

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES

Mel Carnahan, Governor • Stephen M. Mahfood, Director

DIVISION OF ENVIRONMENTAL QUALITY

P.O. Box 176 Jefferson City, MO 65102-0176

AUG 12 1999

Scott Negley
Product Manager, Dispensers
Wayne Dresser Industries
P. O. Box 1859
Salisbury, MD 21802-1859

APPROVAL LETTER

99-07

Dear Mr. Negley:

This is to clarify the approval of the Balance Stage II Vapor Recovery dispensers which your company submitted for Missouri Performance Evaluation Test Procedures (MOPETP) testing and approval. This testing took place at the Mobil Mart, 5840 South Lindbergh, St. Louis, Missouri. These dispensers were approved with approval letter 99-04.

Just recently the Air Pollution Control Program (APCP) has determined, through engineering analysis, and information from equipment contractors, that this approval language was somewhat restrictive. This approval letter will clarify and explain what we now understand to be the representation for the acceptable models of similar design and emission potential as the Wayne Vista 390U D4 GQY, GQY, dispenser approved on Approval letter 99-04. These dispenser models are subject to the same restrictions and conditions as was previously listed on Approval 99-04.

These latest approved dispensers are all of the single hose family, both 48" and 36" widths. Hoses on one side are not to exceed two, as in the 3 + 1 and the 4 + 1 dispensers.

Scott Negley
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The Missouri Department of Natural Resources' APCP approves the equipment listed below, subject to the terms and conditions of approval listed above and on **MOPETP Approval APCP-0002-001-99**. The equipment below is approved for use on all Approved Balance Vapor Recovery systems.

Manufacturer	Model	Component
Wayne Dresser Ind.	Wayne Vista 390 V390U D4 GQUY	Dispenser
	V390U	Dispenser
	V395 becomes model V595 After 6/99	Dispenser
	V395U becomes model V595/U After 6/99	Dispenser
	V490U	Dispenser
	V580	Dispenser
	V585	Dispenser
	V590U	Dispenser

Sincerely,

AIR POLLUTION CONTROL PROGRAM


for Roger D. Randolph
Director

RDR/bpk

c: Stage II Vapor Recovery Manufacturers

EXHIBIT 1
OPW BALANCE SYSTEM
COMPONENTS BY MANUFACTURER
MOPETP APPROVED COMPONENTS

List of equipment tested during the OPW MO/PETP.

Component	Model	Number Tested
P/V Valve	OPW 523-2203 VS (slipon)	2
	OPW 523-2203 VS (threaded)	2
Extractable Vapor Valve	OPW 233 VM-2045	4
Swivel Fill Adapter	OPW 16SA-1020	2
Locking Fill Adapter	OPW 633LC-1000	2
Fill Cap	OPW 634TT-4	4
Float Vent Valve	OPW 53FC-0046	4
Overfill Protection Drop Tube	OPW 61SO-400C	4
Spill Container	OPW 1-2100 (with drain valve)	2
	OPW 1-21PP (Plugged)	2
Vapor Recovery Adapter	OPW 1161AV-1620	2
Vapor Recovery Cap	OPW 1711T-7085	2
Dispensers	Wayne Vista 390	6
	V390U D4 GQUY	
Nozzles	OPW 11VF	12
Hoses	Dayco V 2000	12
Breakaways	OPW 66 CL	12
Whip Hoses	Dayco 2000	12

The above components of the OPW Balance system are approved for use in gasoline dispensing facilities which require approved Balance Vapor Recovery systems. As additional Balance Vapor Recovery Equipment components become MOPETP approved, all approved Balance components will be available for use in all future Balance Systems. The Balance system and various components approval is contingent upon compliance with all CARB certification requirements and the following Missouri MOPETP requirements. The MOPETP requirements are listed on Exhibit 2.

EXHIBIT 2 Performance & Installation Specifications

OPW 11 VF Nozzles

OPW 11 VF nozzles are approved for use with other approved balance system equipment in the State of Missouri. The nozzles attained a greater than 95% efficiency during one of the most difficult times of year for such testing. The nozzles performed well over the 180-day period of testing except in relation to the vapor valve opening at times when inserted into the Wayne Vista 390 nozzle pockets. All nozzles must have a serial number attached to the nozzle.

The installation instructions for these nozzles **MUST** include a notice that when used with the Wayne 390 Series dispenser (or any other dispenser using the same nozzle pocket design) that the nozzle pocket must be modified such that the bellows is not depressed allowing the vapor valve to open. If the nozzle bellow must be adjusted in order to pass the leak decay test, then the nozzle may not be installed with that dispenser.

If during operational permit testing, OPW 11 VF nozzles routinely have problems passing either the leak decay or pressure decay tests, then OPW will be notified and the problem must be resolved with immediate and long term corrective actions.

The nozzles should be used with components with back pressures such that the total system back pressures will be within the criteria listed in Table 2-1. A summary of the average back pressures of each component can be found in Table 2-2.

Table 2-1. MO/PETP Back pressure criteria.

Flow (scfh)	40	60	80
Back Pressure ("WC)	#0.16	#0.35	#0.62

**Performance & Installation
Specifications
Continued**

Table 2-2. Summary of Average Back Pressure Data

(all data from the pretest except the nozzles).

Component	Model	Backpressure ("WC)			Number Tested
		40 cfh	60 cfh	80 cfh	
Dispensers	Wayne Vista 390 V390U D4 GQUY	0.072	0.129	0.215	6 (12 points)
Nozzles (Pretest)	OPW 11VF	0.018	0.052	0.094	12
Nozzles (Post test)	OPW 11VF	0.025	0.069	0.118	11
Hoses	Dayco V 2000	0.033	0.070	0.108	12
Breakaways	OPW 66 CL	0.003	0.007	0.009	12
Whip Hoses	Dayco 2000	0.013	0.028	0.045	12
System		0.127	0.253	0.360	12

OPW 66 CL Breakaways

OPW 66 CL Breakaways are approved for use with other approved balance system components in the State of Missouri. These breakaways must be manufactured, sold, and installed exactly as tested at the MO/PETP site. Any modifications will need [at a minimum] an engineering evaluation and review by the TRC. The breakaways should be used with components with back pressures such that the total system back pressures will be within the criteria listed in Table 2-1. A summary of the average back pressures of each component can be found in Table 2-2.

Wayne Vista 390 (V390U D4 GQUY)

Wayne Vista 390 series dispensers are approved for use with other approved balance system components. The Vista 390 series dispensers (vapor equipped/vapor ready) models are all included in this approval as long as the model chosen has a backpressure equal to or less than the model tested (V390U D4 GQUY). The Wayne Vista dispensers must be manufactured, sold, and installed as tested at the MO/PETP site. The dispenser must be installed such that there are no constrictions in the connections between the dispenser vapor piping and the underground piping.

Performance & Installation Specifications *Continued*

It is preferred that the dispensers are installed with all vapor piping preinstalled by the manufacturer (suffix GQY). However, vapor ready systems (suffix GQUY) may be installed IF all vapor piping and connections installed by the contractor are the same as those materials used by the manufacturer. It is the responsibility of the contractor to assure that proper vapor piping and other components are used in installing the dispenser. It is the responsibility of the manufacturer to make clear in the installation instructions manual the proper requirements for the vapor piping.

The Wayne Vista 390 dispensers must be supplied with the appropriate modification kit (P/N 918942M-Kit) when used with the OPW 11VF nozzles or other long spout nozzles as described in the Wayne Installation Manual. Use of this dispenser with other long nozzles may require use of other specific modification kits as described in the Wayne installation documentation. The nozzles must not be adjusted in the pockets before the Leak Decay test; if such adjustment is needed before the system can pass the Leak Decay test, then the nozzles may not be used with the dispenser. If during operational permit testing, the Wayne 390 series dispenser routinely have problems passing either the leak decay or pressure decay tests, then Wayne will be notified and the problem must be resolved with immediate and long term corrective actions.

The dispensers should be used with components with back pressures such that the total system back pressures will be within the criteria listed in Table 2-1. A summary of the average back pressures of each component can be found in Table 2-2.

OPW 523V-2203 Pressure/Vacuum (P/V) Valves

OPW 535V-2203 P/V Valves are approved for use with other approved balance system components in the State of Missouri. Both the threaded and slip-on models were tested. These P/V valves must be manufactured, sold, and installed exactly as tested at the MO/PETP site and be able to pass the same test criteria. The P/V valves must be stamped with a model number and date code. The P/V valves must be installed according to the instructions. No pipe dope should be used to install the P/V valves. Care must be taken when checking for leaks around P/V valves that no soap gets into the valve. Such soap prevents the valve from opening properly. The slip-on models must be held down firmly before tightening. Any modifications will need [at a minimum] an engineering evaluation and review by the TRC.

If during operational permit testing, the OPW 535V-2203 P/V Valves may routinely have problems passing either the leak decay or pressure decay tests, then OPW will be notified and the problem must be resolved with immediate and long-term corrective actions.

**Performance & Installation
Specifications
*Continued***

OPW Spill Container 1-2100 with Drain Valve

OPW Spill Container 1-2100 with Drain Valve is approved for use with other approved balance system components in the State of Missouri. These spill containers with drain valves must be manufactured, sold, and installed exactly as tested at the MO/PETP site and be able to pass the same test criteria. Any modifications will need [at a minimum] an engineering evaluation and review by the TRC. While these spill containers did not appear to cause significant leaking during the 180 durability test, there is still more potential over the years for these spill containers to develop leaks than for the plugged spill containers or those built with no valve openings. Thus, the recommendation is that spill containers that are plugged or have no drain hole should be used.

OPW Spill Container 1-21PP with Drain Valve Opening Plugged

OPW Spill Container 1-21PP with Drain Valve Opening Plugged is approved for use with other approved balance system components in the State of Missouri. These spill containers with no drain valves must be manufactured, sold, and installed exactly as tested at the MO/PETP site and be able to pass the same test criteria. Any modifications will need [at a minimum] an engineering evaluation and review by the TRC. These spill containers are preferred over those with drain valves because of the greater possibility of leaks over the years for those with drain valves.

OPW Swivel Fill Adapter 16SA-1020

OPW Swivel Fill Adapter 16SA-1020 is approved for use with other approved balance system components in the State of Missouri. These fill adapters must be manufactured, sold, and installed exactly as tested at the MO/PETP site and be able to pass the same test criteria. Any modifications will need [at a minimum] an engineering evaluation and review by the TRC. There did not appear to be the same problems with these adapters being loosened during bulk fuel deliveries as with the OPW 633T-8706 fill adapters tested during the Husky MO/PETP. Thus, it is recommended that the locking clamp or swivel adapters be used.

OPW Locking Clamp Fill Adapter 633LC-1000

OPW Locking Clamp Fill Adapter 633LC-1000 is approved for use with other approved balance system components in the State of Missouri. These fill adapters must be manufactured, sold, and installed exactly as tested at the MO/PETP site and be able to pass the same test criteria. Any modifications will need [at a minimum] an engineering evaluation and review by the TRC. There did not appear to be the same problems with these adapters being loosened during bulk fuel deliveries as with the OPW 633T-8706 fill adapters tested during the Husky MO/PETP. Thus, it is recommended that the locking clamp or swivel adapters be used.

**Performance & Installation
Specifications
*Continued***

GENERAL GUIDELINES

At this time, several Balance system vapor recovery equipment manufacturers are conducting MOPETP tests for approval. As additional Balance system components are approved, those components will be approved as alternates to these components. The APCP foresees a wide selection of Balance system components available within the next year. These various approved components will be available to "mix and match" to other approved Balance components.

Back pressure is a critical issue in Balance systems. It has been estimated that for each additional 0.1" WC back pressure the system will loose 1% efficiency. Careful judgement should be taken to ensure that the components selected will result in total system back pressures within the acceptable limits. An example would be that during the Husky Balance MOPETP, one hose manufacturer had to be eliminated due to excessive hose back pressure. The general guideline for back pressure sharing is 1/3rd for the hanging gear, 1/3rd for the dispenser, 1/3rd for the underground plumbing and UST.