



**TECHNICAL SUPPORT DOCUMENT
WOODLAND CHEVRON**

**1010 Atlantic Street, Woodland, WA 98674
SWCAA ID: 725**

Air Discharge Permit SWCAA 18-3261

Air Discharge Permit Application CO-986

Issued: January 18, 2018

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Air Quality Engineer
Southwest Clean Air Agency

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Appendix A – CARB Executive Order G-70-97-A

Appendix B – CARB Executive Order G-70-191-AA

Abbreviations

ADP	Air Discharge Permit (a.k.a. Order of Approval)
AP-42	<u>Compilation of Emission Factors, AP-42, Fifth Edition, Volume 1, Stationary Point and Area Sources</u> – published by the US Environmental Protection Agency
BACT	Best Available Control Technology
BART	Best Available Retrofit Technology
CARB	California Air Resources Board
CFR	Code of Federal Regulations
CO	Carbon monoxide
CO ₂ e	Carbon dioxide equivalent
EPA	U.S. Environmental Protection Agency
EVR	Enhanced Vapor Recovery
HAP	Hazardous air pollutant listed pursuant to Section 112 of the Federal Clean Air Act
LAER	Lowest Achievable Emission Rate
lb	Pounds
NO _x	Nitrogen oxides
PM	Particulate matter with an aerodynamic diameter less than or equal to 100 micrometers (includes both filterable particulate matter measured by EPA Method 5 that is less than 100 micrometers and condensable particulate matter measured by EPA Method 202)
PM ₁₀	Particulate matter with an aerodynamic diameter less than or equal to 10 micrometers (includes both filterable particulate matter measured by EPA Method 201 or 201A and condensable particulate matter measured by EPA Method 202)
PM _{2.5}	Particulate matter with an aerodynamic diameter less than or equal to 2.5 micrometers (includes both filterable particulate matter measured by EPA Method 201 or 201A and condensable particulate matter measured by EPA Method 202)
PSD	Prevention of Significant Deterioration
RACT	Reasonably Available Control Technology
RCW	Revised Code of Washington
SEPA	State Environmental Policy Act
SO ₂	Sulfur dioxide
SWCAA	Southwest Clean Air Agency
TAP	Toxic air pollutant pursuant to Chapter 173-460 WAC
T-BACT	Best Available Control Technology for toxic air pollutants
tpy	Tons per year
VOC	Volatile organic compound
WAC	Washington Administrative Code
"w.c.	Pressure measured in inches of water column

1. FACILITY IDENTIFICATION

Applicant Name: Wilson Oil, Inc.
Applicant Address: PO Box 69, Longview, WA 98632

Facility Name: Woodland Chevron
Facility Address: 1010 Atlantic Street, Woodland, WA 98674

SWCAA Identification: 725
Contact Person: Monica Wallace

Primary Process: Gasoline dispensing
SIC / NAICS: 447190 / 5541
Facility Classification: BACT / Natural Minor

2. FACILITY DESCRIPTION

This facility is a retail gasoline dispensing facility with a sales kiosk but not associated with a convenience store.

3. CURRENT PERMITTING ACTION

This permitting action is in response to Air Discharge Permit (ADP) Application number CO-986 received December 20, 2017. ADP Application CO-986 was submitted for approval to replace existing vacuum-assist Stage II vapor recovery equipment with new ORVR compatible vacuum-assist Stage II vapor recovery equipment.

4. PROCESS DESCRIPTION

This facility receives unleaded gasoline from tanker trucks for storage in three underground storage tanks. The storage tanks are equipped with two point non-EVR vapor balance systems that return gasoline vapors vented from the underground storage tanks to the tanker truck during delivery (Stage I vapor recovery). Gasoline from the underground storage tanks will be dispensed from 10 multi-product blending pumps (each dispensing regular, mid-grade, and super unleaded through a single hose). Vapors displaced from individual motor vehicle gasoline tanks during filling will be returned to the underground storage tanks (Stage II vapor recovery).

5. EQUIPMENT/ACTIVITY IDENTIFICATION

5.a Storage Tanks. The following storage tanks are utilized at the facility:

<u>Tank</u>	<u>Product</u>	<u>Capacity</u>
1	Regular Unleaded	10,000 gallons
2	Mid-Grade Unleaded	10,000 gallons
3	Super Unleaded	10,000 gallons

The gasoline storage tanks have been fitted with two-point Stage I vapor recovery equipment approved by CARB Executive Order G-70-97-A.

The following Stage II vapor recovery equipment, hoses, and nozzles will be installed as components of the ORVR compatible Stage II vapor recovery system approved by CARB Executive Order G-70-191-AA and Approval Letter #06-02 (Healy 9000 Nozzle).

Component	Make/Model
Nozzles	Healy / 900
Hoses	Healy / 75
Hose – Whips	Healy / 75
Breakaway Couplings	Healy / 8701
Vapor Pump	Healy / VP1000
Swivels	Integral to hoses
Dispensers	Wayne / Ovation B12
Pressure / Vacuum Valve	Unknown – not being replaced ¹

¹ If the pressure / vacuum valve is replaced, the only replacements currently approved by CARB are the Husky model 5885, FFS model PV-Zero, or the OPW model 723V.

5.b Summary.

ID No.	Generating Equipment/Activity	# of Units	Control Measure/Equipment	# of Units
1	Retail Gasoline Dispensing Facility	1	Stage I and Stage II Vapor Recovery Systems	2

6. EMISSIONS DETERMINATION

6.a Gasoline Vapors. Total VOC emissions were estimated using the following emission factors from AP-42 Section 5.2 (6/08):

Emission Source	VOC Emission Factor (lb/1,000 gallons of fuel)
Balanced Submerged Filling	0.3
Underground Tank Breathing and Emptying	1.0
Vehicle Refueling – Stage II controlled	1.1
Vehicle Refueling – Spillage	0.7
Total	3.1

It is assumed that this facility will have a gasoline throughput of no more than 6,450,000 gallons per year. Using the emission factors above, 10.00 tons of VOC emissions would be anticipated at a throughput of 6,450,000 gallons per year.

Based on EPA Speciate 3.2 profile number 2455, approximately 50.0% of the total VOC emissions consist of toxic air pollutants (TAPs) as defined by WAC 173-460 (as in effect February 14, 1994), and approximately 12.9% of the total VOC emissions consist of federally listed hazardous air pollutants (HAPs). For a throughput of 6,450,000 gallons per year, TAP and HAP emission rates are estimated to be 5.00 tons per year, and 1.29 tons per year respectively.

6.b Facilitywide Potential Emissions Summary.

Pollutant	Potential Annual Emissions (tpy)
Carbon monoxide	0.00
Nitrogen oxides	0.00
Volatile organic compounds	10.00
Sulfur oxides as sulfur dioxide	0.00
Particulate matter	0.00
PM ₁₀	0.00
PM _{2.5}	0.00
CO _{2e}	0.00
Toxic Air Pollutants	5.00
Hazardous Air Pollutants	1.29

7. REGULATIONS AND EMISSION STANDARDS

Regulations that have been used to evaluate the acceptability of the proposed facility and establish emission limits and control requirements include, but are not limited to, the regulations, codes, or requirements listed below.

7.a Title 40 Code of Federal Regulations (CFR) Part 63.11110 et seq. Subpart CCCCCC "National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities" establishes emission control, testing, recordkeeping and reporting requirements for new and existing gasoline dispensing facilities. Which requirements apply to a specific facility depend upon when the facility began operation and the monthly throughput. This facility began operation prior to January 10, 2008 and has a potential throughput of 100,000 gallons per month or more. Facilities with a throughput of 100,000 gallons per month or more that began operation prior to January 10, 2008 must be in compliance with a state rule or federally enforceable permit that contains requirements to achieve emission reductions of at least 90% by January 10, 2008 or comply with requirements found in Table 1 of Subpart CCCCCC including:

- (1) All vapor connections and lines on the storage tank shall be equipped with closures that seal upon disconnection;
- (2) The vapor line from the gasoline storage tank to the gasoline cargo tank shall be vapor tight;
- (3) The vapor balance system shall be designed such that the pressure in the tank truck does not exceed 18" w.c. pressure or 5.9" w.c. vacuum during product transfer;
- (4) The vapor recovery and product adaptors, and the method of connection with the delivery elbow, shall be designed so as to prevent the over-tightening or loosening of fittings during normal delivery operations;
- (5) Liquid fill connections for all systems shall be equipped with vapor-tight caps;
- (6) Pressure/vacuum vent valves shall be installed on the storage tank vent pipes. The positive pressure setting shall be 2.5" w.c. to 6" w.c. and the negative pressure setting shall be 6" w.c. to 10" w.c. The total leak rate for all pressure/vacuum valves at an affected facility, including connections, shall not exceed 0.17 cubic foot per hour at a pressure of 2.0" w.c. and 0.63 cubic foot per hour at a vacuum of 4" w.c.;
- (7) The vapor balance system shall be capable of meeting the static pressure performance requirement found in Table 1 of Subpart CCCCCC; and
- (8) Each new or existing gasoline storage tank shall be equipped with a dual-point vapor balance system.

As of January 10, 2008 this facility was complying with the requirements of SWCAA 491 which required Stage I vapor recovery equipment as approved by CARB or SWCAA. The Stage I vapor recovery equipment provided at least 90% control of gasoline vapors, therefore this facility is not subject to the requirements of Table 1 or any other requirement of this rule including initial notification. Note that although the rule adds no requirements for this facility, this facility is an affected source for the purposes of this rule.

- 7.b Title 40 CFR Part 80 "Regulation of Fuels and Fuel Additives" in section 80.22(j) requires that after January 1, 1998, every retailer and wholesale purchaser-consumer of gasoline and methanol shall limit each nozzle from which gasoline or methanol is introduced into motor vehicles to a maximum fuel flow rate not to exceed 10 gallons per minute.
- 7.c Revised Code of Washington (RCW) 70.94.141 empowers any activated air pollution control authority to prepare and develop a comprehensive plan or plans for the prevention, abatement and control of air pollution within its jurisdiction. An air pollution control authority may issue such orders as may be necessary to effectuate the purposes of the Washington Clean Air Act [RCW 70.94] and enforce the same by all appropriate administrative and judicial proceedings subject to the rights of appeal as provided in Chapter 62, Laws of 1970 ex. sess.
- 7.d RCW 70.94.152 provides for the inclusion of conditions of operation as are reasonably necessary to assure the maintenance of compliance with the applicable ordinances, resolutions, rules and regulations when issuing an Order of Approval (Air Discharge Permit) for installation and establishment of an air contaminant source.
- 7.e Washington Administrative Code (WAC) 173-460 "Controls for New Sources of Toxic Air Pollutants" (as in effect February 14, 1994) requires Best Available Control Technology for toxic air pollutants (T-BACT), identification and quantification of emissions of toxic air pollutants and demonstration of protection of human health and safety from new sources not provided an exemption under WAC 173-460-030. WAC 173-460-030(1)(b)(ii) exempts gasoline dispensing facilities from the provisions of WAC 173-460.
- 7.f SWCAA 400-040 "General Standards for Maximum Emissions" requires all new and existing sources and emission units to meet certain performance standards with respect to Reasonably Available Control Technology (RACT), visible emissions, fallout, fugitive emissions, odors, emissions detrimental to persons or property, sulfur dioxide, concealment and masking, and fugitive dust.
- 7.g SWCAA 400-040(3) "Fugitive Emissions" requires that reasonable precautions be taken to prevent the fugitive release of air contaminants to the atmosphere.
- 7.h SWCAA 400-040(4) "Odors" requires that good practice and procedures be used to reduce odors to a reasonable minimum, and does not allow any person to cause or allow the generation of any odor from any source or activity which may unreasonably interfere with any other property owner's use and enjoyment of their property.
- 7.i SWCAA 400-070(6) "Gasoline Dispensing Facilities" requires all gasoline dispensing facilities to meet all the provisions of SWCAA 491 "Emission Standards and Controls for Sources Emitting Gasoline Vapors."
- 7.j SWCAA 400-110 "New Source Review" requires that an Air Discharge Permit application be filed with SWCAA prior to the establishment of any new source, emission unit, or modification and that an Air Discharge Permit be issued prior to establishment of the new source, emission unit, or modification.
- 7.k SWCAA 400-113 "Requirements for New Sources in Attainment or Nonclassifiable Areas" requires that no approval to construct or alter an air contaminant source be granted unless it is evidenced that:
- (1) The equipment or technology is designed and will be installed to operate without causing a violation of the applicable emission standards;
 - (2) Best Available Control Technology will be employed for all air contaminants to be emitted by the proposed equipment;
 - (3) The proposed equipment will not cause any ambient air quality standard to be exceeded; and
 - (4) If the proposed equipment or facility will emit any toxic air pollutant regulated under WAC 173-460, the proposed equipment and control measures will meet all the requirements of that Chapter.

7.1 SWCAA 491-040(4) "Gasoline Vapor Control Requirements – Gasoline Dispensing Facilities (Stage I)" establishes the following requirements:

- (1) All gasoline dispensing facilities with an annual gasoline throughput greater than two hundred thousand (200,000) gallons in Clark County and three hundred sixty thousand (360,000) gallons in Cowlitz, Lewis, Skamania and Wahkiakum Counties shall be subject to gasoline Stage I vapor control requirements;
- (2) All gasoline dispensing stations subject to this section shall be equipped with submerged or bottom fill lines and fittings to balance gasoline vapors with the delivery transport tank; and
- (3) The owner or operator of a gasoline dispensing facility subject to this section shall not permit the loading of gasoline into a storage tank equipped with vapor recovery equipment from a transport tank equipped with vapor recovery fittings unless Stage I vapor recovery equipment is attached to the transport tank and operated satisfactorily.

7.m SWCAA 491-040(5) "Gasoline Vapor Control Requirements – Gasoline Dispensing Facilities (Stage II)" establishes the following requirements:

- (1) All gasoline dispensing facilities with an annual gasoline throughput equal to or greater than six hundred thousand (600,000) gallons in Clark County and one million two hundred thousand (1,200,000) gallons in Cowlitz County shall be subject to gasoline Stage II vapor control requirements. For Lewis, Skamania and Wahkiakum Counties, Stage II vapor control equipment is not required unless the facility exceeds the throughput and distance requirements listed in SWCAA 491.
- (2) All gasoline dispensing stations subject to this section shall be equipped with certified Stage II gasoline vapor recovery systems;
- (3) The owner or operator of a gasoline dispensing facility subject to this section shall not transfer or allow the transfer of gasoline from stationary tanks unless certified Stage II vapor recovery equipment is used;
- (4) All Stage II equipment shall be installed in accordance with the system's certification requirements and shall be properly maintained;
- (5) Whenever a Stage II vapor recovery system is determined to be defective, it shall be taken out of service until repaired, replaced or adjusted, as necessary;
- (6) The owner or operator of a gasoline dispensing facility utilizing a Stage II system shall conspicuously post operating instructions that clearly describe how to fuel vehicles, warning against topping off; and the instructions shall contain the Washington Department of Ecology (WDOE) or SWCAA toll free telephone number for complaints (800-272-3780 or 800-633-0709);
- (7) Every retailer and wholesale purchaser-consumer handling over 10,000 gallons per month shall equip each pump from which gasoline is dispensed into motor vehicles with a nozzle that dispense fuel at a flow rate not to exceed 10 gallons per minute;
- (8) All new or upgraded facilities shall be performance tested upon installation prior to placing into service to ensure proper functioning of the system. This testing shall be in accordance with the applicable CARB Executive Order certifying the equipment and results shall be sent to SWCAA within 14 days of testing; and
- (9) Pressure/vacuum valves shall be installed as required by the CARB Executive Order certifying the vapor recovery system.

8. RACT/BACT/BART/LAER/PSD/CAM DETERMINATIONS

The proposed equipment and control systems incorporate Best Available Control Technology (BACT) for the types and amounts of air contaminants emitted by the processes as described below:

8.a Retail Gasoline Dispensing Facility. SWCAA has determined that Best Available Control Technology for the control of gasoline vapors emitted from gasoline dispensing facilities with a throughput of more than 1,200,000 gallons per year in Cowlitz County consists of EVR Stage I and ORVR compatible Stage II vapor recovery equipment as tested and approved by CARB. The Stage I vapor recovery system utilized at this facility was approved by CARB Executive Order G-70-97-A dated December 9, 1985 and is not being replaced; therefore, it

is not being reviewed against BACT requirements. The ORVR compatible Stage II vapor recovery system and equipment proposed for use at this facility was approved by CARB Executive Order G-70-191-AA dated July 30, 2001.

- 8.b PSD Applicability. Maximum potential emissions from this facility are well below PSD thresholds; therefore, PSD permitting is not required.
- 8.c Compliance Assurance Monitoring (CAM) Applicability Determination. CAM is not applicable to any emission unit at this source because it is not a major source and is not required to obtain a Part 70 permit.

9. AMBIENT IMPACT ANALYSIS

- 9.a The retail gasoline dispensing facility equipped with Stage I and Stage II vapor recovery systems as proposed in ADP Application CO-986 will not cause the ambient air quality standards established by Title 40 Code of Federal Regulations Part 50 (40 CFR 50), "National Primary and Secondary Ambient Air Quality Standards" to be violated.
- 9.b The retail gasoline dispensing facility equipped with Stage I and Stage II vapor recovery systems as proposed in ADP Application CO-986, if properly installed and maintained, can be operated without causing a violation of the applicable emission standards which include the limits established under SWCAA 400-040 "General Standards for Maximum Emissions."
- 9.c The retail gasoline dispensing facility equipped with Stage I and Stage II vapor recovery systems as proposed in ADP Application CO-986 will not cause the requirements of WAC 173-460 "Controls for New Sources of Toxic Air Pollutants," (in effect February 14, 1994) or WAC 173-476 "Ambient Air Quality Standards" to be violated.

10. DISCUSSION OF APPROVAL CONDITIONS

SWCAA has made a determination to issue Air Discharge Permit SWCAA 18-3261 in response to Air Discharge Permit Application CO-986. Air Discharge Permit SWCAA 18-3261 contains approval requirements deemed necessary to assure compliance with applicable regulations and emission standards as discussed below.

- 10.a General Basis. Approval conditions for equipment affected by this permitting action incorporate the operating schemes proposed by the permittee in the Air Discharge Permit application.
- 10.b Emission Limits. An annual VOC emission limit of 10.00 tons per year was established. This limit matches the potential emissions from a properly operated facility equipped with Stage I and Stage II vapor recovery systems and a throughput of 6,450,000 gallons per year.
- 10.c Operating Limits and Requirements. Consistent with SWCAA 400-040(4), the permittee is required to use recognized good practice and procedures to reduce odors to a reasonable minimum. The remainder of the requirements relate to proper operation of the Stage I and Stage II vapor recovery systems.

The pressure/vacuum valve leak rate requirements for individual valves were taken from CARB Stage I Executive Orders. The combined leak rate requirements for all pressure/vacuum valves in the system comes from 40 CFR 63 Subpart CCCCC.

The air to liquid ratio for the Stage II system was reduced from the value listed in the Executive Order (1.10 ± 0.10) to 1.00 ± 0.10 . This was done because:

1. This facility will use a newer nozzle (Healy 900) than Executive Order G-70-191-AA was written for, and this newer nozzle is expected to more efficiently collect gasoline vapors. The newest CARB executive orders

that utilize a Healy 900 nozzle specify an air to liquid ratio of 1.05 and require a tank pressure management system to prevent excess emissions due to tank venting;

2. This facility will not use a tank pressure management system; and
3. Utilizing an air to liquid ratio of 1.00 ± 0.10 is consistent with CARB Certification and Test Procedure CP-201 (April 23, 2015) for all new Stage II vacuum assist systems without a vapor processor.

10.d Monitoring and Recordkeeping. The permittee is required to record each occurrence of maintenance and repairs to Stage I and Stage II vapor recovery equipment so that SWCAA and the permittee can assure that maintenance and repairs are consistent with approved vapor recovery requirements.

10.e Emission Monitoring and Testing Requirements. See Section 12.

10.f Reporting. Total gasoline throughput and the annual emissions inventory are required to be submitted to SWCAA by January 31st of each year (unless otherwise directed by SWCAA) to demonstrate compliance with the throughput limitation in the permit and allow for the development of a comprehensive emissions inventory. Test results must be reported to SWCAA within 14 days of test completion consistent with CARB and SWCAA reporting requirements.

11. START-UP AND SHUTDOWN/ALTERNATIVE OPERATING SCENARIOS/POLLUTION PREVENTION

11.a Startup and Shutdown Provisions. Pursuant to SWCAA 400-081 "Start-up and Shutdown," technology based emission standards and control technology determinations shall take into consideration the physical and operational ability of a source to comply with the applicable standards during startup or shutdown. Where it is determined that a source is not capable of achieving continuous compliance with an emission standard during startup or shutdown, SWCAA shall include appropriate emission limitations, operating parameters, or other criteria to regulate performance of the source during startup or shutdown.

This source is capable of achieving continuous compliance with all applicable requirements; therefore, no startup or shutdown provisions were included in the Air Discharge Permit.

11.b Alternate Operating Scenarios. SWCAA conducted a review of alternate operating scenarios applicable to equipment affected by this permitting action. The permittee did not propose or identify any applicable alternate operating scenarios. Therefore, none were included in the approval conditions.

11.c Pollution Prevention Measures. SWCAA conducted a review for possible pollution prevention measures outside of the use of Stage I and Stage II vapor recovery equipment. No other pollution prevention measures were identified by either the permittee or SWCAA. Therefore, none were accommodated in the approval conditions.

12. EMISSION MONITORING AND TESTING

An annual static pressure decay test was required to assure that the existing Stage I vapor recovery systems are vapor tight. The annual testing required by CARB Executive Order G-70-191-AA was required to assure that the new Stage II vapor recovery systems are operating properly. In accordance with SWCAA 491, initial testing is required prior to placing the equipment into service rather than within 60 days after startup as specified in the applicable CARB Executive Orders.

13. FACILITY HISTORY

13.a Previous Permitting Actions. SWCAA has previously issued the following Permits for this facility:

Permit	Application	Date Issued	Description
00-2252	CO-654	January 18, 2000	Approval to replace OPW Vapor EZ vacuum-assist Stage II vapor recovery equipment with Gilbarco VaporVac vacuum-assist Stage II vapor recovery equipment. Superseded Air Discharge Permit 97-2061.
97-2061	CO-609	October 9, 1997	Approval to replace balance-style Stage II vapor recovery equipment with OPW Vapor EZ vacuum-assist Stage II vapor recovery equipment. Superseded the Stage II provisions of Air Discharge Permit 93-1474. Note that Air Discharge Permit 93-1474 only includes requirements related to Stage II vapor recovery.
93-1474	CO-472	October 11, 1993	Approval to install balance-style Stage II vapor recovery equipment at an existing gas station.

Bold font indicates that the Order or Air Discharge Permit will have been superseded or will no longer be in effect when Air Discharge Permit 18-3261 is issued.

14. PUBLIC INVOLVEMENT

- 14.a Public Notice for Air Discharge Permit Application CO-986. Public notice for Air Discharge Permit Application CO-986 was published on the SWCAA internet website for a minimum of 15 days beginning on December 28, 2017.
- 14.b Public/Applicant Comment for Air Discharge Permit Application CO-986. SWCAA did not receive formal comments, a comment period request, or any other inquiry from the public or the applicant regarding this Air Discharge Permit application. Therefore, no public comment period was provided for this permitting action.
- 14.c State Environmental Policy Act. This project is exempt from SEPA requirements pursuant to WAC 197-11-800(3) since it only involves repair, remodeling, maintenance, or minor alteration of existing structures, equipment or facilities, and does not involve material expansions or changes in use. SWCAA issued a determination that the project is exempt from SEPA review on January 18, 2018 (Determination of SEPA Exempt - SWCAA 18-003).

Appendix A

CARB Executive Order G-70-97-A

**Stage I Vapor Recovery Systems for Underground
Gasoline Storage Tanks at Service Stations**

State of California
AIR RESOURCES BOARD

Executive Order G-70-97-A

Stage I Vapor Recovery Systems for Underground
Gasoline Storage Tanks at Service Stations

WHEREAS, the Air Resources Board (the "Board") has established, pursuant to Sections 39600, 39601, and 41954 of the Health and Safety Code, certification procedures for systems designed for the control of gasoline vapor emissions during filling of underground gasoline storage tanks ("Stage I vapor recovery systems") in its "Certification Procedures for Gasoline Vapor Recovery Systems at Service Stations" as last amended December 4, 1981 (the "Certification Procedures"), incorporated by reference in Section 94001 of Title 17, California Administrative Code;

WHEREAS, the Board has established, pursuant to Sections 39600, 39601, and 41954 of the Health and Safety Code, test procedures for determining compliance of Stage I vapor recovery systems with emission standards in its "Test Procedures for Determining the Efficiency of Gasoline Vapor Recovery Systems at Services Stations" as last amended September 1, 1982 (the "Test Procedures"), incorporated by reference in Section 94000 of Title 17, California Administrative Code;

WHEREAS, the Board finds it beneficial to consolidate Executive Orders G-70-47-B, G-70-4-A, and G-70-2-G, certifying Stage I vapor recovery systems in order to have a complete listing by manufacturer of all Stage I vapor control equipment which has been certified and is available for use in the coaxial and/or two point Stage I vapor recovery systems;

WHEREAS, the Board finds it necessary to revise Executive Order G-70-97 to clarify the requirement for pressure/vacuum relief valves on the vents of underground storage tanks and to clarify the interchangeability of certain Stage I vapor recovery system componets.

NOW THEREFORE, IT IS HEREBY ORDERED that Executive Order G-70-97 issued on May 13, 1985 for Stage I vapor recovery systems for underground gasoline storage tanks be modified by this Executive Order G-70-97-A.

IT IS FURTHER ORDERED that Stage I Systems will conform to one of the four options shown in Figures 1 thru 4 of this Executive Order and only certified vapor recovery components (or fittings) may be used in the systems. Exhibits 1 thru 3 (Attached) list by manufacturer all of the certified fittings approved for use with Stage I vapor recovery systems. The systems shall otherwise comply with all the certification requirements in the latest "Certification Procedures for Gasoline Vapor Recovery Systems at Service Stations" applicable to Stage I systems.

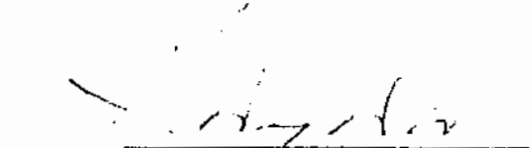
IT IS FURTHER ORDERED that any underground storage tank equipped with a Stage I vapor recovery system and filled from a gasoline delivery tank equipped with pressure-differential activated vapor-return vent valves must have a pressure-vacuum relief valve on the vent of the underground storage tank.

IT IS HEREBY ORDERED that compliance with the applicable certification requirements and rules and regulations of the Division of Measurement Standards, the Office of the State Fire Marshal, and the Division of Occupational Safety and Health of the Department of Industrial Relations is made a condition of this certification.

IT IS FURTHER ORDERED that the components and alternative configurations certified hereby shall perform in actual use with the same effectiveness as the certification test system.

IT IS FURTHER ORDERED that any alteration of the equipment, parts, design, or operation of the configurations certified hereby, is prohibited, and deemed inconsistent with this certification, unless such alteration has been approved by the undersigned or the Executive Officer's designee.

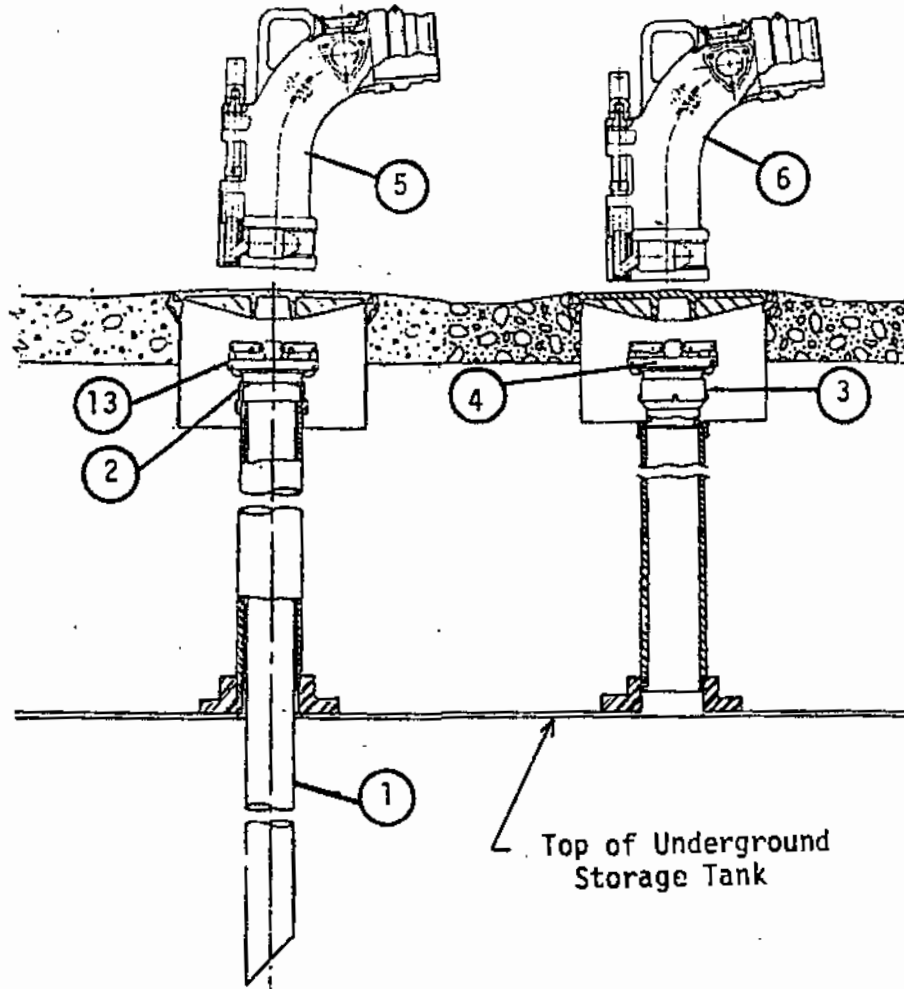
Executed at Sacramento, California this *9th* day of *December* 1985.



James D. Boyd
Executive Officer

FIGURE 1

Two Point Stage 1 Vapor Recovery System
Without Overfill Protection

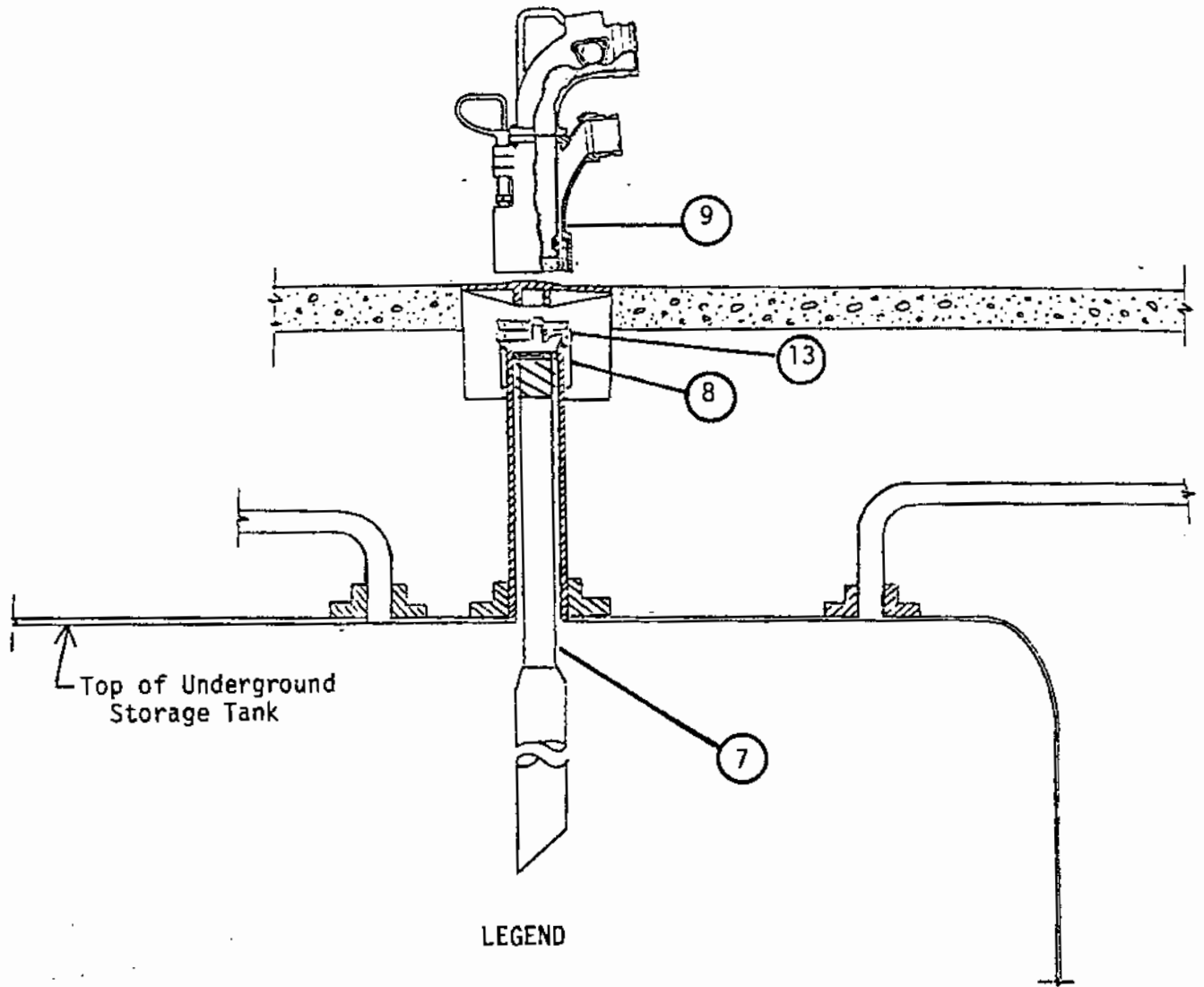


LEGEND

- | | | | |
|---|---------------|---|---------------|
| ① | Fill Tube | ④ | Vapor Cap |
| ② | Fill Adapter | ⑤ | Product Elbow |
| ③ | Vapor Adapter | ⑥ | Vapor Elbow |
| | | ⑬ | Fill Cap |

FIGURE 2

Coaxial Stage 1 Vapor Recovery System
Without Overfill Protection

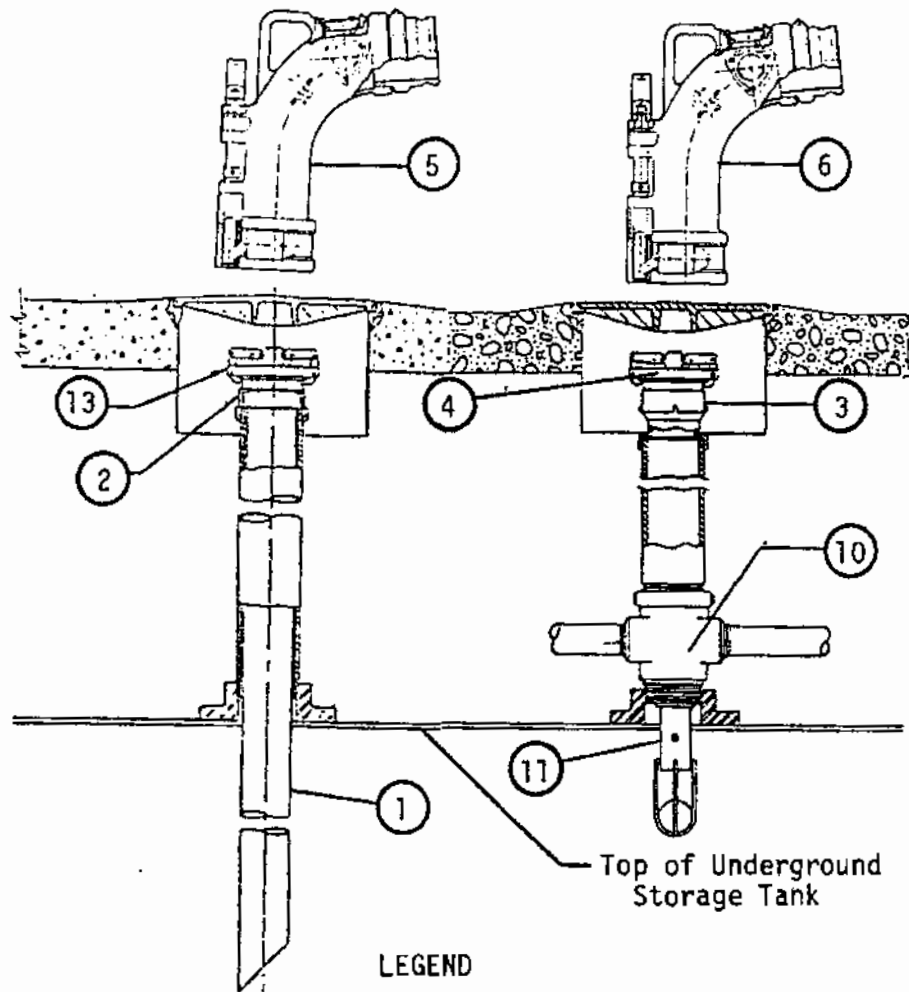


LEGEND

- | | |
|------------------------------|-----------------|
| ⑦ Coaxial Poppeted Fill Tube | ⑨ Coaxial Elbow |
| ⑧ Coaxial Fill Adapter | ⑬ Fill Cap |

FIGURE 3

Two Point Stage I Vapor Recovery System With
Overfill Protection



LEGEND

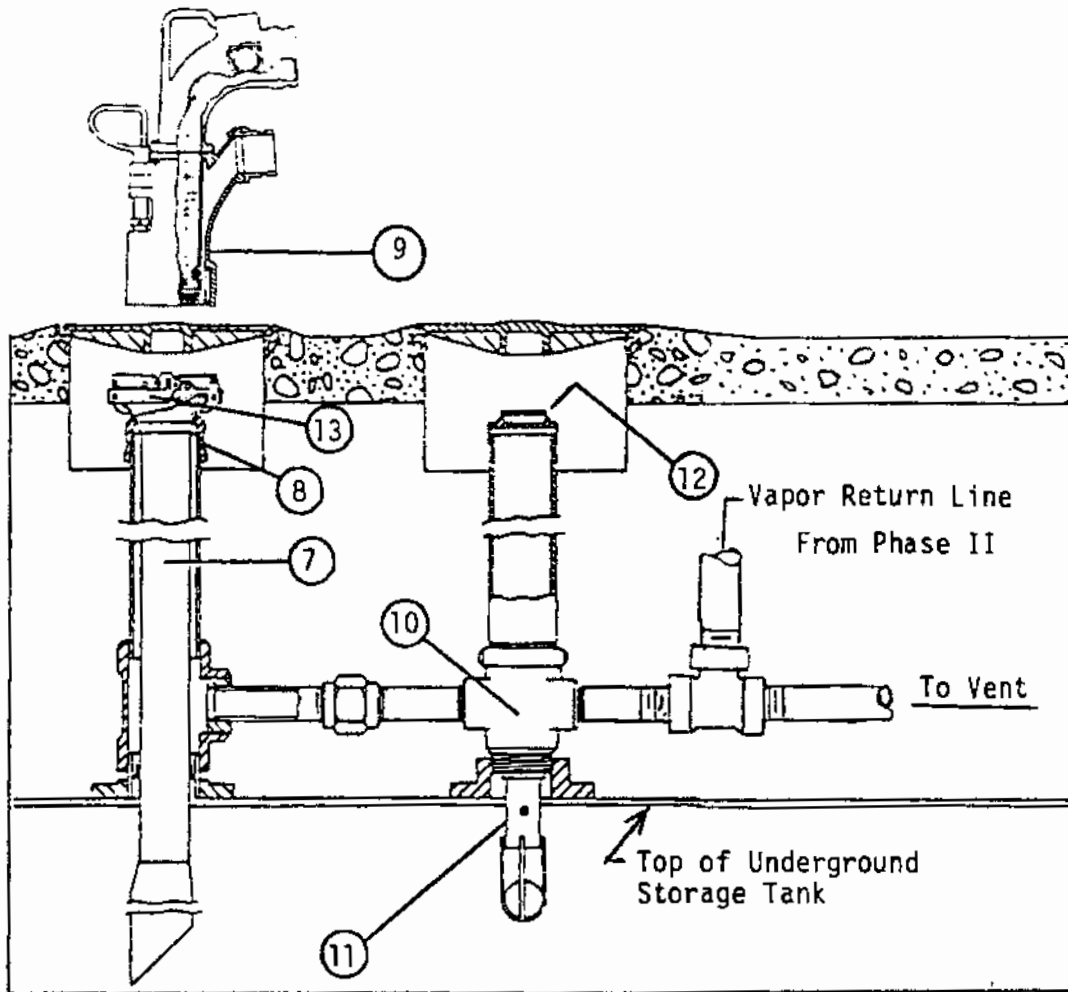
- | | | | |
|---|---------------|---|--------------------|
| ① | Fill Tube | ⑥ | Vapor Elbow |
| ② | Fill Adapter | ⑩ | Extractor Assembly |
| ③ | Vapor Adapter | ⑪ | Float Vent Valve |
| ④ | Vapor Cap | ⑬ | Fill Cap |
| ⑤ | Fill Elbow | | |

WARNING:

1. This system is not approved for use at service stations equipped with Red Jacket or Healy Phase II vapor recovery systems.
2. Float valve overfill protection systems should only be used on submerged pumping systems not with suction pump systems.
3. Overfill protection systems should only be used on gravity drop systems. Do not use where pump off unloading is used.

FIGURE 4

Coaxial Stage 1 Vapor Recovery System
With Overflow Protection



LEGEND

- | | |
|------------------------------|--------------------------|
| ⑦ Coaxial Poppeted Fill Tube | ⑩ Extractor Assembly |
| ⑧ Coaxial Fill Adapter | ⑪ Float Vent Valve |
| ⑨ Coaxial Elbow | ⑫ Pipe Cap ^{1/} |
| | ⑬ Fill Cap |

WARNING:

1. This system is not approved for use at service stations equipped with Red Jacket or Healy Phase II vapor recovery systems.
2. Float valve overflow protection systems should only be used as submerged pumping systems, not with suction pump systems.
3. Overflow protection systems should only be used on gravity drop systems. Do not use where pump off unloading is used.

^{1/} Required when a two point system is modified to a coaxial system.

EXHIBIT 1

Fittings Approved For Use On The Two Point Stage I Vapor Recovery Systems

Fittings Required For All Two Point Stage I Vapor Recovery Systems For Locations see Figure 1							Additional Fittings Required For Two Point Vapor Recovery Systems With Stage I Overflow Protection. For Locations See Figure 3		
Legend No.	①	②	③	④	⑤	⑥	⑩ + ⑪	⑩	⑪
Manufacturer	Fill Tube	Fill Adapter	Vapor Adapter	Vapor Cap	Elbows		Extractor Assembly With Float Vent Valve	Extractor	Float Vent Valve
					Fill	Vapor			
OPW	61 T	61 AS 633 T	1611 AV	1711 T 1711 TK	60 AS 60 T 60 TT	1711VT 1711VP	233 - MSD 233 - VTS 233 - SD	233 - VM 233 - V 233 - V	53 - VM 53 - VTS 53 - VM
Universal	723	724 727	0611 V	0612 VC 0613 VC 0614 VC		0711 V	V 420		37
EBW	782	776 778	300	304					
McDonald	245	268 A 267 A							
CNI		613 615	611 DB	611 VR			119		
Emco-Wheaton	A 20	A 30	A 76	A 99	F523	F 77	A79 Series	562291 562016 or	A-75
Andrews ^{1/}	TF	54 AG		400 DC-L	56 TFR				
Evertite		97 A			99 C				
York-Serv, Inc.		101 102							

^{1/} Now owned by Dixon Valve & Coupling Company.

EXHIBIT 2

Fittings Approved For Use On The Coaxial Stage I Vapor Recovery System

Fittings Required For All Coaxial Stage I Vapor Recovery Systems			Additional Fittings Required For Coaxial Stage I Vapor Recovery Systems with Overfill Protection		
Legend No.	⑦ + ⑧	⑨	⑩ + ⑪	⑩	⑪
Manufacturer	Coaxial Poppeted Fill Tube Assembly with Adapter	Coaxial Elbow	Extractor Assembly With Float Vent Valve	Extractor Assembly	Float Vent Valve
OPW	68-TCP	60 TC 60 TTC	233-MSD 233-VTS	233-VM	53-VM 53-VTS
Emco Wheaton	4" Tube A88-001 3" Tube A88-003	F 298	A79-002 A79-003 A79-004	562290 562016 or	A 75
EBW	783-215				
Universal Valve Co.			V-420		37
CNI			119		

EXHIBIT 3

Fittings Approved For All Stage I Vapor Recovery Systems

Legend No.	(12)	(13)		
Manufacturer	Pipe ^{1/} Cap	Fill Caps		Pressure Vacuum Relief Valve
		Top Seal	Side Seal	
OPW	116	634 TT	62 62 TT	95 UTE
Universal		731 733	727 732 734	
EBW		777	775	
McDonald		268 C	267 C	
CNI		64	32 33	
Emco Wheaton	A584	A 39 A 97		
Andrews ^{2/}		400 FPC 54 LC		
Varec				2010-811
Hazlett				H-PVB-1

^{1/} Required when a Two Point System is converted to a Coaxial System with overfill protection.

^{2/} Now owned by Dixon Valve & Coupling Company.

State of California

AIR RESOURCES BOARD

EXECUTIVE ORDER G-70-191-AA

**Relating to Language Correction in
Existing Executive Order G-70-191**

Healy Systems, Inc.

WHEREAS, the California Air Resources Board ("the Board" or "CARB") has established, pursuant to California Health and Safety Code sections 39600, 39601 and 41954, certification procedures for systems designed for the control of gasoline vapor emissions during motor vehicle fueling operations (Phase II vapor recovery systems) in its "CP-201 Certification Procedure for Vapor Recovery Systems of Dispensing Facilities" (the "Certification Procedures") as last amended June 1, 2001, incorporated by reference into Title 17, California Code of Regulations, Section 94011;

WHEREAS, the Board has established, pursuant to California Health and Safety Code sections 39600, 39601 and 41954, test procedures for determining the compliance of Phase II vapor recovery systems with emission standards in TP-201.1 through TP-201.6 ("the Test Procedures") last amended February 1, 2001, incorporated by reference into Title 17, California Code of Regulations, Section 94011;

WHEREAS, on August 8, 1999, the Board issued Executive Order G-70-191 for the Healy/Franklin Electric VP-1000 Vapor Pump with the Healy Model 600 Vapor Recovery Nozzle (Healy/Franklin System) Healy Model 600 ORVR/800 Nozzle with the Healy/Franklin Electric VP-1000 Vapor Pump (Healy ORVR Phase II Vapor Recovery System) pursuant to the Certification and Test Procedures;

WHEREAS, Executive Order G-70-191 did not correctly describe the Power Level Controls for the Healy/Franklin Electric VP-1000 vapor pump. The language has been modified to accurately reflect the operational characteristics of the Healy/Franklin Electric VP-1000 vapor pump. A nozzle vapor valve verification test procedure and vapor pump operational verification language has been added. Additional language regarding the use of "low-point" condensate traps in the vapor return lines and the use of above ground manifolding of existing station vapor plumbing, increasing the maximum hose length from 13 to 15 ft has also been added;

WHEREAS, these changes and additions in the language to Healy ORVR Phase II Vapor Recovery System Executive Order have been evaluated pursuant to the Board's Certification Procedure and are clarifying changes;

WHEREAS, Sections 15 and 17 of the Certification Procedures provides that the Executive Officer shall issue an order of certification if he or she determines that the vapor recovery system conforms to all of the requirements set forth in Sections 1 through 13 of the Certification Procedures;

WHEREAS, Section 4.7 of the Certification Procedures provides that Phase II systems must be capable of fueling any motor vehicle that may be fueled at service stations not equipped with vapor recovery systems;

WHEREAS, Sections 15 and 17 of the Certification Procedures provide that the Executive Officer may condition the certification of any system;

WHEREAS, I, Michael P. Kenny, Air Resources Board Executive Officer, find that the Healy ORVR Phase II Vapor Recovery System, conforms with all the requirements set forth in the Certification Procedures, and results in a vapor recovery system which is at least 95 percent effective for attendant and/or self-serve use at gasoline service stations, when used in compliance with this Order and when used in conjunction with a Phase I vapor recovery system, which has been certified by the Board and meets the requirements contained in Exhibit 2 of this Order.

NOW, THEREFORE, IT IS HEREBY ORDERED that the Healy ORVR Phase II Vapor Recovery System is certified to be at least 95 percent effective in attended and/or self-service mode, when used with a CARB-certified Phase I system, as specified in Exhibits 1 and 2 of this Order. **Compatibility of this system with onboard vapor refueling vapor recovery (ORVR) systems was verified, but fugitive emissions, which may occur when the underground storage tanks are under positive pressure have not been quantified and were not included in the calculation of system effectiveness.** Exhibit 1 contains a list of the equipment certified for use with the Healy ORVR Phase II Vapor Recovery System. Exhibit 2 contains installation and performance specifications for the system. Exhibit 3 contains a procedure for verifying the dispensing rate.

IT IS FURTHER ORDERED that the dispensing rate for installations of the Healy ORVR Phase II Vapor Recovery System shall not exceed ten (10.0) gallons per minute under any condition. This is consistent with the flow-rate limitation imposed by United States Environmental Protection Agency as specified in the Federal Register, Volume 58, Number 55, page 16019. The dispensing rate shall be verified as specified in Exhibit 3.

IT IS FURTHER ORDERED that the following requirements are made a condition of certification: The Healy ORVR Phase II Vapor Recovery System shall be installed only in facilities which are capable of demonstrating ongoing compliance with the vapor integrity requirements as specified in the most current version of TP-201.3. The owner or operator of the installation shall conduct, and pass, a Static Pressure Decay test as specified in the most current version of TP-201.3, no later than 60 days after startup

Appendix B

CARB Executive Order G-70-191-AA

**Related to Language Correction in
Existing Executive Order G-70-191**

Healy Systems, Inc.

and

CARB Approval Order 06-02

and at least once in each twelve month period. The owner or operator of the installation shall conduct, and pass, an Air-to-Liquid Ratio test as specified in TP-201.5 no later than 60 days after startup and at least once in each twelve month period thereafter. The test results shall be made available to the local air pollution control or air quality management district upon request within fifteen days after the tests are conducted, or within fifteen days of the request. Alternative test procedures may be used if determined by the Executive Officer, in writing, to yield comparable results.

IT IS FURTHER ORDERED that the Healy ORVR Phase II Vapor Recovery System, as installed, shall comply with the procedures and performance standards that the test installation was required to meet during certification testing. If, in the judgment of the Executive Officer, a significant fraction of installations fails to meet the specifications of this certification, or if a significant portion of the vehicle population is found to have configurations which significantly impair the system's collection efficiency, the certification itself may be subject to modification, suspension or revocation.

IT IS FURTHER ORDERED that compliance with the certification requirements and rules and regulations of the Division of Measurement Standards of the Department of Food and Agriculture, the State Fire Marshal's Office, and the Division of Occupational Safety and Health of the Department of Industrial Relations are made a condition of this certification.

IT IS FURTHER ORDERED that the Healy ORVR Phase II Vapor Recovery System shall, at a minimum, be operated in accordance with the manufacturer's recommended maintenance intervals and shall use the manufacturer's recommended operation, installation, and maintenance procedures.

IT IS FURTHER ORDERED that the Healy Model 600 ORVR/800 nozzles shall be 100 percent performance checked at the factory, including checks of the integrity of the vapor and liquid path, as specified in Exhibit 2 of this Order, and of the proper functioning of all automatic shut-off mechanisms.

IT IS FURTHER ORDERED that each Healy/Franklin Electric VP-1000 Vapor Pump shall be adjusted and 100-percent performance checked at the factory, including verification that the pump performance is within the range specified in Exhibit 2 of this Order.

IT IS FURTHER ORDERED that the Healy ORVR Phase II Vapor Recovery System shall be performance tested during installation for ability to dispense gasoline and collect vapors without difficulty, in the presence of the station manager or other responsible individual. Healy Systems shall provide, to the station owner, operator or designee, CARB-approved copies of the installation and maintenance manuals for the Healy ORVR Phase II Vapor Recovery System. Healy Systems or a factory authorized representative, shall provide to the station manager or other responsible individual, instructions in the proper use of the Healy ORVR Phase II Vapor Recovery System, its

repair and maintenance schedules, and locations where system and/or component replacements can be readily obtained. Copies of this Executive Order and installation and maintenance manuals for the Healy ORVR Phase II Vapor Recovery System shall be stored at the facility. Revisions to the manual are subject to approval by CARB.

IT IS FURTHER ORDERED that the Healy ORVR Phase II Vapor Recovery System, shall be warranted by Healy Systems, in writing, for at least one year, to the ultimate purchaser and each subsequent purchaser, that the vapor recovery system is designed, built and equipped so as to conform, at the time of original installation or sale, with the applicable regulations and is free from defects in materials and workmanship which would cause the vapor recovery system to fail to conform with applicable regulations. Healy Systems shall provide copies of the manufacturer's warranty for the Healy ORVR Phase II Vapor Recovery System, to the station manager, owner or operator. Hoses, nozzles and breakaway couplings shall be warranted to the ultimate purchaser as specified above for at least one year, or for the expected useful life, whichever is longer.

IT IS FURTHER ORDERED that any alteration of the equipment, parts, design, or operation of the systems certified hereby is prohibited, and deemed inconsistent with this certification, unless such alteration has been approved by the Executive Officer or his or her designee.

IT IS FURTHER ORDERED that, upon the adoption of revised standards, an installed Healy ORVR Phase II Vapor Recovery System may continue to be used as provided in Certification Procedure CP-201, pursuant to California Health and Safety Code section 41956.1, which provides that whenever the Board revises performance or certification standards, any system or any system components certified under procedures in effect prior to the adoption of revised standards and installed prior to the effective date of the revised standards may continue to be used in gasoline marketing operations for a period of four years after the effective date of the revised standards, provided that all necessary repair and replacement parts or components shall be certified.

IT IS FURTHER ORDERED that the certification of the Healy ORVR Phase II Vapor Recovery System is valid through July 31, 2005, or as otherwise provided under state law and regulations.

Executed at Sacramento, California, this 30 day of July, 2001.



Michael P. Kenny
Executive Officer

EXECUTIVE ORDER G-70-191-AA

EXHIBIT 1

EQUIPMENT LIST

<u>Component</u>	<u>Manufacturer/Model</u>	<u>State Fire Marshal Identification Number</u>
Nozzles	Model 600 ORVR / 800 (with ORVR modulating valve and vapor valve) (Exhibit 2 Fig. 2B-1)	005:027:025
Vapor Pumps (Collection Unit)	Healy/Franklin Electric Model VP-1000 Vapor Pump (Exhibit 2, Figure 2)	005:027:014
Inverted Coaxial Hoses	Healy Model 75 Series (3/4" I. D.)	005:027:003
	Healy Model 88 Series (7/8" I. D.)	005:027:004 005:027:005
Hose Adapters	Healy Model CX6-A CX6-VV1A CX6-VV2A CX6-VV3A CX6-TCSVVA CX6-DWVVA CX6-GA CX6-DA CX6-UA	005:027:019

Note: The "A" indicates that no valve is provided in the fitting because the vapor valve is integrated into the nozzle.

Non "A" version hose adapters are also approved for use with this system.

**HEALY SYSTEMS
DISPENSER VAPOR
RETROFIT KITS
(CONVERTS NON-
VAPOR READY
DISPENSERS TO
VAPOR READY)**

Z008 (standard low profile dual hose dispensers)
Z009 (standard low profile single hose dispensers)
Z044 (high profile six hose dispensers)
Z046 (high profile four hose dispensers)
Z047 (high profile uni (two) hose dispensers)

OR

Any dispenser manufacturers vapor kit that converts a non vapor ready dispenser to balance vapor ready.

<u>Component</u>	<u>State Fire Marshal Manufacturer/Model</u>	<u>Identification Number</u>
Breakaway Couplings	Healy Model 8701VV OR Healy Model 8701 which has been upgraded with a Healy Model 715V (vapor valve kit) and labeled as such.	005:027:016
Flow Control Units	Healy Model 1301 or 1302	005:027:020
Pressure/Vacuum Valves (settings as specified below)		
	OPW 523LP, 523LPS	005:008:051
	Hazlett H-PVB-1 Gold label	005:017:004
	Morrison Brothers 749CRB0600 AV	005:041:001
	Husky 4620	005:021:015
	OPW 523V	005:008:058
	EBW 802-308, 802-309	005:034:006
	OR Any CARB-certified valve with the following pressure and vacuum settings, in inches water column (wc): <u>Pressure</u> : three plus or minus one-half inches (3.0 ± 0.5") water column. <u>Vacuum</u> : eight plus or minus two inches (8 ± 2") water column.	
Phase I Product Adaptors	Bravo B-70 B Swivel OPW 61SA-1000 Rotatable OPW 633LC Lock Clamp CNI Locking Clamp, Part # 613BC OR Any CARB-certified device which prevents loosening or overtightening of the Phase I product adaptor. <i>(Note: Adaptors which can <u>not</u> be prevented from loosening or overtightening may only be used until December 31, 2003.)</i>	
Phase I Vapor Adaptors	CNI Locking Clamp, Part # 611DB4AC Bravo Swivel Vapor Adapter, B-75 OPW 633LC Lock Clamp Any CARB-certified device which prevents loosening or overtightening of the Phase I vapor adaptor <i>(Note: Adaptors which can <u>not</u> be prevented from loosening or overtightening may only be used until July 1, 2004.)</i>	

EXECUTIVE ORDER G-70-191-AA

EXHIBIT 2

SPECIFICATIONS FOR THE HEALY ORVR PHASE II VAPOR RECOVERY SYSTEM

Nozzle

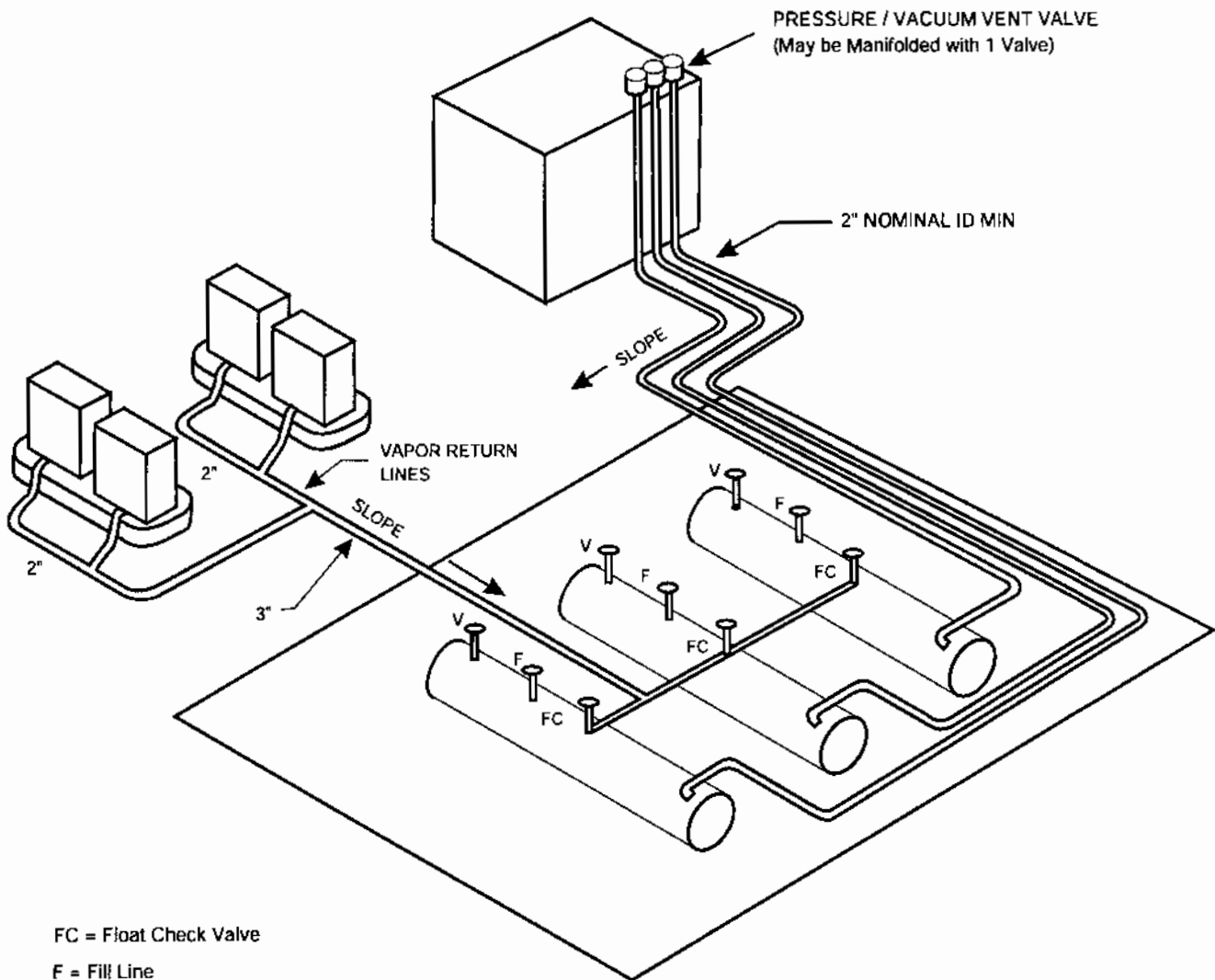
1. A vapor collection boot shall be installed on the nozzle at the base of the spout, as shown in Exhibit 2, Figure 2B-1. Any nozzle with a vapor collection boot which is missing, or which has one half of the mini-boot faceplate or greater missing is defective and shall be immediately removed from service.
2. The Healy Model 600 ORVR / 800 nozzle has an integral vapor valve which prevents the loss of vapor from the underground storage tanks, ensures proper operation of the system and prevents the ingestion of air into the system. Any nozzle with a defective vapor valve shall be immediately removed from service. The integrity of the system shall be restored by replacing the nozzle or otherwise closing the vapor path as soon as practicable.
3. Nozzles shall be 100 percent performance checked at the factory, including checks of all shutoff mechanisms and of the integrity of the vapor path. The maximum allowable leak rate for the nozzle vapor path shall not exceed the following:
 - 0.038 CFH at a pressure of two inches water column (2" WC), and
 - CFH at a vacuum of eighty-three inches water column (approx. 3 psi).
4. Verification of the integrity of the vapor valve can be performed on installed nozzles by use of the following test.
 - a. Seal all nozzles on a dispenser in plastic bags, using tape or other means to secure the bag around the base of the nozzle. Any plastic bag large enough to enclose the nozzles and having a thickness of no greater than 2 mils can be used. 12 " X 20" X 2mil. thick bags are available in California from the California Air Resources Board by calling (800) 952-5588.
 - b. Initialize the dispenser for fueling. **Do not dispense any fuel.** The Healy/Franklin VP-1000 vane pump engages upon dispenser activation and provides approximately 3 psi vacuum to all nozzle points on the dispenser simultaneously.
 - c. With the dispenser initialized, observe all bagged nozzles for approximately 30 seconds. Any nozzle where the bag can be seen visually collapsing has a defective vapor valve and shall be removed from service immediately.
 - d. Disengage the dispenser, remove the bags from all of the nozzles and re-hang the nozzles.

Executive Order G-70-191-AA

Exhibit 2

Figure 2A-1

Typical Installation of the
Healy ORVR Phase II Vapor Recovery System



FC = Float Check Valve
F = Fill Line
V = Phase I Vapor Recovery

Note: 1. All Vapor/Vent Lines are 3" Nominal ID Minimum
Except as Noted in Exhibit 2 under Vapor Recovery Piping Configurations

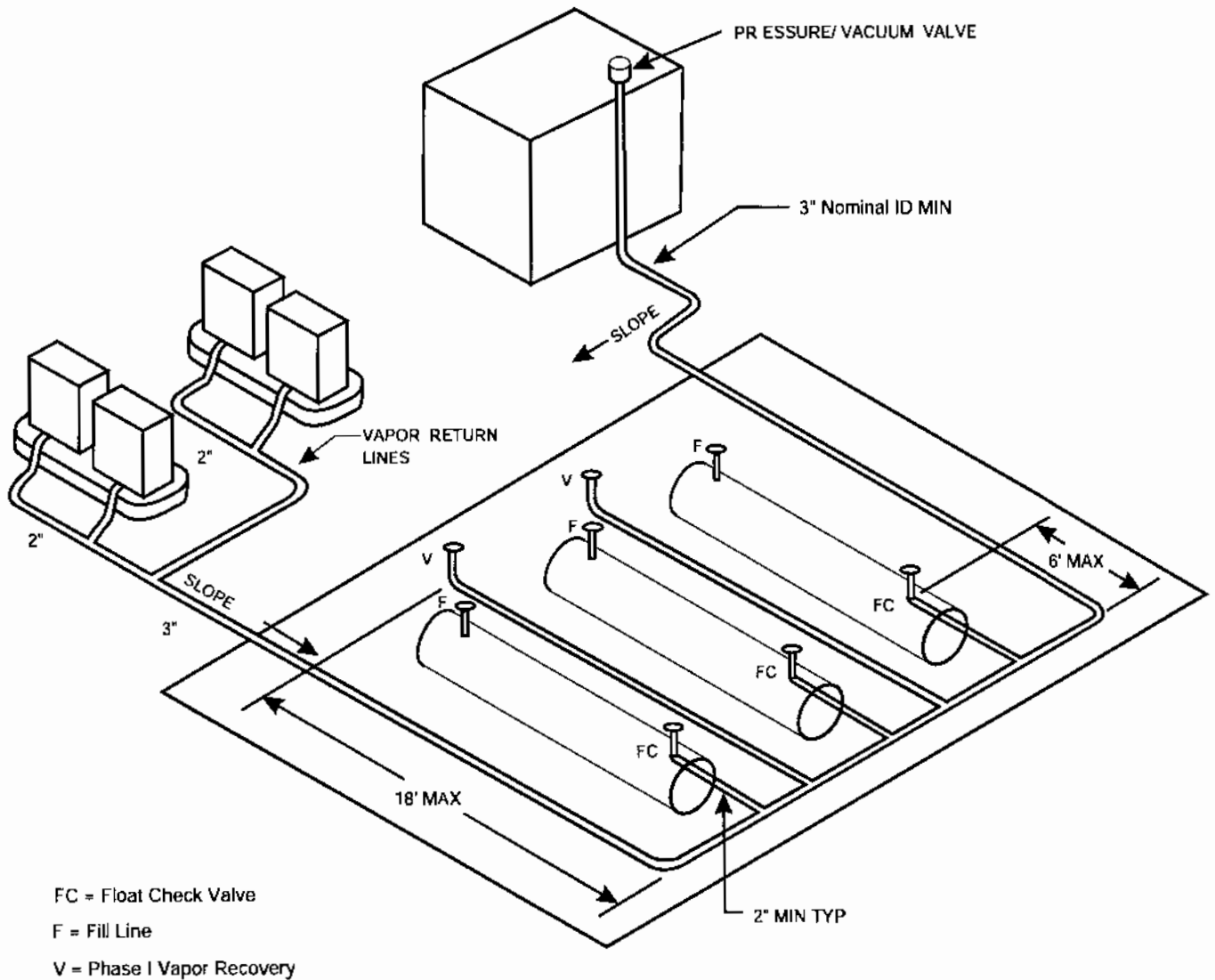
2. Slope: 1/8" per foot Min.
1/4" per Foot Preferred

Executive Order G-70-191-AA

Exhibit 2

Figure 2A-2

Typical Installation of the
Healy ORVR Phase II Vapor Recovery System



Note: 1. All Vapor/Vent Lines are 3" Nominal ID Minimum
Except as Noted in Exhibit 2 under Vapor Recovery Piping Configurations

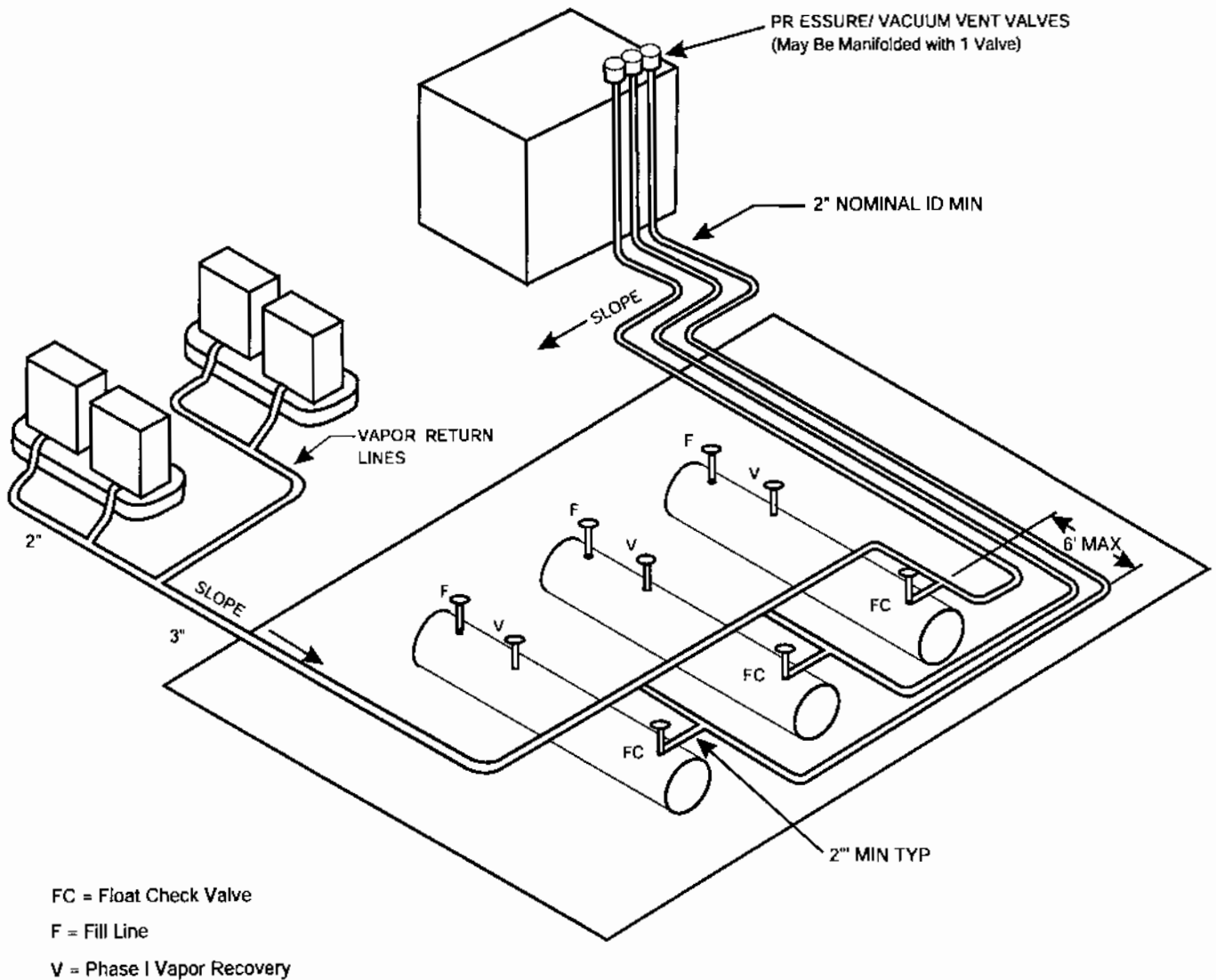
2. Slope: 1/8" per foot Min.
1/4" per Foot Preferred

Executive Order G-70-191-AA

Exhibit 2

Figure 2A-3

Typical Installation of the
Healy ORVR Phase II Vapor Recovery System



FC = Float Check Valve

F = Fill Line

V = Phase I Vapor Recovery

Note: 1. All Vapor/Vent Lines are 3" Nominal ID Minimum
Except as Noted in Exhibit 2 under Vapor Recovery Piping Configurations

2. Slope: 1/8" per foot Min.

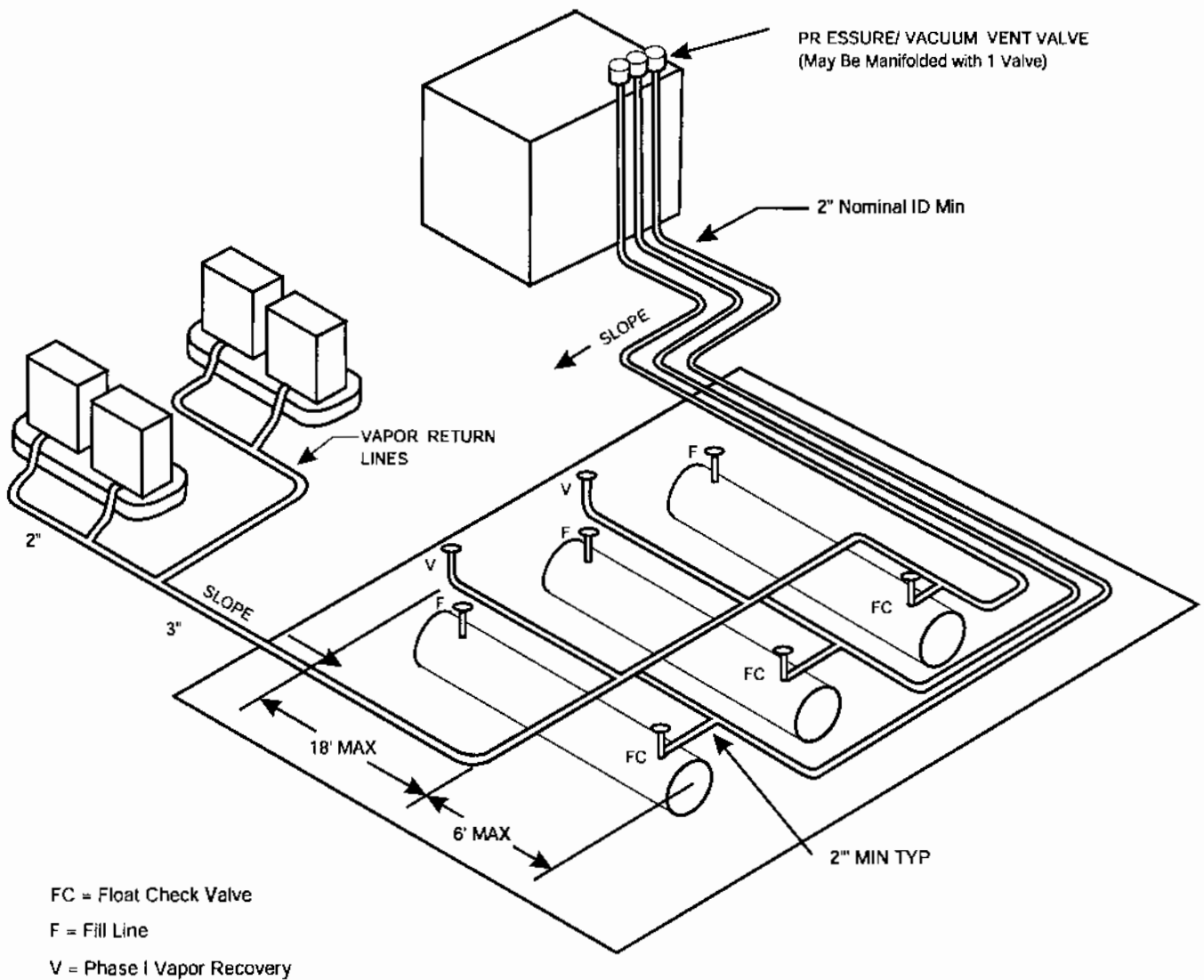
1/4" per Foot Preferred

Executive Order G-70-191-AA

Exhibit 2

Figure 2A-4

Typical Installation of the
Healy ORVR Phase II Vapor Recovery System



Note: 1. All Vapor/Vent Lines are 3" Nominal ID Minimum
Except as Noted in Exhibit 2 under Vapor Recovery Piping Configurations

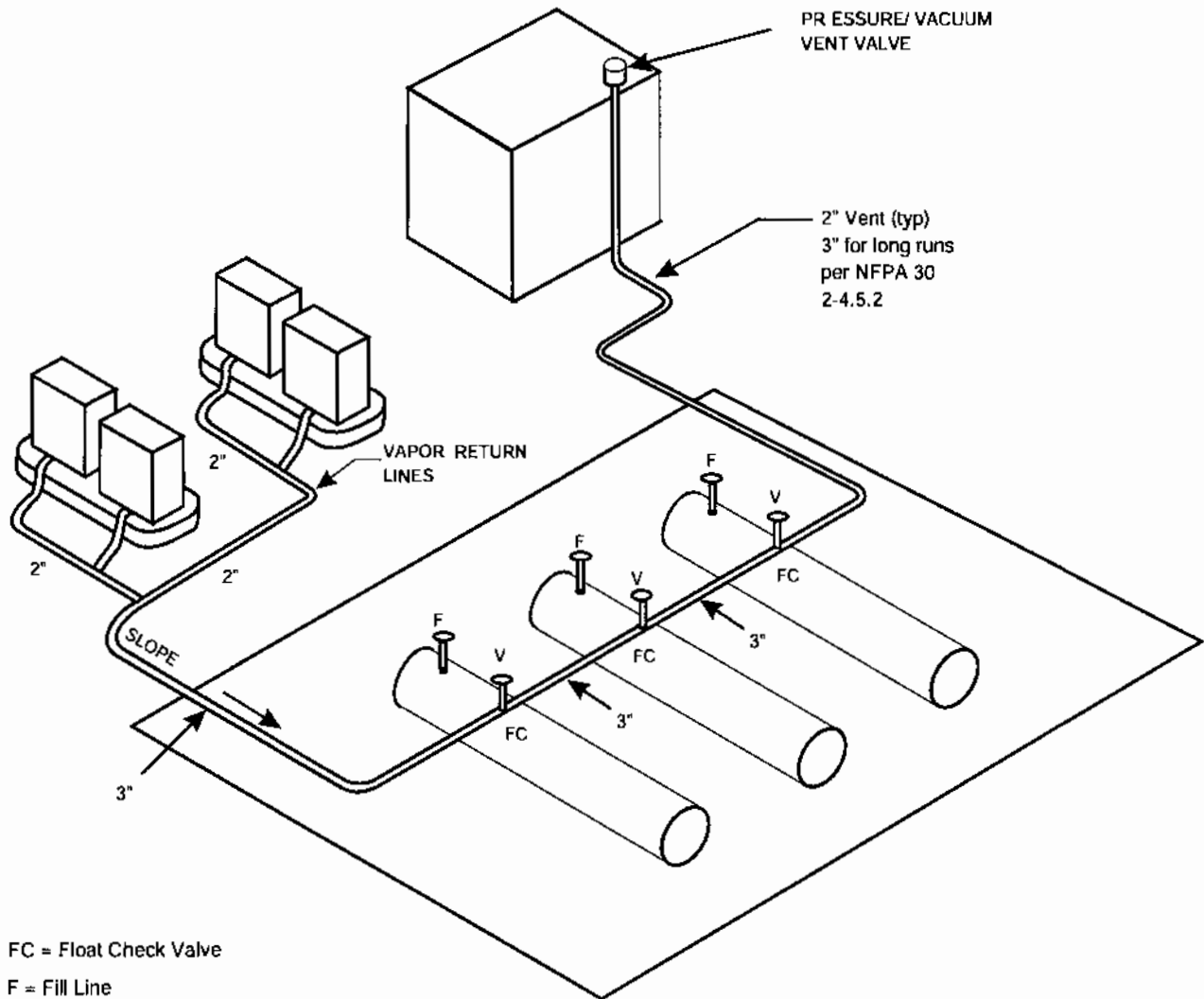
2. Slope: 1/8" per foot Min.
1/4" per Foot Preferred

Executive Order G-70-191-AA

Exhibit 2

Figure 2A-5

Typical Installation of the
Healy ORVR Phase II Vapor Recovery System



FC = Float Check Valve

F = Fill Line

V = Phase I Vapor Recovery

Note: 1. All Vapor/Vent Lines are 3" Nominal ID Minimum
Except as Noted in Exhibit 2 under Vapor Recovery Piping Configurations

2. Slope: 1/8" per foot Min.
1/4" per Foot Preferred

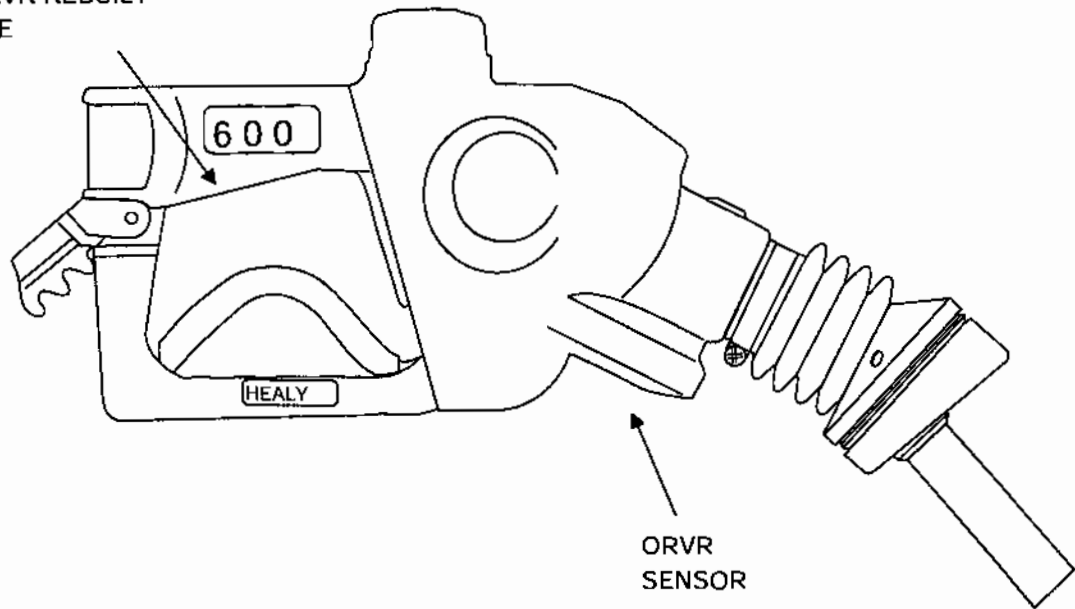
Executive Order G-70-191-AA

Healy ORVR Phase II Vapor Recovery System

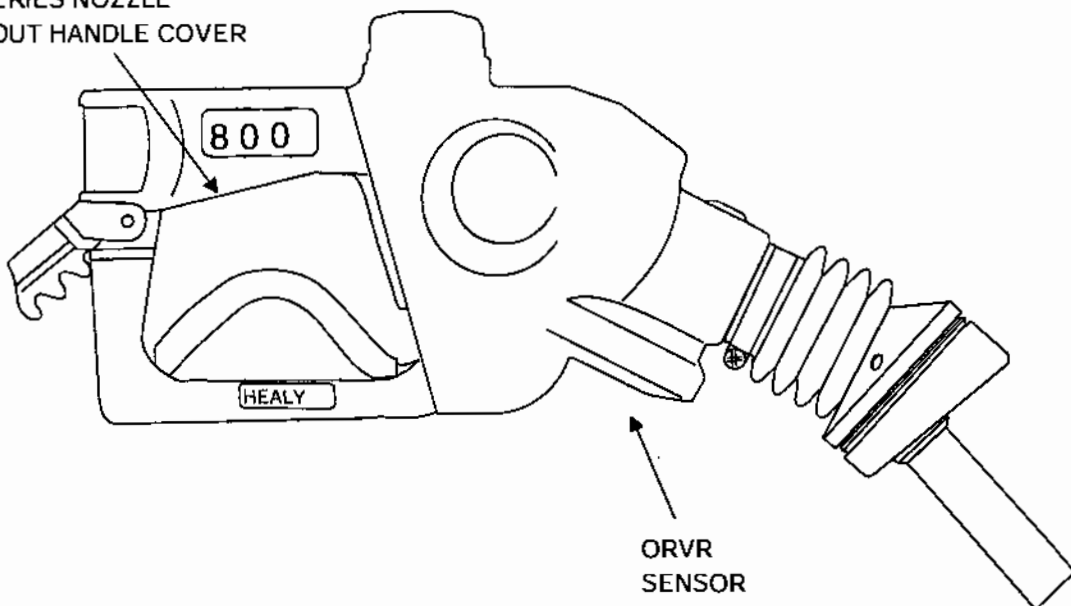
Exhibit 2

Figure 2B-1

600 ORVR REBUILT
NOZZLE



800 SERIES NOZZLE
WITHOUT HANDLE COVER

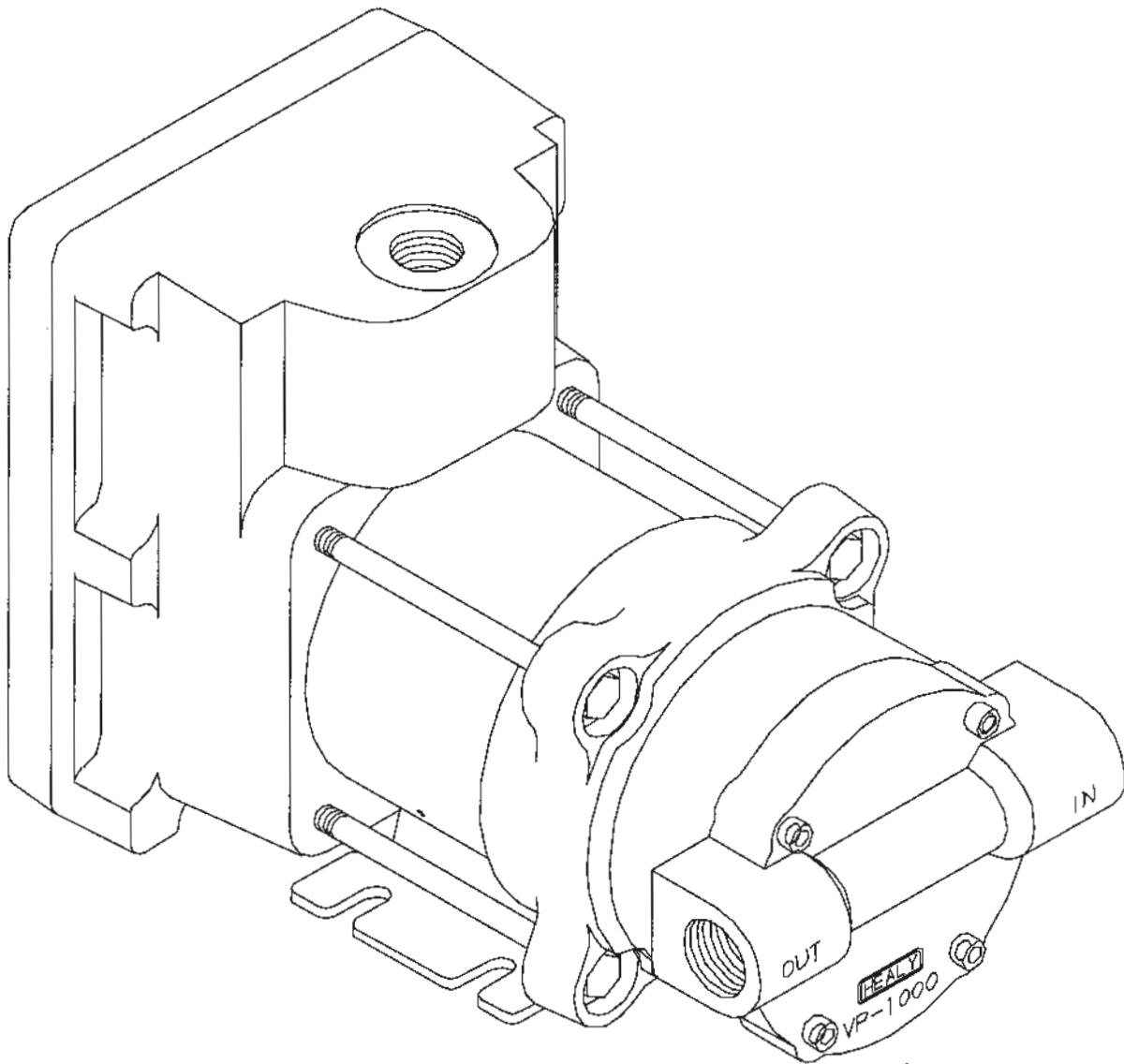


Executive Order G-70-191-AA

Exhibit 2

Figure 2B-2

Healy/Franklin Electric VP1000 Vapor Pump

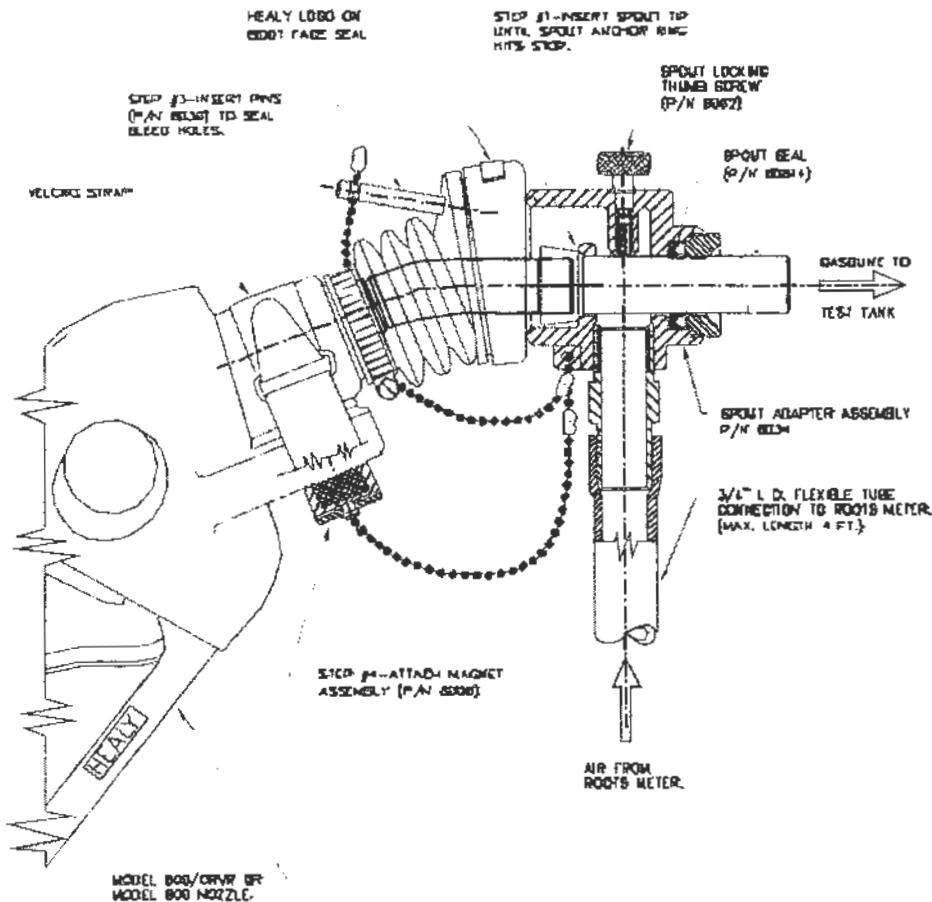


Executive Order G-70-191-AA

Exhibit 2

Figure 2C-1

Healy A/L Adapter For 600 ORVR and 800 Nozzle
Healy Part # 8034



- TEST PROCEDURE**
- STEP #1 - SLIDE A/L ADAPTER (P/N 8034) OVER SPOUT TIP & COMPRESS BOOT UNTIL SPOUT ANCHOR RING CONTACTS STOP IN A/L ADAPTER.
 - STEP #2 - HOLD A/L ADAPTER IN CONTACT WITH SPOUT ANCHOR RING & HAND TIGHTEN THUMB SCREW TO SECURE A/L ADAPTER. (SEE NOTE #1)
 - STEP #3 - INSERT PINS TO SEAL 2 BLEED HOLES IN BOOT DIRECTLY OPPOSITE FACE SEAL ASSEMBLY.
 - STEP #4 - HOLD MAGNET ASSEMBLY AGAINST UNTIL SOUFF GUARD DIRECTLY BELOW ORVR SENSOR HOUSING & SECURE IN PLACE WITH VELCRO STRAP AS SHOWN. (SEE NOTE #2)
 - STEP #5 - PROCEED WITH A/L TEST.
 - STEP #6 - REMOVE SEAL PINS & MAGNET ASSEMBLY; LOOSEN THUMB SCREW & REMOVE A/L ADAPTER.

- NOTES**
- 1 - THE THUMB SCREW & THE HEALY LOGO ON TOP OF THE NOZZLE BOOT FACE SEAL MUST BE IN VERTICAL ALIGNMENT TO AVOID FUELING AN UNLOADED VEHICLE.
 - 2 - A VACUUM LEVEL OF 8.1" H.G. MAY ACTIVATE THE ORVR SENSOR CAUSING A SUBSTANTIAL DECREASE (ERROR) IN THE A/L RATIO. THE MAGNET LOCKS OUT THE ORVR SENSOR TO AVOID FALSE RESULTS IN A/L TESTING OF ORVR NOZZLES.

EXECUTIVE ORDER G-70-191-AA

EXHIBIT 3

**TEN GALLON PER MINUTE LIMITATION
COMPLIANCE VERIFICATION PROCEDURE**

Compliance with the 10 gallon per minute flowrate limitation shall be determined with the following methodology. It is recommended that the maximum dispensing rate through each nozzle/hose assembly be verified. Maximum dispensing rates are achieved with no other dispensing occurring from the same submersible turbine pump (STP). Dispensing rates determined while conducting TP-201.5 are acceptable for verifying compliance with the 10 gallon per minute flowrate limitation.

1) The facility uses identical models of hoses, nozzles, and breakaways:

Dispense gas into a vehicle or approved container. Dispensing shall be conducted in the "hand-held, wide-open" mode. Using a stopwatch accurate to at least 0.2 seconds, begin timing the dispensing rate after at least one gallon has been dispensed. This one gallon buffer is necessary due to the "slow-start" nature of some dispensers. Determine the time required to dispense 2, 3, 4, or 5 gallons of gasoline. The facility shall be deemed in compliance with the 10 gallon per minute limitations if the elapsed time meets, or exceeds, the times shown in Table 1. If the dispensing rate exceeds the allowable limit, a CARB-certified flow limiting device shall be installed.

2) The facility uses different models of hoses, nozzles, or breakaways

Due to potential differences in pressure drops through the various components, each of the nozzle/hose assemblies shall be tested for maximum dispensing rates. Using the same criteria as above, determine the maximum dispensing rate through each nozzle/hose assembly. If the maximum dispensing rate exceeds the 10 gpm limit, a CARB-certified flow limiting device shall be installed.

**Table 1
Verification of 10 gpm**

Product Dispensed, gallons	Minimum Allowable Time, seconds
2.0	11.8
3.0	17.7
4.0	23.6
5.0	29.5

Note: The times have been corrected to allow for the accuracy of the measurement.

Dispensing Rate

The dispensing rate for installations of this system shall not exceed 10.0 gallons per minute at any time. This shall be determined as specified in Exhibit 3 or as specified in TP-201.5 or any alternative test method approved in writing by the Executive Officer.

Inverted Coaxial Hoses

1. The maximum length of the hose assembly shall be 15 feet measured from the dispenser outlet casting to the base of the nozzle.
2. The length of hose, which may be in contact with the island and/or ground when the nozzle is properly mounted on the dispenser, is limited to six inches (6") per loop.

Breakaway Couplings

Breakaway couplings are optional but, if installed, only CARB-certified breakaways with a valve, which closes the vapor path when separated, may be used.

Healy ORVR Phase II Vapor Recovery System

1. The Healy ORVR Phase II Vapor Recovery System shall consist of an integrated vapor recovery unit made up of an electronic (computerized) control unit and a one-eighth (1/8) hp alternating current electric motor that drives a variable speed rotary vane pump. The VP-1000 Vapor Recovery Vane Pump has been sized to satisfy the recovery needs of one dispenser, with two hoses, pumping either individually or simultaneously. Healy Systems supplies a unique regulation valve, built into the faceplate of the pump assembly, to assure that proper levels of vacuum are maintained. The actual vapor recovery rate is determined by a valve in the nozzle which senses product flow.

The A/L ratio of the system shall be 1.10 plus or minus 0.10 (1.00 to 1.20). Any fueling point not capable of demonstrating compliance with this performance standard shall be deemed defective and removed from service. The A/L ratio shall be determined by using the CARB-approved procedure TP-201.5. Note: A CARB certified spout adapter / sleeve unique to the Healy 600 ORVR / 800 nozzle must be used in order to obtain accurate results. See Exhibit 2 Figure 2C-1. Alternative test procedures may be used if they are determined by the Executive Officer, in writing, to yield comparable results.

NOTE: Test Procedure TP-201.5 returns air rather than vapor to the storage tank, and normally causes an increase in storage tank pressure which may result in vent emissions. This is a temporary condition due to the test and should not be considered an indication of malfunction or noncompliance.

2. The Healy ORVR Phase II Vapor Recovery System with the Healy/Franklin Electric VP 1000 Vapor Pump, (Exhibit 2 Figure 2B-2) shall have the following electronic protective features:
 - High Power Level Control. The system shall automatically sense conditions that cause high power levels and shall shut down. Conditions causing high power levels include the following: locked rotor condition of the motor, shorted motor windings, fluid in pump cavity for more time than required to clear a blockage and pump overload conditions. If any of these conditions exist, a signal shall be sent to the VP1000 vane pump interface module located inside the dispenser. The system shall then restart automatically. This "shut down send signal wait-restart" cycle will occur three times. After the third cycle failure, it shall not restart automatically. Instead, an error signal is sent to the interface module, (High Power Level Failure), which will then disable the entire dispenser from dispensing product.
 - Low Power Level Control. The system shall automatically sense conditions that cause low power levels and shall shut down. Conditions causing low power levels include the following: broken rotor, free running motor shaft-no load conditions. If any of these conditions exist, a signal shall be sent to the VP1000 vane pump interface module located inside the dispenser. The system shall then restart automatically. This "shut down send signal wait-restart" cycle will occur three times. After the third cycle failure it shall not restart automatically. Instead, an error signal is sent to the interface module, (Low Power Level Failure), which will then disable the entire dispenser from dispensing product.
 - Verification that the Healy/Franklin VP1000 vane pump is operating correctly can be determined by conducting A/L testing as specified in TP-201.5 or an alternative test method approved in writing by the Executive Officer. Any dispenser where a 0.0 A/L is measured on all fueling points on both sides of the dispenser indicates a failure of the electronic shut-down features of the VP-1000 vane pump. A measured A/L of 0.0 on only one fueling point on one side of a dispenser may be due to hanging hardware problems and may not be indicative of a vane pump problem.

Dispenser Specifications

1. The Healy ORVR Phase II Vapor Recovery System can be installed on any CARB-certified balance vapor ready dispenser. Conversion kits as specified in Exhibit 1 can be used to retrofit non-vapor-ready dispensers. All dispensers must also comply with the following:
 - a) Electronically compatible with the Healy ORVR Phase II Vapor Recovery System with the Healy/Franklin Electric VP 1000 Vapor Pump, which must be capable of displaying the electronic protective features as specified in this Exhibit.

- b) Tested for compliance with air to liquid ratio limits contained in this Exhibit. The test shall be conducted in accordance with TP 201.5, or an alternative test method approved in writing by the Executive Officer.

Pressure/Vacuum Valves for Storage Tank Vents

1. At least one pressure/vacuum (P/V) valve shall be installed on tank vents. Manifolding of vent lines to minimize the number of P/V valves and potential leak sources is recommended, provided the manifold is installed at a height not less than 12 feet above the driveway surface used for Phase I tank truck filling operations. At least one P/V valve shall be installed on manifolded vents. The P/V valve shall be a CARB-certified valve as specified in Exhibit 1. The outlets shall vent upward and be located to eliminate the possibility of vapor accumulating or traveling to a source of ignition or entering adjacent buildings.
2. The P/V valve is designed to open at a pressure of approximately three inches water column (3" WC). Storage tank pressures which exceed 3" WC for more than a short time may indicate a malfunctioning pressure/vacuum vent valve.

Vapor Recovery Piping Configurations, (Figures 2A-1 - 2A-5)

Note: Figures 2A-1-2A-5 show general vapor plumbing piping layouts and are not to be used as specifications.

1. All vapor return and vent lines shall be a minimum 2" diameter from the dispensers to the first main manifold. All lines after the first manifold and back to the underground storage tanks shall be a minimum 3" diameter.

Exception: Smaller vapor lines are not recommended but if pre-existing, may be used providing the pressure drop criteria specified below are met.

2. The maximum allowable pressure drop through the system shall never exceed one-half inch (0.5") water column at 60 SCFH. The pressure drop shall be measured from the dispenser riser to the UST with pressure/vacuum valves installed and with the popped Phase I vapor connection open.
3. All vapor return and vent lines shall slope a minimum of 1/8" per linear foot. A slope of 1/4" per linear foot or more is recommended whenever feasible.

Exception: When it is not possible to achieve the necessary minimum slope from the dispenser risers back to the underground storage tanks due to the topography of a new site or due to upgrading of an existing site, low-point condensate traps or knock-out pots can be utilized as long as the following conditions are met:

- a. The condensate traps must be self-evacuating.
 - b. The entire system must remain vapor tight.
 - c. Access must be provided for inspection purposes. The condensate traps must be maintained in good working order.
 - d. The maximum pressure drop through the system with the condensate traps in place shall not exceed 0.5" WC at 60 SCFH.
4. All vapor return and vent piping shall be installed in accordance with the manufacturer's instructions and all applicable regulations.

5. No product shall be dispensed from any fueling point associated with a vapor line which is disconnected and open to the atmosphere. If vapor lines are manifolded, this includes all fueling points in the facility.
6. All vapor return and vent lines shall be installed in accordance with the manufacturer's instructions and all applicable regulations. The vapor return lines shall be manifolded below grade at the tanks using a minimum 3" diameter line.

Exception: For installations with a vapor return line directly to only one tank, and for which a manifold on the tank vents will be used to provide part of the vapor return path to other tanks, the vent manifold may be used as an alternative to the underground manifold only in existing installations where the vapor piping is already installed, and shall not be used in "new" installations where vapor piping is being installed. For installations with dedicated vapor piping directly to each tank, the vent manifold is approved for both new and existing installations and an additional tank manifold below grade is optional but not required.

7. The dispenser shall be connected to the riser with either flexible or rigid material which is listed for use with gasoline. The dispenser-to-riser connection shall be installed so that any liquid in the lines will drain toward the storage tank. The internal diameter of the connector, including all fittings, shall not be less than one-half inch (1/2").

Inverted Coaxial Hose Adapters

1. Inverted coaxial hose adapters shall be 100 percent performance checked at the factory to verify the integrity of the vapor path.

Underground Storage Tank (UST) Pressure

WARNING: Phase I fill caps should be opened with caution because the storage tank may be under pressure.

Phase I System

1. The Phase I system shall be a CARB-certified system which is in good working order and which demonstrates compliance with the static pressure decay test criteria as specified in the most current version of TP-201.3. Coaxial Phase I systems shall not be used with new installations of the Healy ORVR Phase II Vapor Recovery System. Replacement of storage tanks at existing facilities, or modifications which cause the installation of new or replacement Phase I vapor recovery equipment, are considered new installations with regard to this prohibition. An exception to this prohibition may be made for coaxial Phase I systems CARB-certified after January 1, 1994, as compatible for use with Phase II systems which require pressure/vacuum vent valves.

Where installation of the Healy ORVR Phase II Vapor Recovery System is made by retrofitting previously installed equipment, local districts may elect to allow existing coaxial Phase I systems to remain in use for a specifically identified period of time provided the following conditions are met:

- the existing coaxial Phase I system is a poppeted, CARB-certified system capable of demonstrating compliance with the static pressure decay test as specified above; and
 - installation of the Phase II system requires no modification of the UST(s) and/or connections.
2. Spill containment manholes which have drain valves shall demonstrate compliance with the static pressure decay criteria with the drain valves installed as in normal operation. Manholes with cover-actuated drain valves shall not be used. The local district may require the removal of drain valves provided an alternate method of draining the spill container is specified (i.e., a hand pump maintained at the facility and/or on the product delivery trucks).
3. Phase I deliveries shall be accomplished so as to ensure that there is at least one vapor connection between the cargo tank compartment headspace and the storage tank associated with the product delivery. There shall be no more than two product hoses used with one vapor hose connected, and no more than three product hoses used with two vapor hoses connected.
- the Phase I vapor return hose is connected to the delivery tank and to the delivery elbow before the elbow is connected to the facility storage tank;
 - the delivery tank is opened only after all vapor connections have been made, and is closed before connection of any vapor return hoses;
 - the existing coaxial Phase I equipment is in good working order and has demonstrated compliance with static pressure decay test criteria when tested with all fill caps removed; and
 - the vapor return hose is disconnected from the facility storage tank before it is disconnected from the delivery tank.
4. Storage tank vent pipes, manhole covers and spill containment bucket covers shall be maintained any color which minimizes solar gain and has a reflective effectiveness of 55% or greater. Reflectivity can be determined by visual comparison of the paint with paint color cards obtained from a paint manufacturer who uses the "Master Pallet Notation" to specify the paint color (i.e., 58YY 88/180 where the number in italics is the paint reflectivity). Example colors having a reflective ness of 55% or greater include yellow, light gray, aluminum, tan, red iron oxide, cream or pale blue, light green, glossy gray, light blue, light pink, light cream, white, silver, beige, tin plate or mirrored finish. Spill containment bucket covers that are color coded for product identification are exempted from this requirement.

Exception: Insulated manhole covers such as those manufactured out of a composite material and injected with foam insulation are exempt from the color requirement.

<u>Component</u>	<u>State Fire Marshal Manufacturer/Model</u>	<u>Identification Number</u>
Breakaway Couplings	Healy Model 8701VV OR Healy Model 8701 which has been upgraded with a Healy Model 715V (vapor valve kit) and labeled as such.	005:027:016
Flow Control Units	Healy Model 1301 or 1302	005:027:020

Pressure/Vacuum Valves
(settings as specified below)

OPW 523LP, 523LPS	005:008:051
Hazlett H-PVB-1 Gold label	005:017:004
Morrison Brothers 749CRB0600 AV	005:041:001
Husky 4620	005:021:015
OPW 523V	005:008:058
EBW 802-308, 802-309	005:034:006
OR	
Any CARB-certified valve with the following pressure and vacuum settings, in inches water column (wc):	
<u>Pressure</u> : three plus or minus one-half inches (3.0 ± 0.5") water column.	
<u>Vacuum</u> : eight plus or minus two inches (8 ± 2") water column.	

Phase I Product Adaptors

Bravo B-70 B Swivel
OPW 61SA-1000 Rotatable
OPW 633LC Lock Clamp
CNI Locking Clamp, Part # 613BC

OR

Any CARB-certified device which prevents loosening or overtightening of the Phase I product adaptor.
(Note: Adaptors which can not be prevented from loosening or overtightening may only be used until December 31, 2003.)

Phase I Vapor Adaptors

CNI Locking Clamp, Part # 611DB4AC
Bravo Swivel Vapor Adapter, B-75
OPW 633LC Lock Clamp

Any CARB-certified device which prevents loosening or overtightening of the Phase I vapor adaptor

(Note: Adaptors which can not be prevented from loosening or overtightening may only be used until July 1, 2004.)



Linda S. Adams
Secretary for
Environmental Protection

Air Resources Board

Robert F. Sawyer, Ph.D., Chair
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Sacramento, California 95812 • www.arb.ca.gov



Arnold Schwarzenegger
Governor

August 14, 2006

#06-02

Mr. Paul C. Bauer, Technical Services Manager
Healy Systems, Inc.
18 Hampshire Drive
Hudson, New Hampshire 03051

Dear Mr. Bauer:

Thank you for your letter of July 20, 2006, providing information that the Healy Model 900 Enhanced Vapor Recovery (EVR) nozzle is now commercially available.

The Healy Model 900 EVR nozzle was originally approved as the replacement nozzle for the Model 800 onboard refueling vapor recovery (ORVR) nozzle in my letter to you on May 5, 2005. However, in your letter of August 24, 2005, you informed me that the orders for EVR equipment overwhelmed your ability to supply the Model 900 nozzle. As a result of the back log of orders for the Model 900 nozzle as a replacement component, I made a determination under section 19 of CP-201, Certification Procedure for Vapor Recovery Systems at Gasoline Dispensing Facilities, that the Model 900 nozzle was not commercially available as a replacement component for the Model 800 nozzle for the Healy ORVR Phase II Vapor Recovery System certified by Executive Order G-70-191-AA. The Model 800 nozzle was then approved for new installations and as a replacement component for the Healy ORVR Phase II Vapor Recovery System since August 26, 2005.

In your July 20, 2006, letter Healy demonstrated to the satisfaction of Air Resources Board (ARB) staff that the Model 900 nozzles are now commercially available as replacements for the Model 800 nozzles. In particular, the Model 900 nozzle has been available to be shipped within two to three weeks of the receipt of an order since April, 2006.

The Model 900 nozzle, shown in Figure 1, has met the operative standards and specifications as certified on the Healy Phase II EVR system in Executive Orders VR-201-A and VR-202-A. ARB staff has also determined that the Model 900 nozzle is compatible with the Healy ORVR Phase II Vapor Recovery System.

Therefore, the Healy Model 900 nozzle is approved as the only nozzle that can be used in California as a replacement nozzle for the Healy ORVR Phase II Vapor Recovery System (Executive Order G-70-191-AA) on or after September 10, 2006. District inspectors will be able to determine that a Healy Model 800 nozzle installed at a

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our website: <http://www.arb.ca.gov>.

California Environmental Protection Agency

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August 14, 2006
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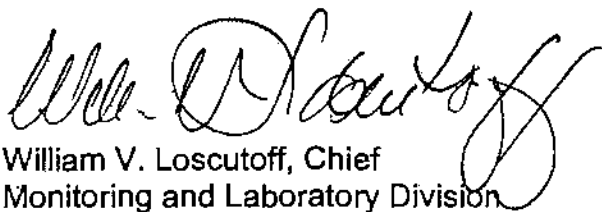
gasoline dispensing facility (GDF) is in compliance with this requirement by checking the Julian calendar date stamp on the nozzle. The drawing of the Model 900 nozzle in Figure 1 shows the serial number, including the date code. The Model 800 nozzle is date coded in the same manner as shown in Figure 1. If a Model 800 nozzle has a Julian date code of 3606 or earlier, signifying week 36 of the year 2006, that installation is compliant. The installation of a Model 800 nozzle with a date stamp after the 36th week of 2006 (3706 and later) is in violation of this amendment to Executive Order G-70-191-AA. The number "Z" denotes the sequential number of nozzles produced that week (see Figure 1). California distributors of vapor recovery equipment may continue to legally stock and sell Model 800 nozzles for sale outside of California.

Any Model 900 nozzle installed under Executive Order G-70-191-AA shall be subject to all the same testing requirements applicable to the Model 800 nozzle, as listed in Exhibit 2 of Executive Order G-70-191-AA and those sections of the Vapor Recovery Equipment Defects (VRED) list applicable to Executive Order G-70-191-AA. The April 12, 1996, version of TP-201.5 (A/L Testing) shall be used regardless of the model of nozzle installed on a GDF permitted under Executive Order G-70-191-AA. Test procedures determined to be equivalent to the 1996 version of TP-201.5 may be used with the approval of the district.

Lastly, the components listed in Executive Order G-70-191-AA and all approval letters pertaining to it may remain in use for the remainder of the useful life of these components or the allowable in-use period, as provided in Section 19.1 of CP-201, whichever is shorter.

If you have questions or need further information regarding this approval, please contact Paul Marzilli at (916) 445-7431 or via email at pmarzilli@arb.ca.gov or Pat Bennett at (916) 322-8959 or via email at pbennett@arb.ca.gov.

Sincerely,



William V. Loscutt, Chief
Monitoring and Laboratory Division

cc: See next page

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cc: Mr. Brian Auger
San Luis Obispo County Air Pollution Control District

Mr. Jim Swaney
San Joaquin Air Pollution Control District

Ms. Jeannette Lim
Bay Area Air Quality Management District

Figure 1
Model 900 Nozzle

