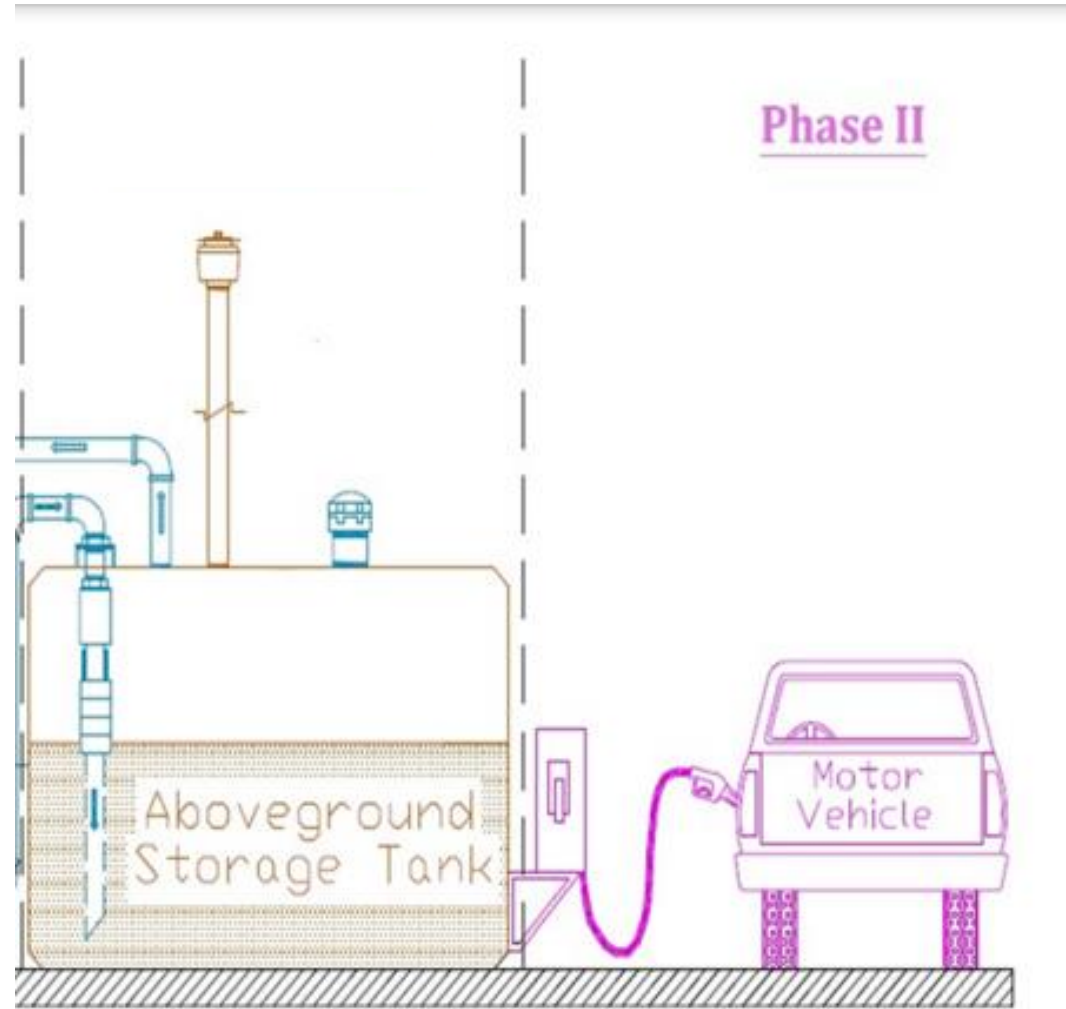
Transfer to Tank

NEW Dual – Point Common for AST

Two connection points:
Gasoline = fill
Vapor = recovery

Remote Dual – Point

Phase II VRS Transfer to Vehicle



What is ORVR and ORVR compatibility?

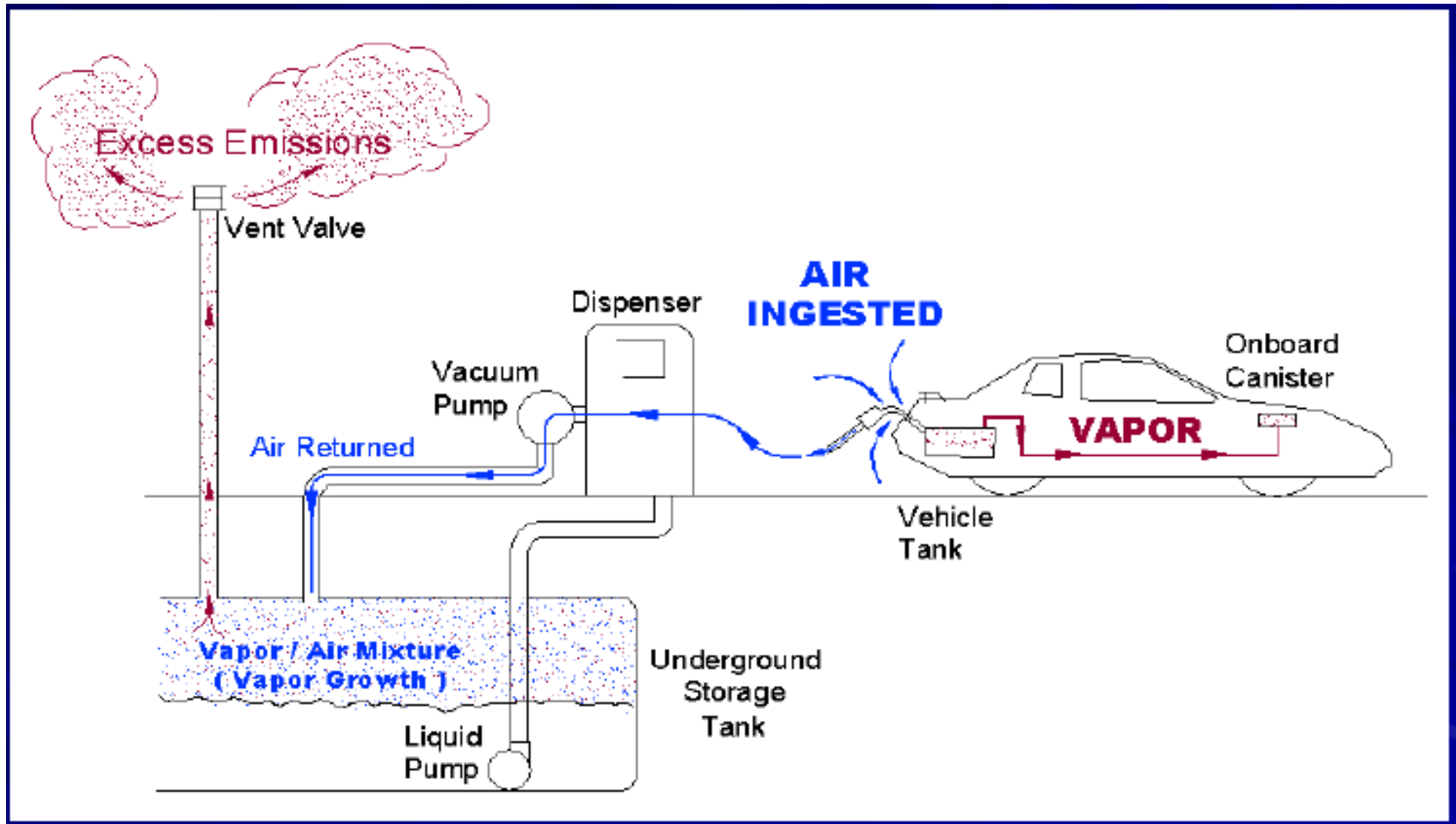
Onboard refueling vapor recovery system ORVR system or ORVR

means a vehicle emission control system that captures vapors from the vehicle gasoline tank during refueling.

ORVR-compatible Phase II vapor recovery system

means a Phase II vapor recovery system that is one of the following:

1. A vapor balance system;
2. A vapor recovery system with tank pressure management emission control equipment installed on the atmospheric vent of the system and operated in conjunction with the Phase I and Phase II vapor recovery systems.
3. A vacuum assist system that has ORVR-compatible nozzle; or
4. A vapor recovery system used exclusively for the refueling of marine vehicles or aircraft.



OLD VAC ASSIST NOT ALLOWED
Bad for Vapor Control

NEW **Enhanced Vapor Recovery (EVR)**

CARB – certified Phase I & II

NEW Enhanced Vapor Recovery (EVR) 2017 Rule Amendments

Phase I

Testing Required

Equipment Updates Required

Phase II

Decommissioning for some

Testing Required

Equipment Updates Required

Phase I Testing

Annual Testing

Static Pressure Test

Pressure Vacuum Valve Test

Torque Test; if rotatable adapter are installed

Phase I EVR

CARB - Certified Equipment

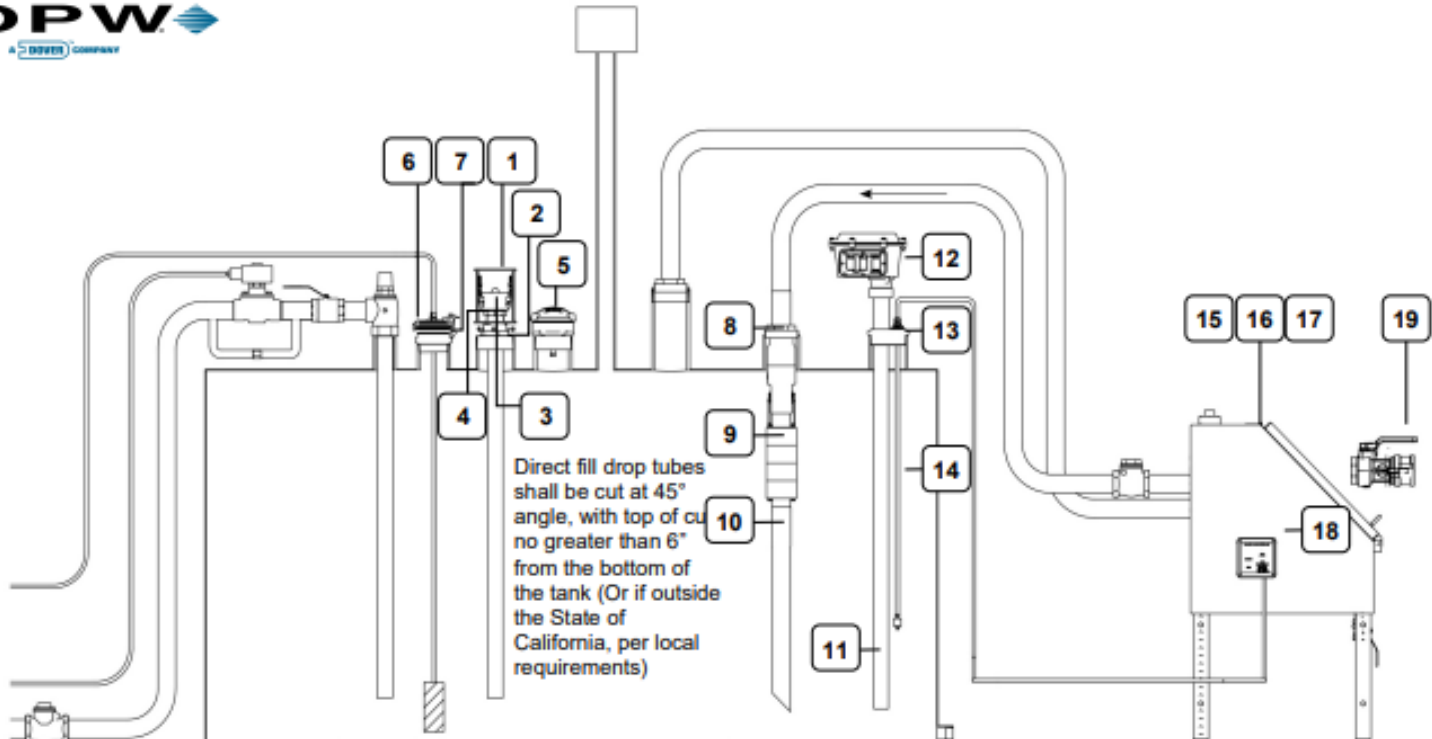
CARB-certified Phase I EVR mix and match system (parts from any EVR executive order) within 7 years (on or before December 23, 2024) with maintenance including but not limited to:

- o CARB EVR PV valve
- o Rotatable adaptors at dual point loading facilities (existing coaxial exempt)
- o Dual point loading at new stations
- o Drop tube with overflow protection
- o Fuel Blend Compatibility

Go to the CARB website for equipment lists in the EVR executive orders:

<https://ww2.arb.ca.gov/our-work/programs/vapor-recovery/vapor-recovery-executive-orders>

Figure 2M
Typical Configuration of OPW Phase I EVR System for AST with Remote Fill and Remote Dispenser



1	204247 Fill Prevention Cage	8	53 Series Bushing **	15	1611AN / 1612AN Series Kamvalok® Adaptor*
2	53-00XX Series Double Tapped Bushing	9	61fSTOP-XXXXT Series Overfill Prevention Valve	16	1611AV or 61VSA Series Vapor Recovery Adaptor*
3	634B-0150 or 634B-0090 Series Dust Cap	10	61FT Series Drop Tube	17	1711T or 1711LPC Series Vapor Recovery Cap*
4	633AST-0XXX Adaptor	11	61T Series Drop Tube	18	144TA/444TA Series Tank Alarm (optional)
5	301 Series Emergency Vent	12	200TG Series Tank Gauge (optional)	19	1711D-YYYY Series Kamvalok® Coupler
6	62M Monitoring Cap	13	TGTA-0400 4" Gauge/Alarm Combo Fitting (optional)		
7	FSA-400 Face Seal Adaptor	14	44TA-LLFS Liquid Level Float Switch (optional)		

* OPW 53-00XX bushing is required for remote fill configurations and dedicated gauge ports

Phase I EVR CARB - Certified Equipment

- Go to the CARB website for equipment lists in the EVR executive orders:
- <https://ww2.arb.ca.gov/our-work/programs/vapor-recovery/vapor-recovery-executive-orders>



Phase II EVR

- Testing
- OLD Phase II compatibility / Decommissioning
- Vapor Recovery Equipment Updates

Phase II Testing

Every 3 years test if still have Old Stage II Vapor Balance or Vac Assist (ORVR Compliant)

- Dynamic Backpressure
- Air/Liquid Ratio (vac. assist only)

OLD Stage II Compatibility / Decommissioning

- Remove requirements to install Stage II gasoline refueling vapor recovery systems at new gasoline dispensing facilities;
- Require decommissioning of existing Stage II vapor recovery systems within 3 years with the option to keep Stage II beyond the 3 years if the system is ORVR compatible and the system is maintained;
- Decommission in accordance with “PEI RP300-09 Recommended Practices for Installation and Testing of Vapor-Recovery Systems at Vehicle-Fueling Sites” with the following additions:
 - Underground piping removed at a later date when it becomes exposed for another reason, or if the system fails a pressure test due to the underground piping;
 - Certified contractor required;
 - 14 days advance notification to DEP; and
 - Work on business days between 8:00 A.M. and 5:00 P.M

Post OLD Stage II Decommissioning

- Dynamic Backpressure and A/L volume ratio testing no longer required after decommissioning;
- Annual Static Pressure Test and PV Valve Test (New Phase I)
- Annual Torque Test for sites with rotatable adapters (New Phase 1) and Tie-Tank test during decommissioning;

NEW Phase II Vapor Recovery Equipment Updates



- CARB-certified dripless/enhanced conventional (ECO) nozzles and low permeation hoses:
 - new facilities
 - when decommissioning or
 - replacing equipment after decommissioning

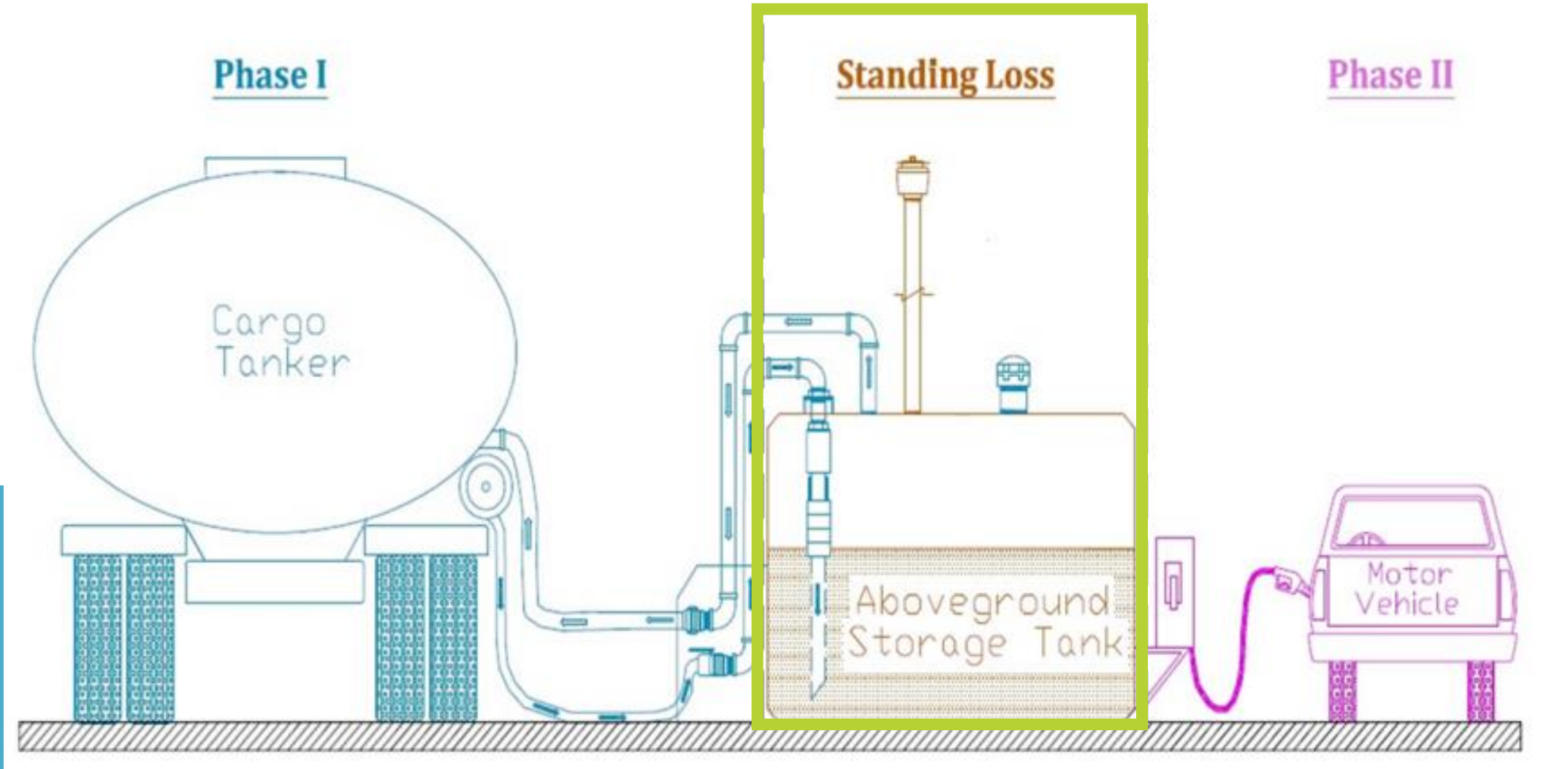
Stop at the Click



Overfilling and Spillage or “Stop at the Click”:

- During the transfer of gasoline into any gasoline-laden vehicular fuel tank, any person refueling a vehicle prevents overfilling and spillage and does not allow the transfer of gasoline to continue after the nozzle automatic shut-off point;

Standing Loss Control (SLC)



Standing Loss Control (SLC)

CARB EVR requirement for SLC :

- Controls to reduce storage tank breathing losses contained within Vapor Recovery
- SLCs are included in CARB's Phase I EVR Executive Orders (EO), and therefore, they do apply in New Jersey.



Standing Loss Control (SLC)

CARB EVR requirement for SLC :

Existing AST

1. Apply a CARB certified reflective coating and install a CARB EVR-certified P/V valve, or
2. Already have a CARB certified make and model AST, install a CARB EVR-certified P/V valve.



Standing Loss Control (SLC)

CARB EVR requirement for SLC :

- Question about painting for existing ASTs:
 - Follow manufacturers maintenance instructions.
 - Check the CARB FAQ

NJAC 7:27-16.2(b)1i requires:

The external surface of the tank is painted and maintained white...



Need more information...

CARB FAQ

[Frequently Asked Questions: Vapor Recovery Requirements For Gasoline Dispensing Facilities Equipped with Aboveground Storage Tanks | California Air Resources Board](#)

Exceptions for Phase I

Check NJDEP
FAQ for details

Throughput

Pre-EVR CARB certified parts

Aircraft and Marine

Coaxial

Inspection

Air Permit

AST Equipment

Common Issues



Most Common AST GENERAL PERMIT GP-004B

DO YOU HAVE A CURRENT PERMIT?

READY YOUR PERMIT!

State of New Jersey
Department of Environmental
Protection Air Quality Permitting
General Permit (GP-004B)
for
Fuel Dispensing Facility
Equipped with a Phase I
Vapor Recovery Control System

This General Permit allows for the construction, installation, reconstruction, modification and operation of the following fuel dispensing facilities:

- **FD-4B-1:** Marina gasoline storage tank(s) equipped with a Phase I vapor recovery control system used exclusively for refueling marine vehicles;
- **FD-4B-2:** Airport gasoline storage tank(s) equipped with a Phase I vapor recovery control system used exclusively for refueling of aircraft;
- **FD-4B-3:** Fuel service station gasoline storage tank(s) equipped with a Phase I vapor recovery control system having an annual facility throughput less than or equal to 20,000,000 gallons;

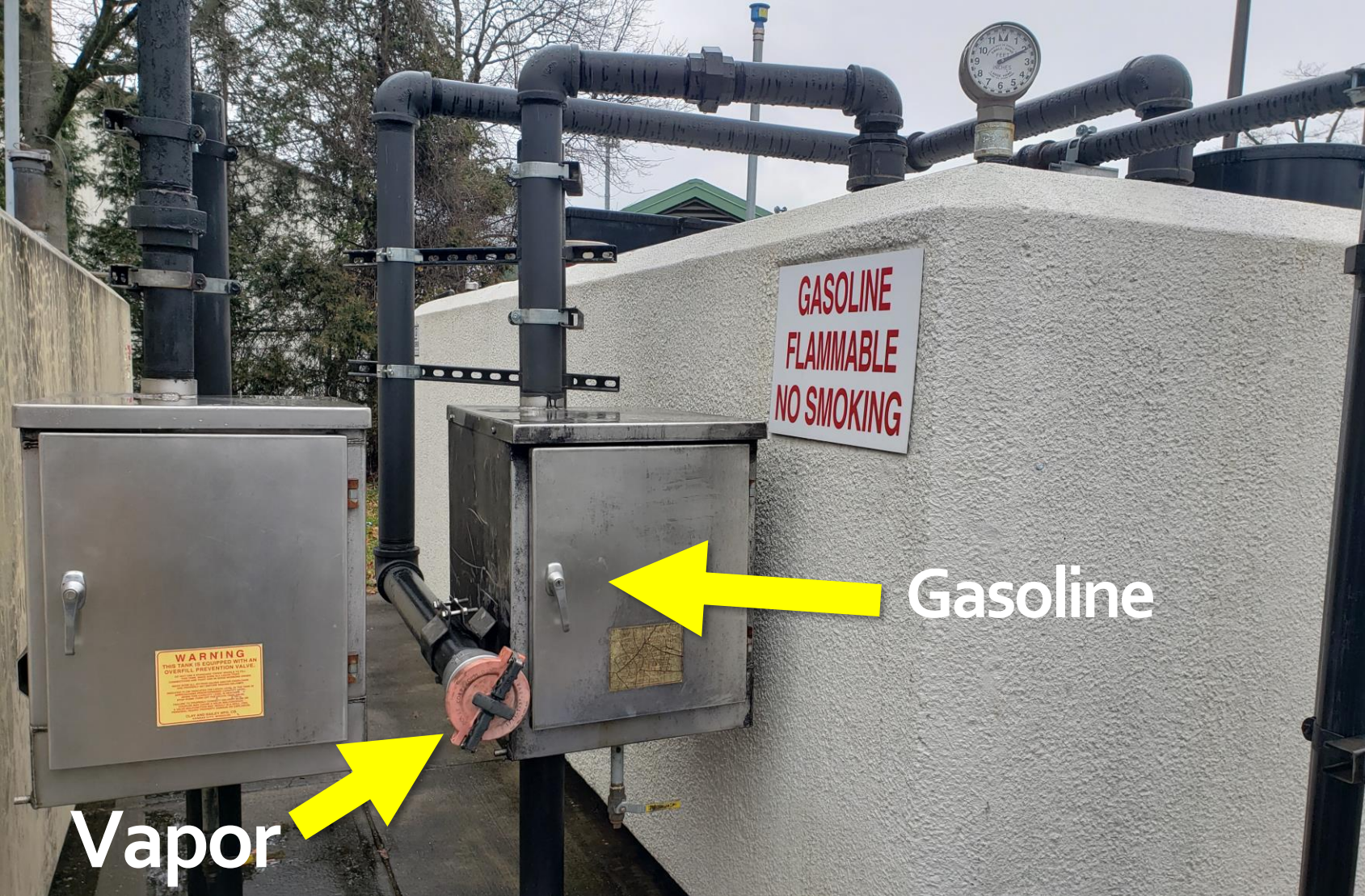
Each facility may possess only one GP-004B at any time. If a facility wants to add a new source, replace or make changes to an existing source that's already registered under GP-004B, then a new General Permit registration is required. This new General Permit registration will supersede the existing General Permit.

AST Equipment

Phase I P/V Valve Components

Remote Vapor recovery and Fill





Vapor

Gasoline

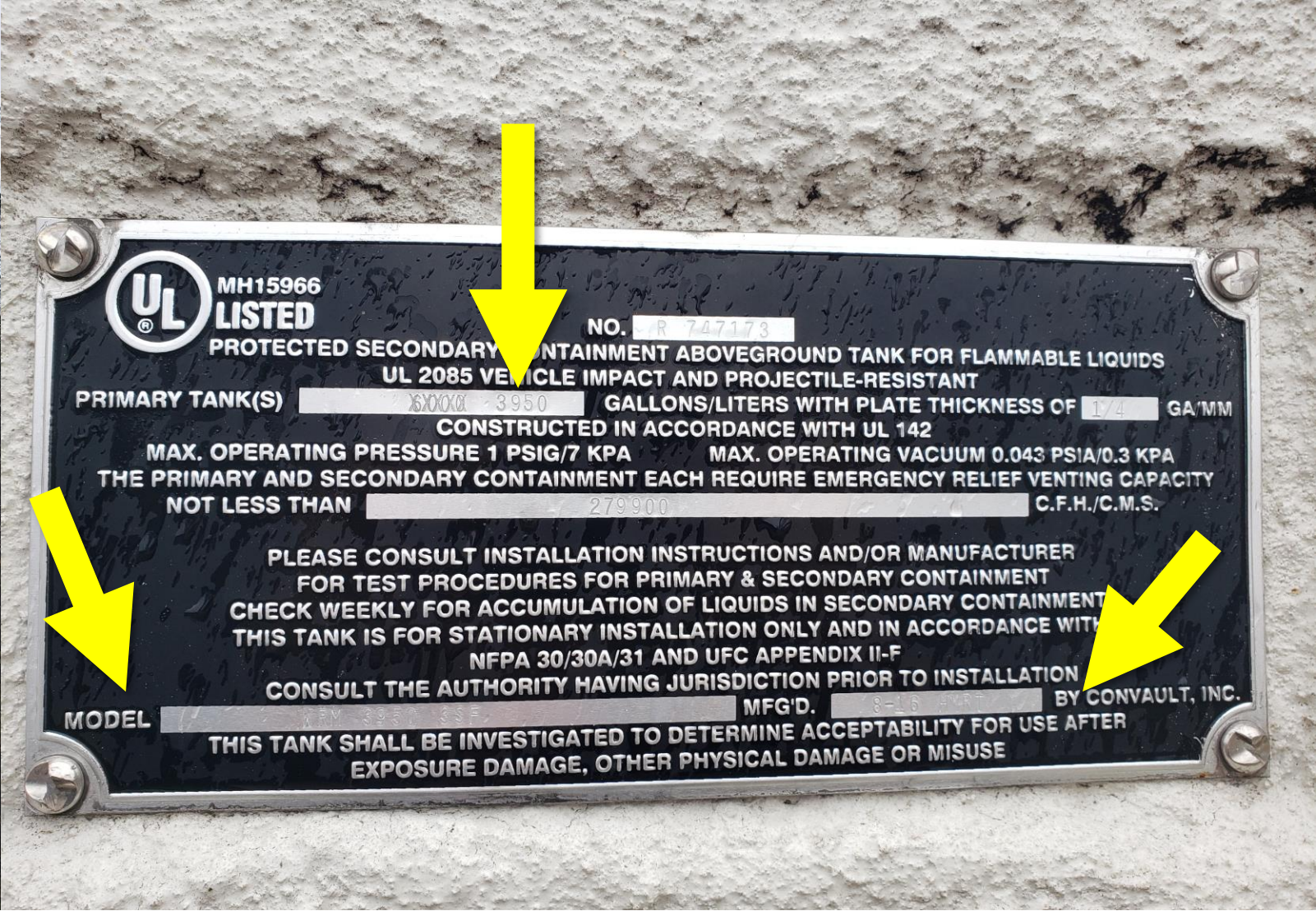
Remote Vapor Recovery and Fill Adaptor
in Spill Box



P/V Valve

White Tank

EVR P/V Valve + White Tank = Standing Loss Control (SLC)



Is the tank CARB EVR? Check Tank Plates

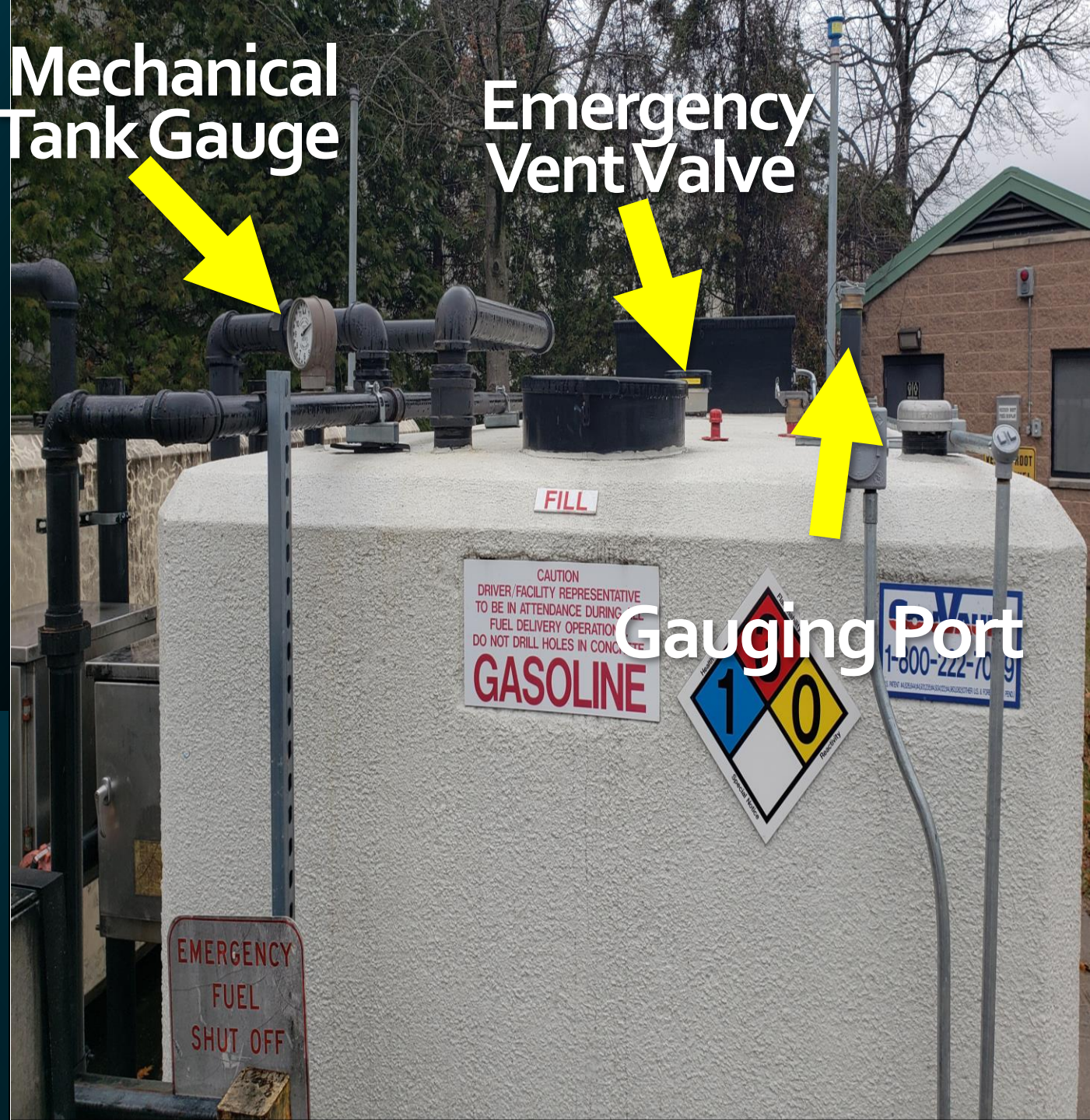
More Phase 1 Parts
visual check if EVR

Emergency Vent
Tank Gauge
Gauging Port

Mechanical
Tank Gauge

Emergency
Vent Valve

Gauging Port





Nozzle

Hose

Phase 2 EVR Nozzle and Hose

How do I check if component is CARB EVR?

**Get as much information as possible from
visual inspection / testing records / supplier / contractor**

How do I check if component is CARB EVR?

Check the CARB EOs

<https://ww2.arb.ca.gov/our-work/programs/vapor-recovery/vapor-recovery-executive-orders>

COMMON ISSUES

EQUIPMENT PERMIT INFORMATION

- Are details current?
- Type of Fill / Recovery
- Vapor System
- Maximum Throughput Limit

PERMIT REQUIREMENTS

- Daily monitoring of equipment and totalizer conducted and recorded
- Annual / Monthly throughput being monitored and recorded

COMMON ISSUES

While filling are
fill and vapor
hoses correctly
connected?



Is the tank and equipment in good condition?



Dual Point

**VAPOR
RECOVERY**



**Remote Fill Spill
Container**



**VAPOR Adaptor
and Dust Cap**



QUESTIONS?

Check out the
FAQ

by Judy Rand

<https://dep.nj.gov/wp-content/uploads/boss/permitting-guidance/nj-phase-i-faqs-2-16-23.pdf>

New Jersey Department of Environmental Protection
Gasoline Transfer Operations, Vapor Recovery Systems
NJAC 7:27-16.3

Phase I Vapor Recovery Rule Amendments Frequently asked Questions

Revision Adopted: October 24, 2017
Revision Effective: November 20, 2017 (49 N.J.R. 3590(a))
Revision Operative: December 23, 2017

Last Updated: February 16, 2023

Where are the current Regulations?

[NJDEP-Air Quality Management](#)

Subchapter 16, Section 16.3

What are Phase I and Phase II Systems?

“Phase I vapor recovery system” means a system that controls vapors during the transfer of gasoline from a delivery vessel to a gasoline dispensing facility vessel. This system is also known as a Phase I vapor recovery system or a Phase I vapor control system.

“Phase II vapor recovery system” means a system that controls vapors during the transfer of gasoline from a gasoline dispensing facility vessel to a motor vehicle. This system is also known as a Phase II vapor recovery system or a Phase II vapor control system.

“CARB-certified Phase I Enhanced Vapor Recovery system” or “CARB-certified Phase I EVR

QUESTIONS?



Compliance Advisory

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

Division of Air Enforcement #2023-12 Issued: 7/12/2023

Phase I Vapor Recovery Rule Amendments Frequently Asked Questions (FAQ)

WHO WOULD BENEFIT FROM REVIEWING THIS FAQ?

Anyone who is interested in learning about, or who is subject to the New Jersey Air Pollution Control Regulations for Gasoline Transfer Operations, Vapor Recovery Systems under N.J.A.C. 7:27-16.3.

FAQ DESCRIPTION:

The New Jersey Department of Environmental Protection has developed Frequently Asked Questions regarding New Jersey's rule amendments for Phase I Gasoline Transfer Operations and Vapor Recovery Systems at N.J.A.C. 7:27-16.3.

WHAT IS THE DEADLINE TO UPGRADE MY PHASE I SYSTEM:

A California Air Resources Board (CARB)-certified Phase I Enhanced Vapor Recovery (EVR) system pressure/vacuum relief vent valve on or before **December 23, 2018**; and
A CARB-certified Phase I EVR system, the components of which shall have been approved in one or more CARB-certified Phase I EVR System executive orders in effect at the time of installation, but the components need not all be approved in the same executive order on or before **December 23, 2024**.

The New Jersey's Phase I FAQ can be found [here](#).

Helpful Links for AST

CARB Compliance Alert / NJDEP FAQs for AST

<https://www.nj.gov/dep/enforcement/advisories/2023-12.pdf>

CARB VAPOR RECOVERY EXECUTIVE ORDERS

<https://ww2.arb.ca.gov/our-work/programs/vapor-recovery/vapor-recovery-executive-orders>



Contacts by Region:

Northern (973) 656-4444

Central (609) 292-3187

Southern (856) 614-3601

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Thank you!

Division of Air Enforcement

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NJ.GOV/DEP/Enforcement