



**ARID Technologies, Inc.**

7 December 2020

**Clerks' Office**

**California Air Resources Board**

**1001 I Street**

**Sacramento, CA 95814**

Dear Clerks' Office:

**Background**

ARID Technologies, Inc. has actively worked with the Monitoring and Laboratory Division Staff in a constructive manner since 1993. We have devoted a great deal of time, effort and expense to helping MLD Staff understand, measure and mitigate gasoline storage tank vapor emissions. We have shared both our theoretical and practical experience gained in this field from our global efforts and our on-going study of actual data gathered from fuel stations in Taiwan, Japan, Kuwait, Italy, Switzerland, Luxembourg, and Germany.

ARID has pioneered the use of selectively permeable membranes to minimize vapor emissions comprised of VOC's (Volatile Organic Compounds) and HAP's (Hazardous Air Pollutants). In October 2006, our Permeator system earned CARB approval (ORVR Compatibility) with Executive Order G-70-209. In November 2014, we initiated EVR Certification in response to a request by a large hypermarket fuel marketer, and in November 2019 our Permeator system earned CARB approval (Phase II EVR) with Executive Orders VR-201-Z and VR-202-Z.

Since earning approval last year, ARID has been deploying our Permeator system at California GDF; at present, we have approximately 60 units operating throughout California. The installed systems have eliminated overpressure alarms, including the historically high alarm periods with winter grade fuel over the Thanksgiving Holiday. This interval is especially troubling from an alarm perspective because many GDF operate with reduced hours or close their pumps altogether, where the storage tanks generate large volumes of evaporative vapor thereby overwhelming the fixed capacity of the 400-gallon Healy Clean Air Separator, previously Certified by CARB.

The ARID systems installed in California to date have all replaced the design-flawed 400-gallon buffer tanks which allow overpressures to occur and trigger ISD alarms. The storage tank evaporative losses from the approximately 3,000 sites still using the Healy buffer tanks are significant and represent lost fossil fuel, environmental emissions to the atmosphere, soil and groundwater. The negative

community health impacts are especially troubling due to the presence of benzene in the emitted vapors.

### **CARB Proposed Amendments**

In CARB's "Public Hearing to Consider Proposed Amendments to Enhanced Vapor Recovery Regulations", CARB states that .... "CARB staff is now proposing a suite of amendments that would continue to refine the regulations to improve cost-effectiveness and provide better regulatory certainty and enforceability with no increase in gasoline vapor emissions. The proposed amendments would:

1. Eliminate in-station diagnostic (ISD) system overpressure alarm criteria. The overpressure alarms are not effective in identifying repairable vapor recovery equipment problems, which results in response costs for GDF owners without reducing emissions.
2. Replace the ISD overpressure alarm criteria with requirements for improved monthly pressure data summaries and data storage to make stored information more useful.
3. Allow modern ISD communication ports such as USB or Bluetooth.
4. Make nozzle spillage standard more stringent to preserve the superior performance accomplished by currently certified nozzles and avoid backsliding.
5. Require vapor recovery equipment manufacturers to provide a physical sample of the certified system or components for CARB to archive.
6. Revise Phase I drop tube test procedures to better accommodate longer remote fill configurations.
7. Make various administrative changes to clarify the regulations.

ARID will provide comment on above sections 1, 2 and 5.

**Section 1** states, "...the overpressure alarms are not effective at identifying repairable vapor recovery equipment problems, which results in response costs to GDF owners without reducing emissions." This statement is extremely misleading and simply not true. The root cause of the ISD overpressure alarms is storage tank evaporative emissions, which are caused by air ingestion via the EVR Stage II system vent lines. Next, the undersized buffer tank is inadequate to accommodate the storage tank evaporative growth rate, and the problem lies with *fundamental design of this gear*, not some sort of *repairable defect*. In addition, prior to the Certification of our robust and commercially proven gear, gasoline marketers in CA were not able to meet the rigorous ISD pressure alarm criteria. However, at present, with the use of ARID's Permeator system, CA fuel marketers are presently meeting the specified pressure criteria.

CARB Staff have worked very hard over many decades to earn emissions reductions from many sources, including gasoline dispensing facilities. In proposing an elimination of ISD overpressure alarm criteria, CARB is taking a big step backwards in the control of vapor emissions. Maintaining low tank pressure reduces both fugitive and vent emissions. Rather than eliminate overpressure alarms, state-of-the-art vapor processors can be employed to eliminate the fugitive and vent emissions. Elimination of ISD overpressure alarms will surrender a significant portion of the environmental progress made in recent years. In fact, the early "ORVR Compatibility" certifications along with

revision of the pressure-driven fugitive emission factors comprised the cornerstone of CARB's efforts to minimize both fugitive and vent emissions. Why abandon these efforts now?

Unfortunately, it seems that MLD is leaping to an ISD downgrade option before making detailed calculations of cost effectiveness of the presently certified solution relative to historic EVR costs on a dollar per pound of reduced emissions basis.

In addition, it seems that MLD has not considered localized public health impacts and risks of the pressure driven VOC and HAP emissions (vent and fugitive). ARID has studied the supporting documentation recently posted to the ARB website, and our review indicates large discrepancies regarding accurate magnitude and temporal variation of the emissions. In addition, MLD's analysis specific to the "Phase II EVR Assist System" does not consider the air dispersion impact of carcinogenic compounds nor GDF proximity to sensitive receptors and/or environmental justice communities. (I have attached to this submittal a recent study on this topic).

The proposed wide-sweeping elimination of the ISD system Pressure Alarms for the entire California GDF population of 10,000 sites seems inconsistent with initiatives designed to minimize localized adverse public health impacts.

CARB is compounding their past errors in judgement; first they certified an EVR system which allowed air to be ingested, next they misjudged the efficacy of the proposed buffer tank solution, and now they are seeking to eliminate their own ISD rules and pressure specifications which were initially designed with great care to ensure proper system operation while minimizing vapor emissions and associated health hazards.

We recommend that CARB uses pressure levels of 0.5 iwc and 1.5 iwc for the 7-day, 95<sup>th</sup> percentile gross pressure and 30-day, 75<sup>th</sup> percentile degradation pressure ISD metrics, respectively.

**Section 2** states.... "Replace the ISD pressure alarm criteria with requirements for improved monthly pressure data summaries and data storage to make stored information more useful." This statement is also misleading and not true. The proposed modification to CP-201, sections 9.2.4 (a) and (b) shows potentially useful pressure interval data, but no reference is made to require further integration of this raw data to quantify fugitive and/or vent emissions. For example, Table 9.1 in section TP-201.2F provides valuable correlations for quantifying pressure-driven fugitive emissions, however, no link or requirement to use these correlations is contemplated in the proposed amendments. For example, what fugitive emissions rate is considered out of compliance, what average pressure level is considered problematic? Passive monitoring without associated specifications, milestones or threshold triggers is essentially worthless.

In addition, expecting under staffed Agencies to physically visit thousands of fuel stations and manually download such data is unrealistic. The infrastructure for automatic and remote data acquisition is already in place at CA GDF, de-coupling this information backbone from raw data sources is extremely inefficient and essentially "turns off the lights" for illuminating important data and associated trends. The proposed amendments have the opposite effect of the stated desire to "make stored information more useful". The stored pressure data interval will be rendered "useless" by ARB proposed amendments.

**Section 5** states .... “Require vapor recovery equipment manufacturers to provide a physical sample of the certified system or components for CARB to archive. While this proposed amendment may apply to certain small and relatively inexpensive samples of equipment; for example, nozzle components or diaphragms, the need to supply larger and more expensive hardware samples seems cumbersome. For example, the rigorous Certification process requires detailed specifications on key system components; Staff at any time can physically inspect field installed gear to ensure conformance with previous specifications. Also, if ARB expects suppliers to provide useable expensive hardware, is ARB willing to pay list price for such gear? There is a real cost to suppliers for shipping gear and allowing a regulatory agency to archive the gear for an indefinite period of time.

### **Summary**

ARID does not wish to be confrontational with ARB; however, we feel the need to objectively state our views based on practical experience earned through decades of involvement in this field. We feel the risks of “shunning political correctness” are overshadowed by the need to inform both the Board and California residents on the significant shortcomings of the present ARB proposal along with illumination of what appears to be a “broken regulatory system” within the fuel marketing segment in California, and indeed throughout the entire United States.

We think that science and engineering should lead the process for optimizing emissions reductions with associated economic benefit. We also think that fuel marketers should be given options for choosing the most cost-effective means to comply with logical regulations, considering site specific factors for individual marketers.

Given the transition to the Biden Administration, with robust rulemaking, the power and creativity of inventors and entrepreneurs can be unleashed to further innovate and provide elegant solutions to a wide array of current and future energy and environmental challenges.

We will submit for the record along with this letter our previous comments to MLD Staff. Originally, Staff promised to provide ARID with an opportunity for follow-on discussion to our previous submittal, but as of this writing, we have not received any feedback on the material we submitted on 29 April and 14 May 2020.

Sincerely,

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President & Founder

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