CP-201 ISD Appendix

1.   GENERAL REQUIREMENTS

    1.1   All gasoline dispensing facility (GDF) vapor recovery systems, unless specifically exempted, shall be equipped with an In-Station Diagnostic (ISD) system.

    1.2   All GDF vapor recovery systems shall be equipped with an ISD system or device that has the capability to automatically prohibit the dispensing of fuel and has the capability to automatically inform the station operator in the event of either a malfunction, failure, or degradation that substantially impairs, as defined below in Section 2, the effectiveness of the system.

    1.3   All ISD systems shall be equipped with an RS232 port to remotely access ISD status information using standardized software.

    1.4   The ISD manufacturer shall provide a means of testing and calibrating the sensors or devices installed on the GDF vapor recovery ISD system, including procedures for verifying that the ISD system operates properly. The means of testing and calibration shall be verified and subjected to failure mode testing during the certification process.

    1.5   Personnel trained and certified by the Executive Order certification holder, ISD manufacturers, or California Contractors State License Board shall test and calibrate the installed vapor recovery ISD system sensors or devices annually, at a minimum, with test equipment calibrated to National Institute of Standards and Technology-traceable standards. The minimum annual calibration frequency requirement may be waived and replaced with a frequency to be determined during certification testing if the ISD system manufacturer demonstrates equivalent self testing and automatic calibration features. All vapor recovery ISD system sensors or devices not performing in conformance with the manufacturer's specifications shall be promptly repaired or replaced.

    1.6   Subject to the Executive Officer approval, other monitoring strategies may be used provided the manufacturer provides a description of the strategy and supporting data showing such strategy is equivalent to these requirements. Information such as monitoring, reliability, and timeliness shall be included.

    1.7   The vapor recovery ISD system shall include self-testing including the ISD system and sensors that will be verified during the certification process.

    1.8   The ISD system shall maintain an electronic archive of monthly reports for a period of 24 months and an archive of daily reports for the last rolling 30 days.

    1.9   The vapor recovery ISD system shall be operational a minimum of ninety five percent (95%) of the time, based on an annual basis or prorated thereof, and shall record the percentage of ISD up-time on a daily basis.

    1.10   The Executive Officer shall, during certification testing, verify that the system is

capable of detecting failures (of a size defined in each subsection, below) with at least a 95% probability while operating at no more than a 1% probability of false alarms.   A false alarm occurs when the ISD system issues an alarm, but the vapor recovery system is functioning normally; i.e., the vapor recovery system is operating within the parameter limits required by CP-201 and specified in its Executive Orders.

2.   MONITORING REQUIREMENTS

    2.1   VAPOR COLLECTION MONITORING REQUIREMENTS

        2.1.1   Air/Liquid (A/L) Ratio Monitoring

            2.1.1.1 Requirement

            The GDF vapor recovery ISD system shall monitor the Air to Liquid (A/L) ratio for vapor recovery systems which have A/L limits required by CP-201, Section 6 and specified in their Executive Orders.

            2.1.1.2 Malfunction Criteria – Gross Failure

The GDF vapor recovery ISD system shall assess, on a daily basis, based on a minimum of 15 dispensing events, when the A/L ratio is at least 75% below the lower certified A/L ratio or at least 75% above the upper certified A/L ratio, shall activate a warning alarm, and shall record the event. This condition must be detected with a probability of 95%. If fewer than 15 dispensing events occur in a day, the ISD system may accumulate events over an additional day or days until a minimum of 15 is reached. When two such consecutive failed assessments occur, the ISD system shall activate a failure alarm, record that event, and prohibit fuel dispensing from the affected fueling point(s). The ISD system shall have the capability of re-enabling dispensing, and shall record that event.

            For example, for a vapor recovery system that is certified to operate with an A/L ratio between 0.9 and 1.0, when the ISD system assesses two A/L ratios equal to or less than 25%(0.9), or 0.22, or equal to or greater than 175%(1.0), or 1.75, the ISD system shall activate an alarm.

            2.1.1.3 Malfunction Criteria - Degradation

            The GDF vapor recovery ISD system shall assess, *on a weekly basis* WITHIN 7 DAYS, based on a minimum of 30 fueling events, when the A/L ratio is at least 25% below the lower certified A/L ratio or at least 25% above the upper certified A/L ratio, shall activate a warning alarm, and shall record the event. This condition must be detected with a probability of 95%. If fewer than 30 dispensing events occur in *a week* 7 DAYS, the ISD system may accumulate events over an additional day or days until a minimum of 30 is reached. When two such consecutive failed assessments occur, the ISD system shall activate a failure alarm, record that event, and prohibit fuel dispensing from the affected fueling point(s). The ISD system shall have the capability of re-enabling dispensing, and shall record that event.

For example, for a vapor recovery system that is certified to operate with an A/L ratio between 0.9 and 1.0, when the ISD system assesses two A/L ratios equal to or less than 75%(0.9), or 0.68, or equal to or greater than 125%(1.0), or 1.25, the ISD system shall activate an alarm.

2.1.2 Vapor Collection Flow Performance Monitoring

2.1.2.1 Requirement

The GDF vapor recovery ISD system shall monitor vapor collection flow performance for balance vapor recovery systems. Flow performance is defined as the amount of vapor collected relative to fuel dispensed.

2.1.2.2 Malfunction Criteria

The GDF vapor recovery ISD system shall assess, on a daily basis, based on a minimum of 15 dispensing events, when the vapor collection flow performance is less than 50%, shall activate a warning alarm, and shall record the event. This condition must be detected with a probability of 95%. If fewer than 15 dispensing events occur in a day, the ISD system may accumulate events over an additional day or days until a minimum of 15 is reached. When two such consecutive failed assessments occur, the ISD system shall activate a failure alarm, record that event, and prohibit fuel dispensing from the affected fueling points. The ISD system shall have the capability of re-enabling dispensing, and shall record that event.

2.1.3 Central Vacuum Unit Monitoring

2.1.3.1 Requirement

The GDF vapor recovery ISD system shall verify that the central vacuum unit is operating within the certified range by measuring and recording the vacuum at a minimum of one reading every minute.

2.1.3.2 Malfunction Criteria

The GDF vapor recovery ISD system shall assess, on a continuous rolling 20 minute basis, when a vacuum failure occurs as determined by the Executive Officer for each Phase II system, shall activate a failure alarm, record the event, and prohibit fuel dispensing from the affected fueling points. This condition must be detected with a probability of 95%. The ISD system shall have the capability of re-enabling dispensing and will disable the central vacuum unit monitoring for 24 hours, and shall record that event.

2.2 VAPOR CONTAINMENT MONITORING REQUIREMENTS

2.2.1 UST Ullage Pressure Monitoring

2.2.1.1 Requirement

The GDF vapor recovery ISD system shall measure and record the pressure in the UST

ullage at a minimum of one reading every minute. One pressure monitoring device may be used for multiple USTs that have common vapor recovery piping.

UST ullage pressure data associated with Phase I fuel deliveries is considered "excluded time". All other UST ullage pressure data is considered "non-excluded time."

2.2.1.2   Malfunction Criteria – Gross Failure

The GDF vapor recovery ISD system shall assess, on a weekly basis, when the UST ullage pressure exceeds 1.5" wcg for at least 5% of the non-excluded time, shall activate a warning alarm, and shall record the event. This condition must be detected with a probability of 95%. When two such consecutive failed assessments occur, the ISD system shall activate a failure alarm, record that event, and prohibit fuel dispensing from the affected fueling point(s). The ISD system shall have the capability of re-enabling dispensing, and shall record that event.

2.2.1.3   Malfunction Criteria – Degradation

The GDF vapor recovery ISD system shall assess, on a monthly basis, when the UST ullage pressure exceeds 0.50" wcg for at least 25% of the non-excluded time, shall activate a warning alarm, and shall record the event. This condition must be detected with a probability of 95%. When two such consecutive failed assessments occur, the ISD system shall activate a failure alarm, record that event, and prohibit fuel dispensing from the affected fueling points. The ISD system shall have the capability of re-enabling dispensing, and shall record that event.

2.2.1.4   Malfunction Criteria –Pressure Integrity

The ISD system shall detect the potential for excessive rates of vapor leakage from the UST system. The ISD system shall assess, on a weekly basis, when the EVR system vapor space leaks at a rate which can be represented by an orifice which leaks at 2 times the allowable CARB tight system standard in TP-201.3 ("Determination of 2 Inch WC Static Pressure Performance of Vapor Recovery Systems of Dispensing Facilities"), shall activate a warning alarm, and shall record the event. This condition must be detected with a probability of 95%.   When two such consecutive failed assessments occur, the ISD system shall activate a failure alarm, record that event, and prohibit fuel dispensing from the affected fueling point(s). The ISD system shall have the capability of re-enabling dispensing, and shall record that event.

2.2.2   Phase 1 - Vapor Transfer Monitoring

2.2.2.1   Requirement

The GDF vapor recovery ISD system shall detect excessive UST ullage pressure during Phase I fuel deliveries.

2.2.2.2   Malfunction Criteria

The GDF vapor recovery ISD system shall assess, on a continuous rolling 20 minute basis, when the UST ullage pressure exceeds 2.5" wcg for at least 25% of the time, shall activate a failure alarm, and shall record the

event. This condition must be detected with a probability of 95%.

2.3   VAPOR PROCESSING MONITORING REQUIREMENTS

2.3.1   Processor Monitoring

2.3.1.1   Requirement

The GDF vapor recovery ISD system shall verify that the processor is functioning properly as specified in CP-201 Section 8 and the Executive Order.

2.3.1.2   Malfunction Criteria

The GDF vapor recovery ISD system shall assess, on a daily basis, when the vapor processor is malfunctioning and at risk of releasing excessive hydrocarbons, benzene, or HAPS into the environment, as defined in CP-201 Section 8 and the Executive Order, shall activate a warning alarm, and shall record the event. When two such consecutive failed assessments occur, the ISD system shall activate a failure alarm, record that event, and prohibit fuel dispensing from the affected fueling points. The ISD system shall have the capability of re-enabling dispensing, and shall record that event.

3.   IMPLEMENTATION SCHEDULE

Implementation of an ISD system is subject to the implementation schedule prescribed in CP-201, with the following exception: ISD systems installed prior to April 1, 2004 are exempt, until April 1, 2004, from the requirement that the ISD system prohibit fuel dispensing to affected fueling points when the ISD system detects or assesses a failure.

4.   RECORDS

The GDF vapor recovery ISD system shall generate a monthly report listing the daily and monthly assessment of the ISD system; the vapor recovery system's operating requirements; the ISD system operational time (as a percentage); the EVR system pass time (as a percentage); the ISD monitoring test requirements; a list of the periods of non-compliance including the time and date (both warning alarms and failure alarms); an Event log describing the re-enabling action taken including the time and date; and the time and date the ISD system clock was changed.   See Attachment 1 for a sample Monthly Report.

The GDF vapor recovery ISD system shall generate a daily report listing the UST's highest ullage pressure; the UST's lowest ullage pressure; the UST's average ullage pressure; the UST's 75th percentile ullage pressure; the UST's 95th percentile ullage pressure; and the daily assessment of each fueling point, including the measured values and the pass or fail assessment of each fueling point. See Attachment 2 for a sample Daily Report.

The GDF vapor recovery ISD system shall maintain an electronic record of the monthly

reports for the previous 24 calendar months. The monthly reports and the periods of non-compliance shall be stored in such a manner as to be electronically accessed, such as downloading to a personal computer or a laptop, or electronically transmitted, such as through a telephone modem. In addition, the summary status of the stored monthly reports and a minimum of the most recent 10 each of warning, failure and event log exception events shall be available for printing, on demand, at the GDF site from the integral ISD printer.

The ISD system shall store the electronic records of the monthly reports such that the records are maintained despite loss of power to the ISD system.

5.   TAMPERING PROTECTION

The GDF vapor recovery ISD system sensors or devices shall be designed and installed in a manner designed to resist unauthorized tampering and to clearly show by visual inspection if tampering has occurred. The manufacturer shall include measures to prevent tampering of the GDF vapor recovery ISD system in the application. All tampering features are subject to Executive Officer approval.

6.   READINESS/FUNCTION CODE

The GDF vapor recovery ISD system shall store a code upon first completing a full diagnostic check of all monitored components and systems. This is applicable when the GDF vapor recovery ISD system is initially installed or when power is restored.

7.   STORED VAPOR RECOVERY SYSTEM CONDITIONS

Upon detection of a vapor recovery component or system failure the GDF vapor recovery system conditions shall be stored in computer memory. Subject to Executive Officer approval, stored GDF vapor recovery system conditions shall include, but are not limited to, the time, date, which fueling point was shut down (if applicable), and the fault code.

8.   DESCRIPTION OF GDF VAPOR RECOVERY ISD SYSTEM

The manufacturer shall include the following documentation with the certification application.

8.1   A written description of the functional operation of the GDF vapor recovery ISD system.

8.2   A table providing the following information shall be included for each monitored component or system, as applicable:

(A)   Corresponding fault code;
(B)   Monitoring method or procedure for malfunction detection;
(C)   Primary malfunction detection parameter and its type of output signal;
(D)   Fault criteria limits used to evaluate output signal of primary parameter;
(E)   Other monitored secondary parameters and conditions (in engineering units) necessary for malfunction detection;
(F)   Monitoring time length and frequency of checks;
(G)   Criteria for storing fault code;

(H) Criteria for notifying station operator; and

(I) Criteria used for determining out of range values and input component rationality checks.

8.3 A logic flowchart describing the general method of detecting malfunctions for each monitored emission-related component or system.

8.4 A written detailed description of the recommended inspection and Maintenance procedures, including inspection intervals that will be provided to the gasoline dispensing facility operator.

8.5 A written detailed description of the training plan to train and certify system testers, repairers, installers, and rebuilders.

8.6 A written description of the manufacturer's recommended quality control checks.

8.7 A written description of calibration and diagnostic checks.

9. MONITORING SYSTEM DEMONSTRATION REQUIREMENTS

The manufacturer shall demonstrate, to the satisfaction of the Executive Officer, that the GDF vapor recovery ISD system complies with the performance standards under actual field conditions and simulated failures. Such demonstrations shall include the submission of test results with the certification application. After review of the application, the Executive Officer shall conduct, or shall contract for and observe, evaluation and testing of the vapor recovery systems (including the ISD system) in accordance with the provisions of CP-201 Section 13. Such evaluation and testing shall demonstrate that the GDF vapor recovery system (including ISD system) complies with the performance standards under actual field conditions and simulated failures.

10. FAILURE MODE TESTING

In the application for certification the applicant shall include a list of system components that are monitored by the ISD system and test procedures for failure mode testing. The Executive Officer may modify the list or test procedures based on an engineering evaluation. Additional procedures may be developed as necessary to verify that the system's self-check and self-test features perform accurately.

The Executive Officer shall conduct, or shall contract for and observe, failure mode testing using test procedures to verify that the ISD system can detect various types of failures, record the incidence of such failures, and respond accordingly with alarms and/or by prohibiting fuel dispensing, as applicable. The ISD system shall have the capability of re-enabling dispensing, and shall record that event. Failure mode testing shall include verification that interaction with ORVR-equipped vehicles will not cause the ISD to inappropriately identify a failure condition. ISD systems with false positive determinations in excess of one percent (1%) shall not be certified.

11. STANDARDIZATION

All ISD systems shall be equipped with an RS232 port to remotely access ISD status information for on-site (e.g., through a laptop computer) and remote download

capability (e.g., the console will have an RS232 interface port accessible on the exterior of the console for telephone modem access). All ISD systems shall be electronically accessible with standardized software.

12.   SIGNAL ACCESS

The following signals (as applicable) and information shall be made available on demand through the RS 232 serial port on the standardized data link connector: the current monthly report; the historical monthly reports; each fueling point's A/L ratio current status (for vacuum assist vapor recovery systems); each fueling point's vapor collection flow performance current status (for balance vapor recovery systems); central vacuum pump current operational status; processor current operational status; and UST ullage pressure.

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EVR-ISD Monthly Report - FEB 2001	Overall Status	Fail
	ISD System Up Time	98.0%
CARB's Fill-Up	EVR System Pass Time	93.5%
1900 14th Street	EVR Vapor Collection	Fail
Sacramento, CA 95814	EVR Vapor Containment	Warn
SPDS Site #123456	Stage I Transfers	Fail 2 of 12
	Vapor Processor	Fail

CARB EVR Certified Operating Requirements

	Min	Max
Vapor Collection Assist System A/L Range	0.90	1.10
Vapor Collection Central Vacuum Pump Vacuum Range	60"wcg	80"wcg
Vapor Processor HC Emission Range	0.00%	1.20%
Vapor Processor Vacuum Pump Range	9.0psi	14.0psi

CARB ISD Monitoring Test Requirements

	Period	Below	Above
Vapor Collection Assist Sys A/L Gross Fail	1dy	0.23	1.77
Vapor Collection Assist Sys A/L Degradation Fail	7dys	0.74	1.26
Vapor Collection Balance Sys Flow Performance Fail	1dy	0.50	----
Vapor Collection Central Vacuum Unit Vacuum Fail	20min	60"wcg	80"wcg
Vapor Containment Gross Fail, 95th percentile	7dys	----	1.50"wcg
Vapor Containment Degradation, 75th percentile	30dys	----	0.50"wcg
Vapor Containment Pressure Integrity Fail	1dy	----	X.Xcfh
Phase I Vapor Transfer Fail, 75th percentile	20min	----	2.50"wcg
Vapor Processor HC Emission Concentration Fail	1dy	----	1.20%
Vapor Processor Vacuum Pump Vacuum Fail	1dy	9.0psi	14.0psi

Warning Alarms

Date	Time	Description (Consecutive Occurrence #)	Reading	Value
6/17/2000	00:00	(1) A/L Ratio Degradation	FP3 A/L	0.21
6/16/2000	00:00	(1) Containment Pressure Degradation	Daily 75th%	0.63
6/14/2000	5:12	(1) Stage I Transfer Fail	20min 75th%	3.21

Failure Alarms (Disabled Fueling Points)

Date	Time	Description (Consecutive Occurrence #)	Reading	Value
6/24/2000	00:00	(2) A/L Ratio Degradation	FP3 A/L	0.17
6/15/2000	12:30	(1) Vapor Processor Fail	HC%	1.60
6/15/2000	12:30	(1) Vapor Processor Fail	Vacuum PSI	6.36

Event log

Date	Time	Description	Action
6/24/2000	6:45	Manual Reset	Enabled FP3
6/24/2000	00:00	A/L Ratio Degradation	Disabled FP3
6/15/2000	14:40	Manual Reset	Enabled FP1-4, 7-8
6/15/2000	12:30	Vapor Processor Fail	Disabled FP1-4, 7-8
6/14/2000	5:12	StageI Transfer Fail	Audible Alarm
6/03/2000	8:00	System Clock Modified	New Time = 6/03/2000 9:25

EVR-ISD Monthly Summary Report																			Page 1 of 2	

CARB's Fill-Up   May 2000   10:47 AM June 2, 2000
1900 14th Street
Sacramento, CA 95814   Site Contact: Tom Scheffelin   EVR Type: Gilbarco Vapor Vac
SPDS Site #123456   Site Phone: (916) 322-8922   ISD Type: Veeder-Root ISD-450

Vapor Processor Type: VST Model XYZ

Overall Status: Fail   ISD Up-Time: 97%

			Stage		Non-Excluded				Fueling Point Average A/L Ratio											
	System	Vapor	I	---	Pressure	"WCG	---	-----	(F)Fail	(D)Degradation	(G)Gross Fail	(I)Insufficient Data	-------							
Date	Status	Prcsr	Xfr	Hi	95%	75%	Lo	1	2	3	4	5	6	7	8	9	10	11	12	
05/01	Pass	Pass	Pass	+2.6	+0.5	-0.1	-1.3	0.98	1.12	1.20	1.01	0.88	0.96	0.99	1.09	1.34	1.20	1.03	1.07	
05/02	Pass	Pass		+1.8	+0.3	0.0	-0.4	0.95	1.12	1.21	0.70	0.87	0.96	0.99	1.09	1.28	1.20	1.06	1.03	
05/03	Pass	Pass	Pass	+0.7	0.0	-0.3	-2.5	0.94	1.13	1.21	0.56	0.89	1.03	0.98	1.07	1.15	1.21	1.08	1.05	
05/04	Pass	Pass		+2.4	+1.1	+0.6	-0.9	0.93	1.16	1.21	0.44	0.86	1.06	0.96	1.05	I	1.21	1.09	1.05	
05/05	F	Pass		+1.3	0.0	-0.4	-0.8	0.97	1.12	1.24	0.12G	0.88	1.01	0.97	1.05	I	1.24	1.05	1.05	
05/06	F	Pass	Pass	+1.5	+0.4	-0.3	-1.3	0.98	1.12	1.23	0.05G	0.85	1.02	0.97	1.05	I	1.22	1.06	1.03	
05/07	F	Pass		+1.2	+0.5	-0.3	-1.2	0.98	1.14	1.24	0.29D	0.88	1.02	0.98	1.06	1.32	1.20	1.07	1.06	
05/08	Pass	Pass		+1.1	+0.2	-0.5	-1.6	0.99	1.13	1.25	1.05	0.81	1.04	0.98	1.07	I	1.20	1.07	1.04	
05/09	Pass	Pass	Pass	+1.3	+0.3	-0.2	-0.9	1.00	1.15	1.24	1.03	0.81	1.05	0.97	1.06	1.39	1.20	1.08	1.06	
05/10	Pass	Pass		+1.4	+0.1	-0.4	-1.8	1.03	1.12	1.23	1.04	0.86	1.06	0.96	1.07	1.22	1.21	1.07	1.04	
05/11	Pass	Pass	Pass	+1.4	+0.2	-0.3	-1.4	0.98	1.12	1.23	1.02	0.87	0.96	0.98	1.07	I	1.21	1.08	1.07	
05/12	Pass	Pass		+1.3	+0.2	-0.4	-2.1	0.95	1.13	1.22	1.05	0.85	0.96	0.99	1.07	I	1.23	1.06	1.07	
05/13	Pass	Pass		+1.1	+0.3	-0.3	-1.6	0.97	1.13	1.24	1.04	0.88	0.99	0.99	1.09	I	1.21	1.08	1.07	
05/14	Pass	Pass	Pass	+1.6	+0.2	-0.5	-2.0	0.95	1.15	1.22	1.05	0.90	0.99	0.99	1.09	1.28	1.23	1.09	1.06	
05/15	Pass	Pass		+1.3	+0.1	-0.5	-1.9	0.99	1.11	1.24	1.01	0.91	1.01	0.96	1.06	I	1.22	1.04	1.06	
05/16	Pass	Pass	Pass	+1.5	+0.1	-0.4	-1.7	0.96	1.14	1.24	1.03	0.86	1.03	0.98	1.06	I	1.23	1.08	1.05	
05/17	Pass	Pass		+2.2	+0.7	0.0	-0.7	0.93	1.11	1.22	1.02	0.86	1.02	0.98	1.07	I	1.22	1.08	1.06	
05/18	F	F	Pass	+3.0	+0.8	+0.2	-0.5	0.97	1.11	1.25	1.04	0.88	1.02	0.98	1.06	I	1.22	1.09	1.05	
05/19	F	F		+2.9	+1.1	+0.1	-0.4	0.98	1.13	1.25	1.02	0.88	0.98	0.97	1.07	1.26	1.20	1.06	1.07	
05/20	F	F	F	+2.9	+0.9	+0.1	-0.5	0.98	1.13	1.25	1.04	0.86	0.99	0.97	1.07	I	1.20	1.07	1.05	
05/21	F	F		+3.1	+0.7	0.0	-0.8	0.97	1.15	1.21	1.05	0.88	1.00	0.99	1.08	I	1.20	1.07	1.06	
05/22	F	Pass		+1.9	+0.6G	-0.1	-1.0	0.99	1.13	1.21	1.02	0.87	0.98	0.99	1.08	I	1.22	1.08	1.06	
05/23	F	F	Pass	+2.7	+1.5G	+0.5	-0.3	0.98	1.14	1.23	1.04	0.87	1.04	0.99	1.08	1.29	1.21	1.06	1.06	
05/24	F	F		+3.1	+1.1G	+0.3	-0.5	0.99	1.12	1.21	1.05	0.89	0.97	0.95	1.06	1.18	1.22	1.08	1.05	
05/25	F	F	Pass	+3.0	+1.0G	+0.2	-0.4	0.99	1.12	1.23	1.03	0.86	0.99	0.98	1.09	I	1.21	1.06	1.07	
05/26	F	Pass		+1.8	+0.3G	-0.2	-1.3	0.99	1.14	1.22	1.02	0.88	0.99	0.98	1.08	1.20	1.21	1.06	1.05	
05/27	Pass	Pass	Pass	+1.6	+0.4	-0.5	-2.2	0.96	1.14	1.22	1.04	0.86	1.02	0.96	1.08	1.22	1.20	1.08	1.05	
05/28	Pass	Pass		+1.2	+0.2	-0.4	-1.8	0.98	1.15	1.22	1.01	0.88	1.01	0.99	1.06	1.15	1.20	1.07	1.06	
05/29	Pass	Pass		+1.3	+0.6	+0.1	-0.9	0.98	1.14	1.24	1.02	0.88	1.04	0.97	1.08	I	1.21	1.08	1.06	
05/30	Pass	Pass	Pass	+1.1	+0.2	-0.7	-1.6	0.95	1.15	1.22	1.02	0.86	0.96	0.98	1.05	1.11	1.21	1.06	1.07	
05/31	Pass	Pass		+0.9	+0.1	-0.4	-1.5	0.97	1.12	1.25	1.01	0.89	1.05	0.99	1.05	1.19	1.23	1.04	1.07	

Month:	Fail	Fail	Fail	+3.1	+0.6G	-0.1	-2.5	0.98	1.13	1.23	0.96F	0.87	1.01	0.98	1.06	1.24	1.22	1.07	1.06	

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CARB's Fill-Up                                May 2000                         10:47 AM June 2, 2000
1900 14th Street
Sacramento, CA 95814              Site Contact: Tom Scheffelin            EVR Type: Gilbarco Vapor Vac
SPDS Site #123456                 Site Phone: (916) 322-8922              ISD Type: Veeder-Root ISD-450
Overall Status: Fail    ISD Up-Time: 97%                          Vapor Processor Type: VST Model XYZ
Fueling Point Average A/L Ratio
      System ----------------------- (F)Fail (D)Degradation (G)Gross Fail (I)Insufficient Data -----------------------
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Date	Status	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
05/01	Pass	0.98	1.12	1.20	1.01	0.88	0.96												
05/02	Pass	0.95	1.12	1.21	0.70	0.87	0.96												
05/03	Pass	0.94	1.13	1.21	0.56	0.89	1.03												
05/04	Pass	0.93	1.16	1.21	0.44	0.86	1.06												
05/05	F	0.97	1.12	1.24	0.12G	0.88	1.01												
05/06	F	0.98	1.12	1.23	0.05G	0.85	1.02												
05/07	F	0.98	1.14	1.24	0.29D	0.88	1.02												
05/08	Pass	0.99	1.13	1.25	1.05	0.81	1.04												
05/09	Pass	1.00	1.15	1.24	1.03	0.81	1.05												
05/10	Pass	1.03	1.12	1.23	1.04	0.86	1.06												
05/11	Pass	0.98	1.12	1.23	1.02	0.87	0.96												
05/12	Pass	0.95	1.13	1.22	1.05	0.85	0.96												
05/13	Pass	0.97	1.13	1.24	1.04	0.88	0.99												
05/14	Pass	0.95	1.15	1.22	1.05	0.90	0.99												
05/15	Pass	0.99	1.11	1.24	1.01	0.91	1.01												
05/16	Pass	0.96	1.14	1.24	1.03	0.86	1.03												
05/17	Pass	0.93	1.11	1.22	1.02	0.86	1.02												
05/18	F	0.97	1.11	1.25	1.04	0.88	1.02												
05/19	F	0.98	1.13	1.25	1.02	0.88	0.98												
05/20	F	0.98	1.13	1.25	1.04	0.86	0.99												
05/21	F	0.97	1.15	1.21	1.05	0.88	1.00												
05/22	F	0.99	1.13	1.21	1.02	0.87	0.98												
05/23	F	0.98	1.14	1.23	1.04	0.87	1.04												
05/24	F	0.99	1.12	1.21	1.05	0.89	0.97												
05/25	F	0.99	1.12	1.23	1.03	0.86	0.99												
05/26	F	0.99	1.14	1.22	1.02	0.88	0.99												
05/27	Pass	0.96	1.14	1.22	1.04	0.86	1.02												
05/28	Pass	0.98	1.15	1.22	1.01	0.88	1.01												
05/29	Pass	0.98	1.14	1.24	1.02	0.88	1.04												
05/30	Pass	0.95	1.15	1.22	1.02	0.86	0.96												
05/31	Pass	0.97	1.12	1.25	1.01	0.89	1.05												

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Month: Fail  0.98  1.13  1.23  0.96F 0.87  1.01
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CARB's Fill-Up   May 2000   10:47 AM June 2, 2000
1900 14th Street
Sacramento, CA 95814   Site Contact: Tom Scheffelin   EVR Type: Gilbarco Balance
SPDS Site #123456   Site Phone: (916) 322-8922   ISD Type: Veeder-Root ISD-450
Overall Status: Fail   ISD Up-Time: 100%   Vapor Processor Type: None

Stage	Non-Excluded System Status	Vapor Prcsr	I Xfr	Pressure "WCG Hi	95%	75%	Lo	Fueling Point Hose Blockage (F)Fail (D)Degradation (G)Gross Fail (I)Insufficient Data											
Date	Status	Prcsr	Xfr	Hi	95%	75%	Lo	1	2	3	4	5	6	7	8	9	10	11	12
05/01	Pass		Pass	+2.6	+0.5	-0.1	-1.3	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass		
05/02	Pass			+1.8	+0.3	0.0	-0.4	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass		
05/03	Pass		Pass	+0.7	0.0	-0.3	-2.5	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass		
05/04	Pass			+2.4	+1.1	+0.6	-0.9	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	I	Pass		
05/05	F			+1.3	0.0	-0.4	-0.8	Pass	Pass	Pass	F	Pass	Pass	Pass	Pass	I	Pass		
05/06	F		Pass	+1.5	+0.4	-0.3	-1.3	Pass	Pass	Pass	F	Pass	Pass	Pass	Pass	I	Pass		
05/07	F			+1.2	+0.5	-0.3	-1.2	Pass	Pass	Pass	F	Pass	Pass	Pass	Pass	Pass	Pass		
05/08	Pass			+1.1	+0.2	-0.5	-1.6	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	I	Pass		
05/09	Pass		Pass	+1.3	+0.3	-0.2	-0.9	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass		
05/10	Pass			+1.4	+0.1	-0.4	-1.8	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass		
05/11	Pass		Pass	+1.4	+0.2	-0.3	-1.4	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	I	Pass		
05/12	Pass			+1.3	+0.2	-0.4	-2.1	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	I	Pass		
05/13	Pass			+1.1	+0.3	-0.3	-1.6	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	I	Pass		
05/14	Pass		Pass	+1.6	+0.2	-0.5	-2.0	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass		
05/15	Pass			+1.3	+0.1	-0.5	-1.9	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	I	Pass		
05/16	Pass		Pass	+1.5	+0.1	-0.4	-1.7	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	I	Pass		
05/17	Pass			+2.2	+0.7	0.0	-0.7	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	I	Pass		
05/18	Pass		Pass	+3.0	+0.8	+0.2	-0.5	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	I	Pass		
05/19	Pass			+2.9	+1.1	+0.1	-0.4	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass		
05/20	Pass		Fail	+2.9	+0.9	+0.1	-0.5	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	I	Pass		
05/21	Pass			+3.1	+0.7	0.0	-0.8	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	I	Pass		
05/22	F			+1.9	+0.6G	-0.1	-1.0	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	I	Pass		
05/23	F		Pass	+2.7	+1.5G	+0.5	-0.3	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass		
05/24	F			+3.1	+1.1G	+0.3	-0.5	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass		
05/25	F		Pass	+3.0	+1.0G	+0.2	-0.4	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	I	Pass		
05/26	F			+1.8	+0.3G	-0.2	-1.3	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass		
05/27	Pass		Pass	+1.6	+0.4	-0.5	-2.2	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass		
05/28	Pass			+1.2	+0.2	-0.4	-1.8	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass		
05/29	Pass			+1.3	+0.6	+0.1	-0.9	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	I	Pass		
05/30	Pass		Pass	+1.1	+0.2	-0.7	-1.6	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass		
05/31	Pass			+0.9	+0.1	-0.4	-1.5	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass		
Month: Fail		Fail		+3.1	+0.6G	-0.1	-2.5	Pass	Pass	Pass	F	Pass	Pass	Pass	Pass	Pass	Pass		