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Seyed Sadredin
Executive Director
Air Pollution Control Officer

Northern Region Office
4800 Enterprise Way
Modesto, CA 95356-8718
(209) 557-6400 • FAX (209) 557-6475

Central Region Office
1990 East Gettysburg Avenue
Fresno, CA 93726-0244
(559) 230-6000 • FAX (559) 230-6061

Southern Region Office
34946 Flyover Court
Bakersfield, CA 93308-9725
(661) 392-5500 • FAX (661) 392-5585

www.valleyair.org

DATE: April 17, 2014

TO: SJVUAPCD Governing Board

FROM: Seyed Sadredin, Executive Director/APCO
Project Coordinator: Dave Warner

RE: **ITEM NUMBER 8: EMERGENCY MEASURES TO ASSIST WITH DROUGHT RELIEF ACTIONS BY WATER DISTRICTS AND FARMERS**

RECOMMENDATIONS:

1. Review and provide direction on the following measures developed by the District to address air quality requirements related to implementation of drought relief projects during the current emergency:
 - a. Expedite permitting processes for temporary installation of generators to produce power to run electric pumps for which the utility has not yet been able to deliver electric service.
 - b. Expedite local portable equipment registration option for projects failing to find suitable engines under the state portable equipment registration program.
 - c. Authorize the Executive Director/APCO to enter into and execute timely Voluntary Emission Reduction Agreements (VERAs) to mitigate air quality impacts from urgent drought relief projects.
2. Authorize the Chair to send a letter to the Governor supporting requests by Lead Agencies under the California Environmental Quality Act (CEQA) to expand the Governor's Drought Emergency Executive Order to waive CEQA requirements for specific drought relief projects.
3. Support water districts and farmers by providing material assistance, education, and consultation in finding cost effective and expeditious options to satisfy applicable air quality requirements.
4. Work with affected agricultural operations to promote the use of currently available less water-intensive measures to comply with the District's Conservation Management Practices (CMP) regulations and to develop additional dust control measures, if necessary. Also work with the agricultural community to streamline methods to revise existing CMP plans.

5. Authorize the Executive Director/APCO to investigate potential streamlining changes to the District's Portable Equipment Registration rule, as necessary for emergency actions, and to prepare such amendments for the Governing Board's consideration through an expedited rule development process.

BACKGROUND:

According to the United States Geologic Survey, California is experiencing its worst drought in over a century. Calendar year 2013 was the driest year in the 119 years that official rainfall records have been kept. On January 17, 2014, the Governor declared a drought emergency for all of California, and the recent brief periods of rain have fallen far short of replenishing reservoirs and rebuilding snow packs – the state of emergency remains in place.

The District has been approached for assistance with unusual drought-related situations several times in recent months. Water delivery systems are being modified to move water in ways not previously considered, water well drilling activity is at an all-time high, and water used for dust suppression is becoming scarcer.

Consistent with the District's core values, staff has worked with stakeholders in each of these situations to find effective solutions that maintain air quality and health protections provided by applicable rules, regulations and laws.

The Drought:

The 2013/14 winter represented the third year of drought conditions in the San Joaquin Valley, and was by far the driest winter of the three years. A persistent and strong high pressure ridge over the eastern Pacific Ocean and the western United States effectively blocked weather disturbances from entering California. The historic strength and longevity of this high pressure siege resulted in a shocking lack of rainfall throughout the Valley, and California as a whole, during the months of November, December, and January. As seen in the table below, many cities in California, including those in the San Joaquin Valley, shattered record low rainfall totals during the calendar year 2013. Some records that have stood for over 100 years were broken.

Table: 2013 Calendar Year Rainfall Totals for Select Valley and California Cities

City	1981-2010 Average (inches)	2013 Total (inches)	Previous Record Low (inches)	Previous Record Year
Modesto	13.11	4.70	5.70	1929
Merced	12.50	3.79	6.00	2007
Fresno	11.50	3.01	3.55	1947
Visalia	10.93	3.47	4.10	1910
Bakersfield	6.47	3.43	1.87	1959
Sacramento	18.52	5.81	6.67	1976
San Francisco	23.65	5.59	9.00	1917
San Jose	14.90	3.80	6.04	1929
Los Angeles	12.82	3.65	4.08	1953
San Diego	10.34	5.57	3.41	1953

Drought Impacts on Valley Surface Water Delivery Systems

The U.S. Bureau of Reclamation (Reclamation) operates the Central Valley Project (CVP), a vast collection of reservoirs, power plants, and 500 miles of canals designed to deliver water to agricultural, municipal, and industrial contractors, and to federal wildlife refuges. On February 21, 2014, Reclamation took the unprecedented step of allocating 0% (zero percent) of normal water deliveries for 2014 to eastern Valley agricultural users of the Friant-Kern and Madera canals. The San Joaquin River which feeds these canal systems is expected to be at the historically low level of 18% of its normal peak natural runoff flow levels during April through July of 2014.

Also on February 21, Reclamation announced a 0% allocation of normal water deliveries to the “south-of-Delta” western Valley agricultural water users along the California Aqueduct. Between these two actions, virtually all federal surface water allocations to Valley farmers have been halted, an unprecedented and unexpected situation that is creating numerous unusual and urgent drought related situations, especially given the state Department of Water Resources’ announcement in January that the State Water Project will deliver no water in 2014.

In addition, many smaller cities in the San Joaquin Valley have relied on state and federal surface water deliveries, and are now receiving severely diminished allocations. These cities and other municipalities throughout the San Joaquin Valley have declared water emergencies and have instituted water conservation efforts.

While March rains may be expected to have improved conditions by some small amount, the improvements are not sufficient to allow any of the water distribution agencies to increase expected allocations to Valley water users. To date, allocations to the CVP remain at 0%.

Drought Impacts on Air Quality

The extreme weather conditions discussed above that have led to severe drought in the Valley also caused long periods of high pressure and stagnation that prevented pollutant dispersion throughout the winter of 2013/14. Additionally, the dry conditions from lack of precipitation resulted in the release of more suspended particulate matter into the atmosphere. These conditions led to exceptionally high PM2.5 concentrations in the San Joaquin Valley and throughout the state of California. Unfortunately, the Valley's air quality can suffer further degradation in the coming months for the following reasons:

Fallowed land: With no guarantees of water deliveries, many Valley farmers have chosen to allow significant portions of their previously farmed land to go fallow, unplanted. While native grasses and plants would likely and eventually reclaim the fallowed land, in the short term land that has been disturbed by farming and then allowed to go fallow provides a significant potential for dust storms during any high wind event. While a portion of windblown dust is large enough to settle to the ground downwind, much of it is fine enough to stay airborne as inhalable particulate, PM10 and PM2.5, a particular problem during winter months in the Valley.

Diminished resources for dust mitigation: Water has been used for many years to control dust on agricultural operations, construction sites, unpaved roads and open areas. These dust control efforts are necessary for preventing particulate matter from covering crops or becoming a nuisance to neighbors, but dust control is also required in many cases by District regulations to prevent unhealthy levels of inhalable particulate in the air. A severe water shortage may have the potential to negatively impact District stakeholders' ability to comply with those regulations.

Wildfires: The excessively dry conditions and significant combustible materials in wild areas surrounding the San Joaquin Valley are exacerbating the chances of an exceptionally bad wildfire season during the summer of 2014. Air pollution generated from wildfires has the potential to overwhelm the total industrial and mobile source emissions in the San Joaquin Valley. These emissions can result in significant adverse public health impacts. For instance, in the summer of 2008, wildfires caused pollutant levels and numbers of daily exceedances of health-based standards in the San Joaquin Valley and throughout California that were significantly higher than ever before in recorded history.

Increased well water usage: The District also expects that decreased availability of surface water deliveries through the Central Valley Project system will result in increased usage of well water. In addition to other well-known problems caused by increased ground water depletion, like lowering water tables and significant subsidence of the Valley floor, the increased use of these wells also means an

increased use of internal combustion engines that drive a number of these wells. While the agricultural community has replaced a great number of these engines with electrically driven wells or with significantly lower-emitting internal combustion engines over the last decade, the potential exists for an estimated increase in nitrogen oxide (NO_x) emissions of several tons per day. NO_x is the key component to both wintertime particulate and summertime ozone concentrations in the San Joaquin Valley, so this is a key potential impact.

Drilling new and deeper wells: The increased need for well water and the lowering of water tables both result in the need for new or deeper wells and the District has seen a significant increase in water well drilling activities. Wells are drilled with internal combustion engines, and new water wells in remote locations away from electrical power lines are often equipped with internal combustion engines to power the wells. These internal combustion engines used for drilling and powering the wells add to the NO_x emissions discussed above, perhaps adding another 10% to the new NO_x emissions caused by the drought.

Unusual water transfers: The District has also encountered several unusual surface water transfer issues with irrigation and water districts. For instance, one irrigation district must pump water from one canal to another to deliver water to small municipalities on the east side of the Valley along the Friant-Kern Canal. Another water district proposes to use stored water this year for their irrigation needs, but will need to use their internal combustion water pumping engines more than allowed by existing permits in future years to replenish the stored water used this year. Yet another irrigation district proposal is to pump water in a reverse flow through the California Aqueduct from water storage locations in the south Valley, to farmers in need further north. Each of these projects is likely to use internal combustion engines to power water pumps, generating additional emissions.

Potential power shortage leading to blackouts: The lack of precipitation has diminished water storage in the state's reservoirs and reduced hydroelectric power capacity. This has led some to believe that the resulting power shortage might cause some form of blackouts. Given the increased need for ground water, this may necessitate the use of emergency diesel engines in place of electric pumps by some farmers, resulting in increased combustion emissions.

DROUGHT RELIEF ACTIONS BY FARMERS AND WATER DISTRICTS THAT MAY REQUIRE SPECIAL TREATMENT BY THE AIR DISTRICT:

1. Some farmers have installed electric pumps on water wells, but have not yet received electric service from the utility. Given the current drought conditions, the need for water is immediate and waiting for the utility connection can have

devastating economic impact. Many of these farmers want to install and operate temporary diesel engines which require District authorization.

2. Some water districts are proposing to install and operate temporary diesel engines to transfer water between water systems. In one case, a water district must supply surface water to towns along the Friant-Kern canal. The current drought conditions are limiting the municipal water supplies delivered to the Friant-Kern canal by the federal government, and so the water district is proposing to pump water from a state water project canal into the Friant Kern canal for use by towns along the canal. Given the emergency need for this water for municipal use, the water district is proposing to use portable diesel engines to power the pumps this year, but will invest in electric pumps to fill any future need for transfers between these two canals.
3. Water districts are also proposing to use temporary diesel engines to supply water to farmers who cannot rely on their normal irrigation water supplies. For instance, the 0% allocation to the California Aqueduct is creating critical conditions for some farmers who have historically used the Aqueduct as their irrigation water supply. One irrigation district is proposing to use temporary diesel engines to pump water in a reverse-flow direction, upstream along the Aqueduct, from their water storage facilities in the south Valley.
4. The District anticipates an increased need for temporary diesel engines to power irrigation wells in the event of power outages brought about by a shortage of hydroelectric power. As noted above, the current drought conditions have the potential to impact the availability of hydroelectric power, which makes up approximately 15% of California's grid power supply. If power outages occur due to the lack of hydroelectric power, farmers can be expected to propose to provide power to irrigation wells with temporary diesel engines.

RECOMMENDED DISTRICT ACTIONS:

Reasonable action by the District to accommodate drought relief efforts by water districts and farmers is imperative in minimizing negative impacts on air quality from continued drought conditions. In addition, failure to do so can have severe impacts on the Valley's agriculturally driven economy. Today's recommendations, as detailed below, are designed to allow for a streamlined and proactive approach which will provide an overall benefit to air quality.

Expedite Permitting Processes for Temporary Installations:

Certain drought relief actions by farmers are expected to require temporary installation of internal combustion engines. In some cases, permitting is the best option for farmers

to obtain District authorization. Recognizing that time is of the essence, the District has implemented the following measures to expedite permit issuance:

- Standardized permit evaluation and processing forms to minimize processing time.
- Handling of applications on a priority basis, without waiting in the application queue.
- District promises to deliver such permits within 10 days.

The likely uses of the above-described processes will be for farmers awaiting utility connection who need to install temporary internal combustion engines powering electrical generators. Farmers who are drilling new electrically powered wells are frequently finding themselves with a newly drilled well and a new electrical pump waiting to be used to pull the water out of the ground, but are stymied by delays by the utility companies in delivering line power to the new well site. The District strongly supports the clean air benefits of installing electric water pumps, and is concerned that the delays caused by the utility companies in extending power lines might cause farmers to choose to install internal combustion engines instead, as the long-term solution to their pumping needs. This expedited permitting process will serve to encourage the continued long-term use of electrical pump systems.

Expedite Local Portable Equipment Registration:

The District anticipates that a number of water districts may have to deploy diesel fired water pumps and electric generators to drive electric pumps. Such activities require authorization from the District, and traditional permitting processes can be quite time consuming and not well matched to these temporary installations. The District's traditional permitting requirements and administrative procedures are designed to address permanent sources of emissions that last a lifetime. Some drought relief actions may be suitable for the use of temporary portable engines. For these applications, a more streamlined approach would be to use equipment already registered under the state's portable equipment registration program. The District will work closely with the water districts and farmers to help obtain the necessary authorizations from the state. However the District anticipates that certain applications may require equipment currently not registered under the state program. Obtaining a state registration can take several months. Recognizing that time is of the essence, the District will offer priority processing through a more streamlined local program under District Rule 2280, so that new registrations can be issued expeditiously within days or hours of the receipt of an application.

The likely uses of the above-described processes will be water districts that need to install engines to meet temporary water transfer capabilities.

Authorize Executive Director/APCO to Execute Voluntary Emission Reduction Agreements (VERAs):

District actions to streamline the authorization process and administrative red tape are expected to provide water districts and farmers with reasonable paths to implement emergency drought relief actions. The District, however, is concerned with the potential cumulative air quality impact of these projects. To minimize air quality impacts, it is recommended that certain projects mitigate their emissions through the use of VERAs. In addition to reducing the cumulative air quality impact, VERAs can also be helpful in meeting California Environmental Quality Act (CEQA) requirements for projects that individually exceed the District's CEQA significance thresholds.

The District has extensive experience in executing and implementing VERAs to mitigate emissions from new development projects. VERAs are typically approved for execution by the Governing Board. Recognizing that time is of the essence, it is recommended the Governing Board authorize the Executive Director/APCO to enter into and execute VERAs with signature from the Governing Board Chair.

Drought relief projects by water districts that require multiple engine installations or operation to transfer water are the likely candidates for VERAs.

Support Requests to Governor for CEQA Waivers:

The measures identified by the District streamline the permitting process and mitigate the air quality impact associated with the anticipated emergency drought relief actions. However, compliance with CEQA can be extremely time consuming and can lead to devastation of the San Joaquin Valley's agricultural economy. Water districts and the state's Department of Water Resources are asking the Governor to expand his January 2014 "Proclamation of a State of Emergency" to grant waivers of CEQA requirements for emergency drought relief actions. It is recommended that your Board authorize the Chair to send a letter to the Governor supporting such requests for projects that employ VERAs and comply with all applicable District regulations. The basis for this recommendation is as follows:

- Failure to act in a timely manner to deploy drought relief actions can have a severe impact on air quality as described earlier in this document.
- Utilizing VERAs will mitigate cumulative air quality impacts from such projects.
- Failure to act in a timely manner to deploy drought relief actions can have devastating economic impact.

Support Water Districts and Farmers (Assistance, Education, Consultation):

The regulations that govern air quality permitting and other approval processes are complex and varied, and the District welcomes opportunities to share our expertise in

these areas. In addition to our longstanding educational efforts through our website, our Business Assistance Offices, and our public outreach efforts, we have initiated a number of specific educational efforts to address drought-related concerns:

- **Compliance Assistance Bulletins:** The District has developed and continues to develop a number of short Compliance Assistance Bulletins (CABs) that provide the District's knowledge in these areas to a wider audience. For instance we have developed a CAB to identify permitting requirements for well drilling operations and identifying permit streamlining efforts we have put in place to allow farmers to electrify their irrigation pumps, as discussed above. A copy of this CAB is attached to this Board memo as an example of this type of educational effort. Other CABs address alternatives to water application to control dust on construction projects and agricultural lands. These CABs are distributed to target audiences and all interested parties, and are posted on our web site, www.valleyair.org.
- **Face-to-face meetings:** The District has encouraged and held several project-specific meetings with individual water districts and other interested parties in which we were able to discuss a wide variety of options available to meet a specific need, identify the pros and cons of each option, and help focus on one or two most favorable approaches. For instance, in one situation a water district needed to transfer water from one canal to another to provide water to small cities on the Valley's east side. This is a unique situation brought on by the unprecedented limitations on water delivery into the Friant-Kern canal, and so the water district did not possess the water-pumping infrastructure to accommodate the need. The District was able to meet face-to-face with the water district, work with them to understand their needs, and devise a plan using the cleanest possible portable engines registered by the state on a temporary basis to fill the immediate need and a longer-range plan to install the necessary electrical pumping capacity for future needs.

Promote Use of Less Water Intensive Conservation Management Practices (CMPs), Develop New CMPs, and Streamline Revisions of Existing CMP Plans:

Under District Rule 4550, most agricultural sources in the San Joaquin Valley are required to develop and implement CMP plans to control dust emissions from their agricultural operations during periods of peak activity. Many of the measures currently employed to control dust involve application of water. Although water remains an effective dust suppression tool, the District has developed the following dust suppression alternatives that can satisfy the requirements of the District rule:

- Restricting access to unpaved roads and open areas
- Placing and enforcing speed limit signs
- Covering an unpaved road or open area with a dust suppressant (resins/emulsions, polymers, surfactants, adhesives, bituminous materials, salts)

- Covering an unpaved road or open area with material such as almond shells
- Applying gravel or decomposed granite

The District will ramp up efforts to educate farmers and promote the use of the above alternatives during the current drought. Switching previously approved CMPs requires District action to formally approve the revised CMP plan. The District will develop and implement new streamlined measures to approve modifications to CMP plans expeditiously. Recognizing the fact that some farmers may be faced with unique circumstances that demand alternatives other than those described above, the District will work with agricultural representatives to develop additional alternative dust control measures.

Investigate and Expedite Development of Changes to District's Portable Equipment Registration Rule for Emergency Actions:

The District's existing portable equipment registration rule was designed to address the unique nature of operations that require portable equipment. However, we may find that some provisions in the current rule fail to appropriately address emergency circumstances. As we work with farmers and water districts to assist with drought relief efforts we may encounter circumstances that warrant amendments to the existing rule. It is recommended that your Board authorize the Executive Director/APCO to investigate potential needs for rule amendment and should such amendments be necessary, given that time is of the essence, expedite rule adoption by streamlining the associated administrative processes. Such measures may include consolidated public workshops and quick turnaround on receiving and addressing public comments.

Attachment: Example Compliance Assistance Bulletin (2 pages)

San Joaquin Valley Unified Air Pollution Control District
Meeting of the Governing Board
April 17, 2014

**EMERGENCY MEASURES TO ASSIST WITH DROUGHT RELIEF ACTIONS
BY WATER DISTRICTS AND FARMERS**

Attachment:

**EXAMPLE COMPLIANCE ASSISTANCE BULLETIN
(2 PAGES)**

COMPLIANCE ASSISTANCE BULLETIN
March 2014

Electrification of New Irrigation Wells

The San Joaquin Valley Air Pollution Control District (District) is providing information regarding the electrification of new agricultural irrigation wells with the District.

Electrification Process

Electric motors do not require a Permit to Operate (PTO) or Permit-Exempt Equipment Registration (PEER) with the District. The District fully supports electrification of agricultural irrigation wells, and is happy to assist well-drilling operations and farmers to electrify irrigation systems. The District also recognizes the need to occasionally utilize an internal combustion (IC) engine to generate electricity while a power utility company extends the electric line to the new well location. However, such use of an IC engine requires a Permit or a Permit-Exempt Equipment Registration (PEER) from the District.

Expedited Processing

Farms subject to District permits must obtain an Authority to Construct (ATC) permit from the District in order to install and operate a new IC engine greater than 50 horsepower (continuous rating). The District has committed to expediting processing of ATC permit applications for these short-term generator installations, and **will issue these ATC permits within ten days** of receipt of a complete application, unless a public notice is triggered (larger engines only). Once the ATC permit has been issued by the District, the IC engine may be installed and operated.

Farms that are exempt from District permits require a District Permit-Exempt Equipment Registration (PEER) for each engine greater than 50 horsepower (continuous rating). Farm owners and operators that qualify for the PEER program may **install and operate the engine prior to obtaining PEER registration**, provided the PEER application is filed prior to first operation of the new engine.

Please note, whether the engine requires an ATC permit or PEER, the emission requirements are identical. A newly-installed diesel-fired IC engine must be certified to the latest available tier standards. In most cases, the latest available tier is Tier 4.

However, a previous tier engine may be allowed if the District receives a written statement explaining how a Tier 4 engine is not available due to circumstances beyond

the control of the owner/operator.

Farmers should be aware of whether their farm is large enough to trigger permitting requirements, or is small enough to allow the use of PEER. **If not, the District's Small Business Assistance (SBA) office is also available to assist you with your permitting determinations and application submittals. You may contact an SBA engineer at (559) 230-5888.**

ATC permit application forms for agricultural operations and engines are found at the following web page: <http://www.valleyair.org/farmpermits/applications.htm> (look about two-thirds down the page).

PEER applications are found at the following website:
<http://www.valleyair.org/busind/pto/PEER/ApplicationForms.htm>

Please note, upon electrification and removal of a temporary IC engine, please contact the District in order to cancel your permit or PEER.

Well Drilling Engines

Owners or Operators of portable IC engines 50 horsepower and greater powering **well drilling equipment** must register those units under the Statewide Portable Equipment Registration Program (PERP) with the California Air Resources Board (CARB) or under Rule 2280 (Portable Equipment Registration) with the District. A state PERP allows operation of the equipment throughout California without having to obtain individual stationary source construction and operating permits from local air districts, while a District portable registration allows operation of the equipment throughout the District without having to obtain individual stationary source construction and operating permits.

Please utilize the following website for information and applications regarding the state PERP: <http://www.arb.ca.gov/portable/portable.htm>

To speak to a PERP information contact at CARB, call (916) 324-5869 or e-mail at portable@arb.ca.gov

Please utilize the following website for information and applications regarding the District Rule 2280 portable registration: <http://www.valleyair.org/busind/pto/regis.htm>

Additional Help

Please call one of these District **Small Business Assistance (SBA)** hotlines for assistance with any questions regarding this Compliance Assistance Bulletin:

Modesto Office:	209-557-6446
Fresno Office:	559-230-5888
Bakersfield Office:	661-392-5665

Please also visit the District's website at www.valleyair.org for additional information about the District. Thank you.