Appendix A: Media Coverage

This section provides downloaded news articles (provided as links in the main text) produced by local media in Clark County, Nevada, and weather alert text products from the National Weather Service (downloaded from Iowa State Mesonet [https://mesonet.agron.iastate.edu/]) covering the high-wind dust event that occurred on April 11, 2022.



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Tweet



Clark County Nevada @ClarkCountyNV

A Dust Storm Warning has been issued by the @NWSVegas. It's nasty and dangerous outside right now. These are views from our Gov't. Ctr. in downtown Las #Vegas. Can barely see past the @stratvegas a few blocks away. Mountains to the west are totally shrouded. #VegasWeather.

...

<u>,</u>↑,



2:39 PM · Apr 11, 2022

69 Retweets 21 Quotes 172 Likes 5 Bookmarks

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Tweet



Dust Storm Warning 🦺 | 220pm PDT

In effect for central Clark County, including Highway 95 between Interstate 11 and Highway 165.

...

Visibility is greatly reduced! If driving, pull aside, turn off all lights, and wait until you feel safe to drive again.

#NVwx







Dust Storm Warning 🤼 | 230pm PDT

In effect for central Clark County, including the Las Vegas Valley and I-15.

...

Visibility is greatly reduced! If driving, pull aside, turn off all lights, and wait until you feel safe to drive again.

#NVwx

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Spring storm brings windy, cooler weather to Las Vegas

RJ reviewjournal.com/local/weather/spring-storm-brings-windy-cooler-weather-to-las-vegas-2559453

Glenn Puit

April 11, 2022



The formidable low-pressure system that swept through Southern Nevada brought a peak wind gust to the region of 76 mph at Angel Peak in the Spring Mountains, the National Weather Service said early Tuesday.

Morgan Stessman, weather service meteorologist, said in the Las Vegas Valley a wind gust of 64 mph was measured in the Red Rock Canyon area on Monday. At the North Las Vegas Airport, the maximum wind speed was 61 mph, and at Harry Reid International Airport, the wind speed number hit 54 mph.

Henderson, meanwhile, saw a peak wind gust of 53 mph.

Despite the powerful gusts, preliminary reports indicate the damage caused by the system was relatively modest. A convenience store gas pump awning was damaged at the intersection of Tropicana Avenue and Jones Boulevard. There were also sporadic reports of downed trees and damage to windows.

"It is definitely not as bad as it could have been," Stessman said. "They've (the wind speeds) really come down over the last few hours."

Today's weather highlights will feature declining wind speeds and temperatures. The high for Tuesday was forecast to be 62 degrees, which is 15 degrees cooler than Monday.

On Monday, the National Weather Service had issued an advisory that a dust channel in Sandy Valley was moving northeast toward the Las Vegas Valley.

Cameras on Interstate 15 at the California-Nevada border showed powerful, frenzied winds. The National Weather Service had warned that there was less than a quarter-mile visibility with winds blowing at more than 60 mph. Meanwhile, powerful 60 mph winds swept into western Nevada on Monday.

The National Weather Service in Reno said blowing dust cut down visibility across Pershing, Churchill and Mineral counties. It affected traffic on U.S. Highway 395 and Interstate 580 corridors. A tractor trailer was blown over on Highway 395 in California.

Contact Glenn Puit at gpuit@gmail.com. Follow @GlennatRJ on Twitter.

— Review-Journal writer Marvin Clemons and The Associated Press contributed to this report.

Dust storm causes issues for Clark County on Monday

3. news3lv.com/news/local/high-wind-warning-issued-for-southern-nevada-as-strong-gusts-expected

by Chloe Koast, Brett Forrest, KSNV Staff

Mon, April 11th 2022 at 8:20 AM Updated Mon, April 11th 2022 at 11:07 PM





Dust Storm Warning was in effect for Las Vegas and southern Nevada. (KSNV)

UPDATE 2: Monday's gusty and dusty day prompted the Clark County Department of Environment and Sustainability (DES) to issue an Air Quality Advisory.

Air quality around the Las Vegas Valley registered "Hazardous" and off the charts at certain times Monday.

On days with Air Quality Advisories, DES offers tips to limit exposure to dust including:

- Limit outdoor exertion on windy days when dust is in the air. Exercise, for example, makes you breathe heavier and increases the number of particulates you are likely to inhale.
- Keep windows and doors closed.

- Run your air conditioner inside your house and car to filter out particulates.
- Consider changing your indoor air filters if they are dirty.
- To keep dust down, drive slowly on unpaved roads.
- Don't take shortcuts across vacant lots.
- Ride off-road vehicles in approved areas outside the urban Las Vegas Valley.
- Call Environment and Sustainability's dust complaint hotline at 702-385-DUST (3878) to report excessive amounts of blowing dust from construction sites, vacant lots or facilities.

UPDATE: A DUST STORM WARNING was in effect for central Clark County, including the Las Vegas valley and I-15 until 4:15 p.m. on Monday.

Visibility is greatly reduced. If driving, pull-aside, turn off all lights, and wait until you feel safe to drive again.

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ORIGINAL STORY

High winds are expected from a potent storm arriving from the northwest. This will likely be the strongest wind event of the season so far.

A "HIGH WIND WARNING" will go into effect at 11 a.m. Monday through 3 a.m. Tuesday in Southern Nevada for sustained southwest winds 35-45 mph and wind gusts 50-70 mph. The strongest winds will occur in the foothills of the Spring Mountains and Red Rock Canyon.

Make sure to secure loose items around your home before the winds pick up. Areas of blowing dust are expected along with difficult travel for high-profile vehicles.

High temperatures will reach around 80 degrees in Las Vegas with winds starting off 5 to 15 mph in the morning, increasing to 15-35 mph winds in the afternoon, and 30-40 mph in the evening. Winds will be the strongest in the afternoon through the evening commute with wind gusts over 50 mph.

Gusty winds will continue Monday night with overnight lows dropping to around 48 degrees in Las Vegas.

After the cold front passes, our high temperatures will drop to the low 60s on Tuesday with lingering breezes.

Temperatures will climb after that, followed by our next weathermaker (another wind event) moving in on Saturday (winds roughly 15 to 25 mph and not as strong as Monday's storm).

The Saturday storm should clear just in time for the Easter Bunny's arrival! We'll see sunny skies on Easter Sunday with highs around 79 degrees in Las Vegas.

Dust Storm Warning for Las Vegas & Surrounding Areas

weatherboy.com/dust-storm-warning-for-las-vegas-surrounding-areas

Weatherboy Team Meteorologist

April 11, 2022



A serious dust storm is impacting Las Vegas and surrounding areas this afternoon; people should stop any travel and seek shelter inside until the storm passes. Image: Clark County Nevada

The National Weather Service has issued a Dust Storm Warning for Las Vegas and surrounding areas through 4:15 pm today due to potentially life-threatening conditions. The Warning includes the Las Vegas Valley, I-15 from Primm to the northeast side of the Valley, and Red Rock Canyon. In this area, people can expect dangerously low visibility, blowing dust, and strong, gusty winds.

Similar to a blizzard or snow squall that can bring about low visibility suddenly, a dust storm can completely obscure vision within a matter of seconds. Driving through such a storm can be life threatening and should be avoided. The National Weather Service cautions, "If driving, pull over and turn off all lights. Remove your foot from the brake."

An extremely dangerous situation is unfolding around Las Vegas. Avoid travel and seek safe shelter indoors away from the #DustStorm.#NVwx #LVwx https://t.co/rcFemVR8Rk

— the Weatherboy (@theWeatherboy) April 11, 2022

According to the National Weather Service in Las Vegas, a dense dust channel was still occurring across Highway 95 between Goldfield and Tonopah. Other areas of blowing dust could be seen on satellite along Highway 95 and 6 west of Tonopah. Another dust channel was 18 miles southeast of Pierce Ferry and Antares Roads, roughly 30 miles north of Kingman. A dust channel also exists near Sandy Valley; it is moving northeast towards the Las Vegas Valley, moving northeast at 55 mph. In these areas, visibility is dropping below 1/4 mile; damaging winds in excess of 60 mph are also occurring. The combined impact of damaging wind gusts and blowing sand could have a sand-blasting effect on vehicles and their windshields, leading to additional visibility challenges.



The Dust Storm Warning area includes I-15 and Las Vegas. Image: NWS



Dust storm warning issued for central Clark County

Ktnv.com/news/dust-storm-warning-issued-for-central-clark-county

KTNV Staff

April 11, 2022



LAS VEGAS (KTNV) — Central Clark County is under a dust storm warning until 4:15 p.m. on Monday.

The National Weather Services issued the alert warning travelers as of 2:20 p.m. The impacted area includes the Las Vegas valley and Interstate 15.

Impacted locations include:

- The Las Vegas valley
- I-15 from Primm to the northeast side of the Las Vegas valley
- Red Rock Canyon
- Highway 95 between Interstate 11 to the Highway 165 intersection

"Be ready for sudden drop to zero visibility," the NWS warned drivers in an emergency alert.

Dust Storm Warning has been issued for southern Clark county and Mohave county. Reduced visibility and hazardous conditions. Stay safe on the roads! #nvwx #lasvegasweather pic.twitter.com/T0VQa748n6

- Bree Guy (@breeguywx) April 11, 2022

Potential hazards from this storm include low visibility, blowing dust, and gusty winds, forecasters said.

If you are driving and visibility drops, you're advised to pull far off the road and put your vehicle in park. Then, turn off all lights on your vehicle and remove your foot from the brake. Resume driving once the dust has cleared and you feel it is safe to do so.

Why turn off your lights in a dust storm? Meteorologist Justin Bruce weighs in with this answer:

"If you pull your car over but leave the lights on in a dust storm, someone might drive off the road and right into you because they think you're still moving and can't see anything."

MORE TIPS: Safety tips for dust storms, downed power lines

Prior to the dust storm warning, a high wind warning was issued for the Las Vegas valley and southern Nye County. That warning is in effect through 3 a.m. Tuesday.

Wind speeds of between 25 to 35 mph were in the forecast, with projected gusts of 50 to 60 mph.

High winds can topple trees, down power lines, and damage weakened roofs or buildings. People in the impacted areas were advised to be careful and expect that travel would be difficult, especially for high-profile vehicles.

Send weather photographs and videos to photos@ktnv.com with your name and the location and we may use them online and/or on-air.



County Commission: James B. Gibson, Chairman Justin Jones, Vice Chairman Marilyn Kirkpatrick William McCurdy II Ross Miller Michael Naft Tick Segerblom

Yolanda King, County Manager

Monday, April 11, 2022

Office of Public Communications • (702) 455-3546 • FAX (702) 455-3558 • www.ClarkCountyNV.gov

Contact: Kevin J. MacDonald Public Information Officer Mobile: E-mail: (702) 232-0931 KevMac@ClarkCountyNV.gov

For Immediate Release

Air Quality Dust Advisory Issued for Monday

The Clark County Department of Environment and Sustainability has issued a dust advisory for **Monday, April 11**, to advise residents and local construction sites of the possibility of elevated levels of blowing dust due to the forecast of high winds in our area.

Airborne dust is a form of inhalable air pollution called particulate matter or PM, which aggravates respiratory diseases. Under windy conditions people with heart or lung disease, older adults, and children may feel better staying indoors as much as possible because they could be at greater risk from particulates,



especially when they are physically active, according to the U.S. Environmental Protection Agency. Consult your physician if you have a medical condition that makes you sensitive to air pollution.

The EPA's Air Quality Index translates air quality data into colors to help people understand when they may experience health effects from air pollution. An AQI of 101 or more is considered a level that may be unhealthy for sensitive groups of people. Tips to limit exposure to dust include:

- Limit outdoor exertion on windy days when dust is in the air. Exercise, for example, makes you breathe heavier and increases the amount of particulates you are likely to inhale.
- Keep windows and doors closed.
- Run your air conditioner inside your house and car to filter out particulates.
- Consider changing your indoor air filters if they are dirty.
- To keep dust down, drive slowly on unpaved roads.
- Don't take short cuts across vacant lots.
- Ride off-road vehicles in approved areas outside the urban Las Vegas Valley.
- Call Environment and Sustainability's dust complaint hotline at 702-385-DUST (3878) to report excessive amounts of blowing dust from construction sites, vacant lots or facilities.

[more]

Clark County news releases may be found at <u>www.ClarkCountyNV.gov</u>. You may also follow the County on more than 40 social media sites, including **Facebook**, **Twitter**, **Instagram**, **LinkedIn**, **Pinterest** and **YouTube**.

News Release

Air Quality Dust Advisory, cont.

STAY UP TO DATE WITH AIR QUALITY INFORMATION

The Department of Environment and Sustainability monitors air pollution through a network of monitoring sites throughout the Las Vegas Valley. Data is collected from these sites and reported at our monitoring website: DESAQMonitoring.ClarkCountyNV.gov. People can stay informed through a couple channels:

- Social Media: Read air quality updates in your Facebook news feed or tweets. On Facebook: <u>www.facebook.com/SustainClarkCounty</u>, Twitter: <u>@SustainClarkCty</u> and Instagram: <u>@sustainclarkcounty</u>.
- EnviroFlash: Receive daily text or email messages with the latest air quality information. Learn more at <u>www.enviroflash.org</u>. The Dept. of Environment and Sustainability also issues advisories and alerts for ozone and other pollutants such as dust, smoke and other particulate matter.
- **AIRNow:** Check air quality forecasts, current conditions and the Air Quality Index (AQI) for Clark County at <u>AIRNow's website</u>.

###

About the Department of Environment and Sustainability

The Department of Environment and Sustainability is the air pollution control agency, regional Endangered Species Act compliance program, and sustainability office for all of Clark County, Nevada. Established as the Department of Air Quality by the Clark County Commission in 2001, it was renamed in 2020 and is comprised of three divisions: Air Quality, Desert Conservation Program and Office of Sustainability. Through these three divisions, DES is ensuring the air we share meets healthful, regulatory standards, administering the County's Multiple Species Habitat Conservation Plan and addressing climate change through the All-In Clark County initiative.

Clark County is a dynamic and innovative organization dedicated to providing top-quality service with integrity, respect and accountability. With jurisdiction over the world-famous Las Vegas Strip and covering an area the size of New Jersey, Clark is the nation's 11th-largest county and provides extensive regional services to 2.3 million citizens and 45.6 million visitors a year (2019). Included are the nation's 9th-busiest airport, air quality compliance, social services and the state's largest public hospital, University Medical Center. The County also provides municipal services that are traditionally provided by cities to 1 million residents in the unincorporated area. Those include fire protection, roads and other public works, parks and recreation, and planning and development.

Dust storm batters Las Vegas; National Weather Service issued warning for area

fox10phoenix.com/news/las-vegas-haboob-national-weather-service-issues-dust-storm-warming

FOX 10 Phoenix

LAS VEGAS, Nev. - Parts of Las Vegas were impacted by a spring dust storm on April 11.

According to the National Weather Service, a Dust Storm Warming was issued for the Las Vegas Valley and I-15, south to the Nevada-California State Line, until 4:15 p.m. Subsequently, a Dust Storm Warning wa issued for parts of Arizona's Mohave County, until 9:00 p.m.

Video from the Las Vegas Strip area show decreased visibility as a result of the storm.

According to information by NWS' Las Vegas office, a potent weather system was forecast to bring strong winds across the entire area, with gusts as high as 50 to 77+ mph possible.

In a Public Information Statement NWS officials released, it was revealed that wind speeds reached 54 mph at Harry Reid International Airport (formerly named McCarran International Airport), which is located near the southern part of The Strip.

In Arizona, wind speeds reached 61 mph at one point at Kingman Airport, and other parts of northern Arizona also recorded higher wind speeds.

This story was reported on from Phoenix.

Las Vegas dust storm

A dust storm has rolled over Las Vegas, Nevada on the afternoon of April 11.

13 First Alert Weather | Monday morning, Apr. 11, 2022

11-2022 ktnv.com/weather/13-first-alert-weather-forecast-monday-morning-apr-11-2022

Justin Bruce

April 11, 2022



LAS VEGAS — Southwest gusts will hit 50-75 mph this afternoon (see list below), causing blowing dust, poor visibility, spotty power outages, strong crosswinds, and blowing debris. A High Wind Warning is in place until 3 a.m. Daytime highs reach the upper 70s with a mix of sun and high clouds, which will thicken this afternoon. Northwest winds after midnight will still gust to 45 mph, with lows in the upper 40s. Northwest gusts to 30 mph continue Tuesday, with much cooler afternoon highs in the low 60s. We'll be either side of 40° early Wednesday morning, which is quite cool for April. Wednesday afternoon delivers upper 60s, a mostly sunny sky, and south breezes at 10-20 mph. Thursday is breezy (southwest gusts 25 mph) and in the mid 70s, with near 80° highs Friday and Saturday as southwest gusts blow at 25 mph and 35 mph, respectively. North gusts to 25 mph on Sunday with sunshine and highs in the upper 70s.

Possible maximum wind gusts this afternoon and early evening, in mph: Summerlin West 75 Red Rock 75 Lone Mountain 70 Downtown Summerlin Rhodes Ranch 70 Mountain's Edge 65 Centennial Hills 60 Anthem/Inspirada/Seven Hills 60 Aliante 55 Green Valley/Silverado Ranch 55 Downtown Las Vegas 50 North Las Vegas 50 Nellis AFB 50 Sunrise Manor/Whitney Ranch 50 Downtown Henderson 50 Laughlin 50 Mesquite 50 Boulder City 45

Potentially damaging winds, dust hit parts of Nevada

5 fox5vegas.com/2022/04/11/potentially-damaging-winds-dust-hit-parts-nevada

By The Associated Press

April 11, 2022



LAS VEGAS (AP) — Unusually gusty winds have been sweeping through parts of Nevada, spurring a dust storm warning in metro Las Vegas.

High gusts between 30-40 mph (48-64 kph) have already been reported Monday around Nellis Air Force Base and areas of greater Las Vegas.

The National Weather Service issued an advisory that a dust channel in Sandy Valley was moving northeast toward the Las Vegas Valley.

Las Vegas, Henderson and North Las Vegas are among the cities that will be impacted.

Cameras on I-15 at the California-Nevada border show powerful, frenzied winds. The National Weather Service has warned that there is less than a quarter-mile visibility with winds going at more than 60 mph (97 kph).

A high wind warning is expected to last until 3 a.m. Tuesday.

Meanwhile, powerful 60 mph (97 kph) winds have swept into western Nevada.

The National Weather Service in Reno anticipates blowing dust cutting down visibility across Pershing, Churchill and Mineral counties. It will likely affect traffic in Highway 395 and Interstate 580 corridors.

A high wind warning is in effect for the Greater Reno, Sparks, Carson City, Minden until 8 p.m. Monday.

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Potentially Damaging Winds, Dust Hit Parts of Nevada

usnews.com/news/best-states/nevada/articles/2022-04-11/potentially-damaging-winds-dust-hit-parts-of-nevada

Associated Press

U.S.News

Unusually gusty winds have been sweeping through parts of Nevada, spurring a dust storm warning in metro Las Vegas.

LAS VEGAS (AP) — Unusually gusty winds have been sweeping through parts of Nevada, spurring a dust storm warning in metro Las Vegas.

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Tags: Associated Press, Nevada, weather

Potentially damaging winds, dust hit parts of Nevada

kion546.com/news/2022/04/11/potentially-damaging-winds-dust-hit-parts-of-nevada

Associated Press

April 11, 2022

AP Nevada



LAS VEGAS (AP) — Unusually gusty winds have been sweeping through parts of Nevada, spurring a dust storm warning in metro Las Vegas. High gusts between 30-40 mph have already been reported Monday around Nellis Air Force Base and areas of greater Las Vegas. High gusts between 30-40 mph (48-64 kph) have already been reported Monday around Nellis Air Force Base and areas of greater Las Vegas. Meanwhile, powerful 60 mph winds have swept into western Nevada. The National Weather Service in Reno anticipates blowing dust cutting down visibility across Pershing, Churchill and Mineral counties. A high wind warning is in effect for the Greater Reno, Sparks, Carson City, Minden until 8 p.m.

Potentially damaging winds, dust hit parts of Nevada

AP apnews.com/article/storms-reno-nevada-las-vegas-weather-75dd357f66149609d0101dd813e2c332

April 11, 2022



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A high wind warning is in effect for the Greater Reno, Sparks, Carson City, Minden until 8 p.m. Monday.

Dust storm warnings pass; gusts reach 54 at Reid International Airport

April 11, 2022

LAS VEGAS (KLAS) — A 54 mph gust was recorded at Harry Reid International Airport, and gusts reached 50 mph at Red Rock National Conservation Area and Mountain Springs on Monday.

High winds are continuing after a dust storm warning expired at 4:15 in the Las Vegas valley.

Wind damage at 7-Eleven at Tropicana and Jones - Video from Andros Sant

Dust storm warnings that started early Monday afternoon in east San Bernardino County and Primm have moved eastward, and are now in effect in west central Mohave County in Arizona. At 4:47 p.m. Arizona time, a dust channel was 14 miles northwest of Dolan Springs, near White Hills, moving northeast at 45 mph.

Winds kicked up dust in Las Vegas all afternoon, reducing visibility.



Photo taken from a plane over Henderson looking SE over the remote area of Boulder City south of the townsite. (Photo: Dhaval Patel)

The National Weather Service advised motorists to avoid dust storms. "Dust storms lead to dangerous driving conditions with visibility reduced to near zero. If driving, avoid dust storms if possible. If caught in one, pull off the road, turn off your lights and keep your foot off the brake."

Earlier reports showed the storms moving across the desert as they approached Las Vegas.

"At 222 PM PDT, a dust channel was originating from Sandy Valley and moving northeast toward the Las Vegas Valley, moving northeast at 55 mph," according to the National Weather Service. "Locations impacted include... Las Vegas, Henderson, North Las Vegas, Blue Diamond, GoodSprings and Sandy Valley."

Related Content

High Wind Warning: Gusts could be up to 70 mph

NV Energy reported that over 4,500 customers were without power Monday afternoon.



Las Vegas Strip (Photo: KLAS)

A camera on I-15 at the California border shows winds whipping up dust. The National Weather Service reports less than a quarter-mile visibility with damaging winds in excess of 60 mph.



(National Weather Service)

A high wind warning is in effect from 11 a.m. Monday to 3 a.m. Tuesday.

An aviation weather warning kicked in at 2:23 p.m., and will remain in effect until 6:15 p.m. No delays have been reported at Harry Reid International Airport.

Sustained winds at Nellis Air Force Base are at 30 mph, with gusts to near 40 mph.

Gusts reported around the valley so far:

- 51 mph Mountain Springs
- 47 mph Nellis AFB
- 40 mph Southern Highlands
- 54 mph Harry Reid International Airport
- 53 mph Henderson Executive Airport St. Rose Pkwy.
- 50 mph Red Rock National Conservation Area
- 51 mph North Las Vegas Airport

Sustained between 30 and 40 mph can also bring damage by pulling down tree limbs, shallow-rooted trees, unsecured signs and awnings.

Pedestrian safety is also an issue today as people walking might not be paying as close attention to traffic as they are fighting dust in their eyes.

Due to the high winds, The Neon Museum announced that it will be closed Monday night, and that all ticket holders will be contacted directly.

Also on Monday, U.S. 93 in Arizona between I-40 and Phoenix is closed, according to a tweet from the RTC of Southern Nevada. A major crash on U.S. 93 is reported, although it is unclear at this time if wind was a factor. At least one death is reported in the crash, which involved two commercial vehicles and a pickup truck.

High Wind Warning for Las Vegas valley: Safety tips for dust storms, downed power lines

yahoo.com/news/high-wind-warning-las-vegas-133945753.html

KTNV - Las Vegas Scripps

Monday's forecast calls for strong wind across the valley with a High Wind Warning and Wind Advisory in place.

3/23/23, 8:47 AM	IEM :: NPW from NWS VEF	
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108 WWUS75 KVEF 111000 NPWVEF **URGENT - WEATHER MESSAGE** National Weather Service Las Vegas NV 300 AM PDT Mon Apr 11 2022 AZZ001-003-036-NVZ014-016-018-021-111830-/0.UPG.KVEF.WI.Y.0016.220411T1800Z-220412T1000Z/ /0.EXA.KVEF.HW.W.0003.220411T1800Z-220412T1000Z/ Northwest Plateau-Northwest Deserts-Lake Mead National Recreation Area-Esmeralda and Central Nye County-Northeast Clark County-Sheep Range-Including Colorado City, Pipe Spring National Monument, Tuweep, Mt Trumbull, Western Grand Canyon, Kingman, Golden Valley, Dolan Springs, Valentine, Wikieup, Yucca, Bullhead City, Oatman, Mohave Valley, Beatty, Goldfield, Silver Peak, Dyer, Mesquite, Overton, Moapa, Hayford Pk, Hoover Dam, and Laughlin 300 AM PDT Mon Apr 11 2022 /300 AM MST Mon Apr 11 2022/ ...HIGH WIND WARNING IN EFFECT FROM 11 AM PDT /11 AM MST/ THIS MORNING TO 3 AM PDT /3 AM MST/ TUESDAY... * WHAT...Southwest winds 30 to 40 mph with gusts up to 60 mph expected. * WHERE...Portions of northwest Arizona and southern Nevada. * WHEN...From 11 AM PDT /11 AM MST/ this morning to 3 AM PDT /3 AM MST/ Tuesday. * IMPACTS...Gusty winds could blow around unsecured objects. Winds this strong can make driving difficult...especially for motorcycles and high profile vehicles and create areas of blowing dust or sand...resulting in briefly lowered visibilities to well under a mile at times. Dangerous boating conditions will occur on Lake Mead and Lake Mohave. * ADDITIONAL DETAILS... PRECAUTIONARY/PREPAREDNESS ACTIONS... Use extra caution when driving, especially if operating a high profile vehicle. Secure outdoor objects. Postpone boating plans on Lake Mead and Lake Mohave or stay in sheltered areas. &&

CAZ519>521-111830-/O.CON.KVEF.HW.W.0003.220411T1800Z-220412T1000Z/ Eastern Sierra Slopes-Owens Valley-White Mountains of Inyo County-Including Aspendell, Whitney Portal, Bishop, Independence, Lone Pine, Olancha, Westgard Pass, and Bristlecone Pine 300 AM PDT Mon Apr 11 2022

...HIGH WIND WARNING REMAINS IN EFFECT FROM 11 AM THIS MORNING TO 3 AM PDT TUESDAY...

- * WHAT...West winds 35 to 45 mph with gusts 60 to 75 mph expected.
- * WHERE...Eastern Sierra Slopes, Owens Valley and White Mountains of Inyo County.
- * WHEN...From 11 AM this morning to 3 AM PDT Tuesday.
- * IMPACTS...High winds can topple trees...down power lines...and remove shingles or blow weakened roofs off buildings. Travel will be difficult and dangerous along sections of Highway 395 in the Owens Valley, especially for high profile vehicles.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

Take action to secure trash cans...lawn furniture...and other loose or lightweight outdoor objects. Drivers of vans...campers... trailers...and other high profile vehicles should be alert to the danger of these winds. Use extra caution if you must drive.

&&

\$\$

CAZ522>524-111830-/O.CON.KVEF.HW.W.0003.220411T1800Z-220412T1000Z/ Death Valley National Park-Western Mojave Desert-Eastern Mojave Desert-Including Furnace Creek, Stovepipe Wells, Shoshone, Barstow, Daggett, Fort Irwin, Baker, Mountain Pass, and Mitchell Caverns 300 AM PDT Mon Apr 11 2022HIGH WIND WARNING REMAINS IN EFFECT FROM 11 AM THIS MORNING TO 3 AM PDT TUESDAY... * WHAT...West winds 35 to 45 mph with gusts 60 to 70 mph expected. * WHERE...Western Mojave Desert and Eastern Mojave Desert.

* WHEN...From 11 AM this morning to 3 AM PDT Tuesday.

* IMPACTS...High winds can topple trees...down power lines...and remove shingles or blow weakened roofs off buildings. Travel will be difficult, especially for high profile vehicles. PRECAUTIONARY/PREPAREDNESS ACTIONS... Take action to secure trash cans...lawn furniture...and other loose or lightweight outdoor objects. Drivers of vans...campers... trailers...and other high profile vehicles should be alert to the danger of these winds. Use extra caution if you must drive. && \$\$ NVZ017-019-020-022-111830-/0.CON.KVEF.HW.W.0003.220411T1800Z-220412T1000Z/ Western Clark and Southern Nye County-Spring Mountains-Red Rock Canyon-Las Vegas Valley-Southern Clark County-Including Pahrump, Indian Springs, Desert Rock, Amargosa Valley, The Town Of Mt Charleston, Red Rock Canyon, Las Vegas, North Las Vegas, Henderson, Boulder City, Primm, Searchlight, and Cal-Nev-Ari 300 AM PDT Mon Apr 11 2022 ... HIGH WIND WARNING REMAINS IN EFFECT FROM 11 AM THIS MORNING TO 3 AM PDT TUESDAY... * WHAT...Southwest winds 35 to 45 mph with gusts 50 to 70 mph expected. * WHERE...Spring Mountains-Red Rock Canyon, Las Vegas Valley and Southern Clark County. * WHEN...From 11 AM this morning to 3 AM PDT Tuesday. * IMPACTS...High winds can topple trees...down power lines...and remove shingles or blow weakened roofs off buildings. Travel will be difficult, especially for high profile vehicles. * ADDITIONAL DETAILS... The highest winds will be near the foothills of the Spring Mountains and Red Rock Canyon. PRECAUTIONARY/PREPAREDNESS ACTIONS... Take action to secure trash cans...lawn furniture...and other loose or lightweight outdoor objects. Drivers of vans...campers...trailers...and other high profile vehicles should be alert to the danger of these winds. Use extra caution if you must drive.

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CAZ525-111830-/O.EXT.KVEF.WI.Y.0016.220411T1800Z-220412T1200Z/ Morongo Basin-Including Morongo Valley, Yucca Valley, and Twentynine Palms 300 AM PDT Mon Apr 11 2022 ...WIND ADVISORY NOW IN EFFECT FROM 11 AM THIS MORNING TO 5 AM PDT TUESDAY...

- * WHAT...West winds 20 to 30 mph with gusts up to 55 mph expected becoming northwest late tonight and early Tuesday morning.
- * WHERE...Morongo Basin including Yucca Valley and Landers.
- * WHEN...From 11 AM this morning to 5 AM PDT Tuesday.
- * IMPACTS...Gusty winds could blow around unsecured objects. Winds this strong can make driving difficult...especially for motorcycles and high profile vehicles and create areas of blowing dust or sand...resulting in briefly lowered visibilities to well under a mile at times.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

Take action to secure trash cans...lawn furniture...and other loose or lightweight outdoor objects. Drivers of vans...campers...trailers...and other high profile vehicles should be alert to the danger of these winds. Use extra caution if you must drive.

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NVZ015-111830-/O.CON.KVEF.WI.Y.0016.220411T1800Z-220412T1000Z/ Lincoln County-Including Caliente, Pioche, Panaca, Hiko, Alamo, and Rachel 300 AM PDT Mon Apr 11 2022

...WIND ADVISORY REMAINS IN EFFECT FROM 11 AM THIS MORNING TO 3 AM PDT TUESDAY...

- * WHAT...West winds 25 to 35 mph with gusts 45 to 55 mph expected.
- * WHERE...Esmeralda and Central Nye County, Lincoln County, Northeast Clark County and Sheep Range.

- * WHEN...From 11 AM this morning to 3 AM PDT Tuesday.
- * IMPACTS...Gusty winds could blow around unsecured objects. Winds this strong can make driving difficult...especially for motorcycles and high profile vehicles and create areas of blowing dust or sand...resulting in briefly lowered visibilities to well under a mile at times.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

Use extra caution when driving, especially if operating a high profile vehicle. Secure outdoor objects.

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752 WWUS75 KVEF 111128 NPWVEF **URGENT - WEATHER MESSAGE** National Weather Service Las Vegas NV 428 AM PDT Mon Apr 11 2022 CAZ523-111830-/O.NEW.KVEF.WI.Y.0017.220411T1128Z-220411T1800Z/ /0.CON.KVEF.HW.W.0003.220411T1800Z-220412T1000Z/ Western Mojave Desert-Including Barstow, Daggett, and Fort Irwin 428 AM PDT Mon Apr 11 2022 ...WIND ADVISORY IN EFFECT UNTIL 11 AM PDT THIS MORNING... ... HIGH WIND WARNING REMAINS IN EFFECT FROM 11 AM THIS MORNING TO 3 AM PDT TUESDAY... * WHAT...For the High Wind Warning, west winds 35 to 45 mph with gusts up to 65 mph expected. For the Wind Advisory, southwest winds 25 to 35 mph with gusts up to 50 mph. * WHERE...Western Mojave Desert. * WHEN...For the High Wind Warning, from 11 AM this morning to 3 AM PDT Tuesday. For the Wind Advisory, until 11 AM PDT this morning. * IMPACTS...High winds can topple trees...down power lines...and remove shingles or blow weakened roofs off buildings. Travel will be difficult, especially for high profile vehicles. PRECAUTIONARY/PREPAREDNESS ACTIONS... Take action to secure trash cans...lawn furniture...and other loose or lightweight outdoor objects. Drivers of vans...campers... trailers...and other high profile vehicles should be alert to the danger of these winds. Use extra caution if you must drive. && \$\$ CAZ519>521-111830-/0.CON.KVEF.HW.W.0003.220411T1800Z-220412T1000Z/ Eastern Sierra Slopes-Owens Valley-White Mountains of Inyo County-Including Aspendell, Whitney Portal, Bishop, Independence, Lone Pine, Olancha, Westgard Pass, and Bristlecone Pine 428 AM PDT Mon Apr 11 2022

3/23/23, 8:51 AM

...HIGH WIND WARNING REMAINS IN EFFECT FROM 11 AM THIS MORNING TO 3 AM PDT TUESDAY...

- * WHAT...West winds 35 to 45 mph with gusts 60 to 75 mph expected.
- * WHERE...Eastern Sierra Slopes, Owens Valley and White Mountains of Inyo County.
- * WHEN...From 11 AM this morning to 3 AM PDT Tuesday.
- * IMPACTS...High winds can topple trees...down power lines...and remove shingles or blow weakened roofs off buildings. Travel will be difficult and dangerous along sections of Highway 395 in the Owens Valley, especially for high profile vehicles.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

Take action to secure trash cans...lawn furniture...and other loose or lightweight outdoor objects. Drivers of vans...campers... trailers...and other high profile vehicles should be alert to the danger of these winds. Use extra caution if you must drive.

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CAZ522-524-111830-/O.CON.KVEF.HW.W.0003.220411T1800Z-220412T1000Z/ Death Valley National Park-Eastern Mojave Desert-Including Furnace Creek, Stovepipe Wells, Shoshone, Baker, Mountain Pass, and Mitchell Caverns 428 AM PDT Mon Apr 11 2022

...HIGH WIND WARNING REMAINS IN EFFECT FROM 11 AM THIS MORNING TO 3 AM PDT TUESDAY...

* WHAT...West winds 35 to 45 mph with gusts 60 to 70 mph expected.

- * WHERE...Western Mojave Desert and Eastern Mojave Desert.
- * WHEN...From 11 AM this morning to 3 AM PDT Tuesday.
- * IMPACTS...High winds can topple trees...down power lines...and remove shingles or blow weakened roofs off buildings. Travel will be difficult, especially for high profile vehicles.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

Take action to secure trash cans...lawn furniture...and other loose or lightweight outdoor objects. Drivers of vans...campers...

trailers...and other high profile vehicles should be alert to the danger of these winds. Use extra caution if you must drive.

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AZZ001-003-036-NVZ014-016>022-111830-/0.CON.KVEF.HW.W.0003.220411T1800Z-220412T1000Z/ Northwest Plateau-Northwest Deserts-Lake Mead National Recreation Area-Esmeralda and Central Nye County-Northeast Clark County-Western Clark and Southern Nye County-Sheep Range-Spring Mountains-Red Rock Canyon-Las Vegas Valley-Southern Clark County-Including Colorado City, Pipe Spring National Monument, Tuweep, Mt Trumbull, Western Grand Canyon, Kingman, Golden Valley, Dolan Springs, Valentine, Wikieup, Yucca, Bullhead City, Oatman, Mohave Valley, Beatty, Goldfield, Silver Peak, Dyer, Mesquite, Overton, Moapa, Pahrump, Indian Springs, Desert Rock, Amargosa Valley, Hayford Pk, The Town Of Mt Charleston, Red Rock Canyon, Las Vegas, North Las Vegas, Henderson, Boulder City, Hoover Dam, Laughlin, Primm, Searchlight, and Cal-Nev-Ari 428 AM PDT Mon Apr 11 2022 /428 AM MST Mon Apr 11 2022/

...HIGH WIND WARNING REMAINS IN EFFECT FROM 11 AM PDT /11 AM MST/ THIS MORNING TO 3 AM PDT /3 AM MST/ TUESDAY...

- * WHAT...Southwest winds 35 to 45 mph with gusts 50 to 70 mph expected.
- * WHERE...Spring Mountains-Red Rock Canyon, Las Vegas Valley and Southern Clark County.
- * WHEN...From 11 AM this morning to 3 AM PDT Tuesday.
- * IMPACTS...High winds can topple trees...down power lines...and remove shingles or blow weakened roofs off buildings. Travel will be difficult, especially for high profile vehicles.
- * ADDITIONAL DETAILS...The highest winds will be near the foothills of the Spring Mountains and Red Rock Canyon.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

Take action to secure trash cans...lawn furniture...and other loose or lightweight outdoor objects. Drivers of vans... campers...trailers...and other high profile vehicles should be alert to the danger of these winds. Use extra caution if you must drive. &&

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NVZ015-111830-/O.CON.KVEF.WI.Y.0016.220411T1800Z-220412T1000Z/ Lincoln County-Including Caliente, Pioche, Panaca, Hiko, Alamo, and Rachel 428 AM PDT Mon Apr 11 2022

- ...WIND ADVISORY REMAINS IN EFFECT FROM 11 AM THIS MORNING TO 3 AM PDT TUESDAY...
- * WHAT...West winds 25 to 35 mph with gusts 45 to 55 mph expected.
- * WHERE...Esmeralda and Central Nye County, Lincoln County, Northeast Clark County and Sheep Range.
- * WHEN...From 11 AM this morning to 3 AM PDT Tuesday.
- * IMPACTS...Gusty winds could blow around unsecured objects. Winds this strong can make driving difficult...especially for motorcycles and high profile vehicles and create areas of blowing dust or sand...resulting in briefly lowered visibilities to well under a mile at times.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

Use extra caution when driving, especially if operating a high profile vehicle. Secure outdoor objects.

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CAZ525-111830-/O.CON.KVEF.WI.Y.0016.220411T1800Z-220412T1200Z/ Morongo Basin-Including Morongo Valley, Yucca Valley, and Twentynine Palms 428 AM PDT Mon Apr 11 2022

...WIND ADVISORY REMAINS IN EFFECT FROM 11 AM THIS MORNING TO 5 AM PDT TUESDAY...

- * WHAT...West winds 20 to 30 mph with gusts up to 55 mph expected becoming northwest late tonight and early Tuesday morning.
- * WHERE...Morongo Basin including Yucca Valley and Landers.
- * WHEN...From 11 AM this morning to 5 AM PDT Tuesday.

* IMPACTS...Gusty winds could blow around unsecured objects. Winds this strong can make driving difficult...especially for motorcycles and high profile vehicles and create areas of blowing dust or sand...resulting in briefly lowered visibilities to well under a mile at times.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

Take action to secure trash cans...lawn furniture...and other loose or lightweight outdoor objects. Drivers of vans... campers...trailers...and other high profile vehicles should be alert to the danger of these winds. Use extra caution if you must drive.

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782 WWUS75 KVEF 111647 NPWVEF **URGENT - WEATHER MESSAGE** National Weather Service Las Vegas NV 947 AM PDT Mon Apr 11 2022 CAZ519>521-121000-/0.EXT.KVEF.HW.W.0003.220411T1647Z-220412T1000Z/ Eastern Sierra Slopes-Owens Valley-White Mountains of Inyo County-Including Aspendell, Whitney Portal, Bishop, Independence, Lone Pine, Olancha, Westgard Pass, and Bristlecone Pine 947 AM PDT Mon Apr 11 2022 ... HIGH WIND WARNING NOW IN EFFECT UNTIL 3 AM PDT TUESDAY... * WHAT...West winds 35 to 45 mph with gusts 60 to 75 mph expected. * WHERE...Eastern Sierra Slopes, Owens Valley and White Mountains of Inyo County. * WHEN...Until 3 AM PDT Tuesday. * IMPACTS...High winds can topple trees...down power lines...and remove shingles or blow weakened roofs off buildings. Travel will be difficult and dangerous along sections of Highway 395 in the Owens Valley, especially for high profile vehicles. PRECAUTIONARY/PREPAREDNESS ACTIONS... Take action to secure trash cans...lawn furniture...and other loose or lightweight outdoor objects. Drivers of vans...campers... trailers...and other high profile vehicles should be alert to the danger of these winds. Use extra caution if you must drive. && \$\$ CAZ523-121000-/0.CON.KVEF.HW.W.0003.220411T1800Z-220412T1000Z/ /0.CON.KVEF.WI.Y.0017.000000T0000Z-220411T1800Z/ Western Mojave Desert-Including Barstow, Daggett, and Fort Irwin 947 AM PDT Mon Apr 11 2022 ...WIND ADVISORY REMAINS IN EFFECT UNTIL 11 AM PDT THIS MORNING... ...HIGH WIND WARNING WILL THEN BE IN EFFECT UNTIL 3 AM PDT TUESDAY...

- * WHAT...West winds 35 to 45 mph with gusts up to 65 mph expected.
- * WHERE...Western Mojave Desert.
- * WHEN...Until 3 AM PDT Tuesday.
- * IMPACTS...High winds can topple trees...down power lines...and remove shingles or blow weakened roofs off buildings. Travel will be difficult, especially for high profile vehicles.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

Take action to secure trash cans...lawn furniture...and other loose or lightweight outdoor objects. Drivers of vans...campers... trailers...and other high profile vehicles should be alert to the danger of these winds. Use extra caution if you must drive.

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CAZ522-524-121000-/O.CON.KVEF.HW.W.0003.220411T1800Z-220412T1000Z/ Death Valley National Park-Eastern Mojave Desert-Including Furnace Creek, Stovepipe Wells, Shoshone, Baker, Mountain Pass, and Mitchell Caverns 947 AM PDT Mon Apr 11 2022

... HIGH WIND WARNING REMAINS IN EFFECT UNTIL 3 AM PDT TUESDAY...

- * WHAT...West winds 35 to 45 mph with gusts 60 to 70 mph expected.
- * WHERE...Western Mojave Desert and Eastern Mojave Desert.
- * WHEN...Until 3 AM PDT Tuesday.
- * IMPACTS...High winds can topple trees...down power lines...and remove shingles or blow weakened roofs off buildings. Travel will be difficult, especially for high profile vehicles.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

Take action to secure trash cans...lawn furniture...and other loose or lightweight outdoor objects. Drivers of vans...campers... trailers...and other high profile vehicles should be alert to the danger of these winds. Use extra caution if you must drive.

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AZZ001-003-036-NVZ014-016>022-121000-/0.CON.KVEF.HW.W.0003.220411T1800Z-220412T1000Z/ Northwest Plateau-Northwest Deserts-Lake Mead National Recreation Area-Esmeralda and Central Nye County-Northeast Clark County-Western Clark and Southern Nye County-Sheep Range-Spring Mountains-Red Rock Canyon-Las Vegas Valley-Southern Clark County-Including Colorado City, Pipe Spring National Monument, Tuweep, Mt Trumbull, Western Grand Canyon, Kingman, Golden Valley, Dolan Springs, Valentine, Wikieup, Yucca, Bullhead City, Oatman, Mohave Valley, Beatty, Goldfield, Silver Peak, Dyer, Mesquite, Overton, Moapa, Pahrump, Indian Springs, Desert Rock, Amargosa Valley, Hayford Pk, The Town Of Mt Charleston, Red Rock Canyon, Las Vegas, North Las Vegas, Henderson, Boulder City, Hoover Dam, Laughlin, Primm, Searchlight, and Cal-Nev-Ari 947 AM PDT Mon Apr 11 2022 /947 AM MST Mon Apr 11 2022/

...HIGH WIND WARNING REMAINS IN EFFECT UNTIL 3 AM PDT /3 AM MST/ TUESDAY...

- * WHAT...Southwest winds 35 to 45 mph with gusts 50 to 70 mph expected.
- * WHERE...Spring Mountains-Red Rock Canyon, Las Vegas Valley and Southern Clark County.
- * WHEN...Until 3 AM PDT Tuesday.
- * IMPACTS...High winds can topple trees...down power lines...and remove shingles or blow weakened roofs off buildings. Travel will be difficult, especially for high profile vehicles.
- * ADDITIONAL DETAILS...The highest winds will be near the foothills of the Spring Mountains and Red Rock Canyon.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

Take action to secure trash cans...lawn furniture...and other loose or lightweight outdoor objects. Drivers of vans... campers...trailers...and other high profile vehicles should be alert to the danger of these winds. Use extra caution if you must drive.

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AZZ002-CAZ526-527-121000-/0.EXA.KVEF.WI.Y.0016.220411T1800Z-220412T1200Z/ Lake Havasu and Fort Mohave-Cadiz Basin-San Bernardino County-Upper Colorado River Valley-Including Lake Havasu City, Desert Hills, Topock, Vidal Junction, and Needles 947 AM PDT Mon Apr 11 2022 /947 AM MST Mon Apr 11 2022/

...WIND ADVISORY IN EFFECT UNTIL 5 AM PDT /5 AM MST/ TUESDAY...

- * WHAT...Southwest winds 20 to 30 mph with gusts over 40 mph expected.
- * WHERE...In Arizona, Lake Havasu and Fort Mohave. In California, Cadiz Basin and San Bernardino County-Upper Colorado River Valley.
- * WHEN...Until 5 AM PDT Tuesday.
- * IMPACTS...Gusty winds could blow around unsecured objects. Winds this strong can make driving difficult...especially for motorcycles and high profile vehicles and create areas of blowing dust or sand...resulting in briefly lowered visibilities to well under a mile at times.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

Use extra caution when driving, especially if operating a high profile vehicle. Secure outdoor objects.

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NVZ015-121000-/O.CON.KVEF.WI.Y.0016.220411T1800Z-220412T1000Z/ Lincoln County-Including Caliente, Pioche, Panaca, Hiko, Alamo, and Rachel 947 AM PDT Mon Apr 11 2022

...WIND ADVISORY REMAINS IN EFFECT UNTIL 3 AM PDT TUESDAY...

- * WHAT...West winds 25 to 35 mph with gusts 45 to 55 mph expected.
- * WHERE...Esmeralda and Central Nye County, Lincoln County, Northeast Clark County and Sheep Range.

* WHEN...Until to 3 AM PDT Tuesday.

* IMPACTS...Gusty winds could blow around unsecured objects. Winds this strong can make driving difficult...especially for motorcycles and high profile vehicles and create areas of blowing dust or sand...resulting in briefly lowered

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visibilities to well under a mile at times.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

Use extra caution when driving, especially if operating a high profile vehicle. Secure outdoor objects.

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CAZ525-121000-/O.CON.KVEF.WI.Y.0016.220411T1800Z-220412T1200Z/ Morongo Basin-Including Morongo Valley, Yucca Valley, and Twentynine Palms 947 AM PDT Mon Apr 11 2022

...WIND ADVISORY REMAINS IN EFFECT UNTIL 5 AM PDT TUESDAY...

- * WHAT...West winds 20 to 30 mph with gusts up to 55 mph expected becoming northwest late tonight and early Tuesday morning.
- * WHERE...Morongo Basin including Yucca Valley and Landers.
- * WHEN...Until 5 AM PDT Tuesday.
- * IMPACTS...Gusty winds could blow around unsecured objects. Winds this strong can make driving difficult...especially for motorcycles and high profile vehicles and create areas of blowing dust or sand...resulting in briefly lowered visibilities to well under a mile at times.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

Take action to secure trash cans...lawn furniture...and other loose or lightweight outdoor objects. Drivers of vans... campers...trailers...and other high profile vehicles should be alert to the danger of these winds. Use extra caution if you must drive.

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For more information from the National Weather Service visit https://weather.gov/lasvegas

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067 WWUS55 KVEF 111836 DSWVEF
BULLETIN - EAS ACTIVATION REQUESTED Dust Storm Warning National Weather Service Las Vegas NV 1136 AM PDT Mon Apr 11 2022
CAC071-112030- /O.NEW.KVEF.DS.W.0008.220411T1836Z-220411T2030Z/ San Bernardino CA- 1136 AM PDT Mon Apr 11 2022
The National Weather Service in Las Vegas has issued a
* Dust Storm Warning for North central San Bernardino County in southern California
* Until 130 PM PDT.
* At 1133 AM PDT, a dust channel was observed west of Interstate 15 from Baker to Mountain Pass, moving northeast at 50 mph.
HAZARDLess than a quarter mile visibility with strong wind in excess of 50 mph.
SOURCEDetected by satellite observations and reports from local officials.
IMPACTDangerous and sudden reductions in visibility making driving very hazardous. Very strong cross winds could also result in blow overs or sudden lane changes for high profile vehicles.
This includes Interstate 15 in California between mile markers 139 and 158.
Locations impacted include Baker.
PRECAUTIONARY/PREPAREDNESS ACTIONS
Motorists should not drive into a dust storm. PULL ASIDE STAY ALIVE!
To report severe weather, contact the National Weather Service, or your nearest law enforcement agency, who will relay your report to the National Weather Service office in Las Vegas.
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417 WWUS55 KVEF 111935 DSWVEF

Dust Storm Warning National Weather Service Las Vegas NV 1235 PM PDT Mon Apr 11 2022

CAC071-112030-/O.CON.KVEF.DS.W.0008.000000T0000Z-220411T2030Z/ San Bernardino CA-1235 PM PDT Mon Apr 11 2022

...A DUST STORM WARNING REMAINS IN EFFECT UNTIL 130 PM PDT FOR NORTH CENTRAL SAN BERNARDINO COUNTY...

At 1231 PM PDT, a dust plume continued to be observed from north of Yermo northwest to Mountain Pass and just west of the Interstate 15 corridor.

- HAZARD...Less than one quarter mile with damaging wind gusts up to 60 mph.
- SOURCE...Detected by satellite observations and reports from local officials.
- IMPACT...Dangerous and sudden reductions in visibility making driving very hazardous. Very strong cross winds could also result in blow overs or sudden lane changes for high profile vehicles.

This includes Interstate 15 in California between mile markers 139 and 158 as well as highway 127 from Baker to the county line.

Locations impacted include... Baker and Tecopa.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

Motorists should not drive into a dust storm. PULL ASIDE STAY ALIVE!

To report severe weather, contact the National Weather Service, or your nearest law enforcement agency, who will relay your report to the National Weather Service office in Las Vegas.

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571 WWUS55 KVEF 112008 DSWVEF
BULLETIN - EAS ACTIVATION REQUESTED Dust Storm Warning National Weather Service Las Vegas NV 108 PM PDT Mon Apr 11 2022
CAC071-NVC003-112100- /O.NEW.KVEF.DS.W.0009.220411T2008Z-220411T2100Z/ San Bernardino CA-Clark NV- 108 PM PDT Mon Apr 11 2022
The National Weather Service in Las Vegas has issued a
* Dust Storm Warning for Northeastern San Bernardino County in southern California Central Clark County in southern Nevada
* Until 200 PM PDT.
* At 106 PM PDT, an area of blowing dust was impacting Interstate 15 near the Nevada and California state line including the city of Primm. This dust was resulting in low visibility and increased traffic on the Interstate.
HAZARDLess than a quarter mile visibility with strong wind in excess of 50 mph.
SOURCELaw enforcement traffic cameras.
IMPACTDangerous and sudden reductions in visibility making driving very hazardous. Strong cross winds could also result in blow overs or sudden lane changes for high profile vehicles.
This includes the following highways Interstate 15 in California between mile markers 183 and 186. Interstate 15 in Nevada between mile markers 1 and 9.
Locations impacted include Primm.
PRECAUTIONARY/PREPAREDNESS ACTIONS
Motorists should not drive into a dust storm. PULL ASIDE STAY ALIVE!
To report severe weather, contact the National Weather Service, or your nearest law enforcement agency, who will relay your report to the National Weather Service office in Las Vegas.

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886 WWUS55 KVEF 112018 DSWVEF
BULLETIN - EAS ACTIVATION REQUESTED Dust Storm Warning National Weather Service Las Vegas NV 118 PM MST Mon Apr 11 2022
AZC015-112215- /O.NEW.KVEF.DS.W.0010.220411T2018Z-220411T2215Z/ Mohave AZ- 118 PM MST Mon Apr 11 2022
The National Weather Service in Las Vegas has issued a
* Dust Storm Warning for Central Mohave County in northwestern Arizona
* Until 315 PM MST.
* At 115 PM MST, a large dust plume originating from the Red Lake dry lake bed was spreading northeast into the Hualapai Reservation in Mohave County.
HAZARDLess than a quarter mile visibility with strong wind in excess of 50 mph.
SOURCEDetected by satellite observations.
IMPACTDangerous life-threatening travel.
This includes areas mainly northwest of Old Route 66 and includes the Hualapai Reservation and Grand Canyon West.
Locations impacted include Grand Canyon Skywalk, Diamond Creek Campground and Grand Canyon Ranch.
PRECAUTIONARY/PREPAREDNESS ACTIONS
Motorists should not drive into a dust storm. PULL ASIDE STAY ALIVE!
To report severe weather, contact the National Weather Service, or your nearest law enforcement agency, who will relay your report to the National Weather Service office in Las Vegas.
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LATLON 3616 11319 3609 11323 3610 11331 3605 11335

https://mesonet.agron.iastate.edu/wx/afos/p.php?pil=DSWVEF&e=202204112018

3597 11332 3591 11334 3589 11331 3576 11334

3543 11384	3576 11413 3645 11363 3620 11308	
TIMEMOTLOC	2015Z 232DEG 48KT 3607 11323	

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WWUS55 KVEF 112030
DSWVEF
Dust Storm Warning
National Weather Service Las Vegas NV
130 PM PDT Mon Apr 11 2022
CAC071-112030-
/0.EXP.KVEF.DS.W.0008.00000000002-220411T2030Z/
San Bernardino CA-
130 PM PDT Mon Apr 11 2022
... THE DUST STORM WARNING FOR NORTH CENTRAL SAN BERNARDINO COUNTY
WILL EXPIRE AT 130 PM PDT...
The dust storm warning will expire but patchy blowing dust will
continue to be a hazard for Interstate 15 between Baker and Mountain
Pass. Another dust storm warning may be needed if conditions worsen
again.
LAT...LON 3509 11653 3525 11666 3579 11601 3579 11588
      3555 11557 3536 11583
TIME...MOT...LOC 2020Z 232DEG 44KT 3619 11502
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TB3
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276 WWUS55 KVEF 112038 DSWVEF
BULLETIN - EAS ACTIVATION REQUESTED Dust Storm Warning National Weather Service Las Vegas NV 138 PM PDT Mon Apr 11 2022
NVC009-023-112230- /O.NEW.KVEF.DS.W.0011.220411T2038Z-220411T2230Z/ Nye NV-Esmeralda NV- 138 PM PDT Mon Apr 11 2022
The National Weather Service in Las Vegas has issued a
* Dust Storm Warning for Northwestern Nye County in south central Nevada Northeastern Esmeralda County in south central Nevada
* Until 330 PM PDT.
* At 136 PM PDT, a dust channel was 12 miles northeast of Silver Peak, or 18 miles southwest of Tonopah, moving northeast at 55 mph.
HAZARDLess than a quarter mile visibility with damaging wind in excess of 60 mph.
SOURCEDetected by National Weather Service meteorologists.
IMPACTDangerous life-threatening travel.
* This will impact Highway 95 between Goldfield and Tonopah, as well as Highway 95 and 6 between Tonopah and Coaldale Junction.
This dust channel will remain over mainly rural areas of northwestern Nye and northeastern Esmeralda Counties.
PRECAUTIONARY/PREPAREDNESS ACTIONS
Dust storms lead to dangerous driving conditions with visibility reduced to near zero. If driving, avoid dust storms if possible. If caught in one, pull off the road, turn off your lights and keep your foot off the brake.
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LATLON 3805 11724 3805 11669 3793 11644 3774 11750 3807 11772 3825 11744

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070 WWUS55 KVEF 112057 DSWVEF
Dust Storm Warning National Weather Service Las Vegas NV 157 PM PDT Mon Apr 11 2022
CAC071-NVC003-112107- /O.EXP.KVEF.DS.W.0009.0000000000002-220411T2100Z/ San Bernardino CA-Clark NV- 157 PM PDT Mon Apr 11 2022
THE DUST STORM WARNING FOR NORTHEASTERN SAN BERNARDINO AND CENTRAL CLARK COUNTIES WILL EXPIRE AT 200 PM PDT
The dust storm which prompted the warning has weakened. Therefore, the dust storm warning will be allowed to expire. Areas of blowing dust will continue to make travel difficult.
LATLON 3551 11539 3564 11547 3573 11540 3576 11530 3562 11524
TIMEMOTLOC 2057Z 232DEG 48KT 3630 11430
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765 WWUS55 KVEF 112114 DSWVEF BULLETIN - EAS ACTIVATION REQUESTED Dust Storm Warning National Weather Service Las Vegas NV 214 PM PDT Mon Apr 11 2022 NVC003-112315-/O.NEW.KVEF.DS.W.0012.220411T2114Z-220411T2315Z/ Clark NV-214 PM PDT Mon Apr 11 2022 The National Weather Service in Las Vegas has issued a * Dust Storm Warning for... Central Clark County in southern Nevada... * Until 415 PM PDT. * At 211 PM PDT, a dust channel was over Highway 95, southwest of Boulder City. HAZARD...Less than a quarter mile visibility with damaging wind in excess of 60 mph. SOURCE...Detected by National Weather Service meteorologists. IMPACT...Dangerous life-threatening travel. * Highway 95 from the Interstate 11 interchange south to State Highway 165 intersection. Locations impacted include... Eldorado Valley and Boulder City. PRECAUTIONARY/PREPAREDNESS ACTIONS... Dust storms lead to dangerous driving conditions with visibility reduced to near zero. If driving, avoid dust storms if possible. If caught in one, pull off the road, turn off your lights and keep your foot off the brake. && LAT...LON 3582 11494 3590 11500 3597 11490 3596 11480 3589 11473 TIME...MOT...LOC 2111Z 232DEG 48KT 3596 11480

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008 WWUS55 KVEF 112124 DSWVEF
BULLETIN - EAS ACTIVATION REQUESTED Dust Storm Warning National Weather Service Las Vegas NV 224 PM PDT Mon Apr 11 2022
CAC027-071-NVC003-112315- /O.NEW.KVEF.DS.W.0013.220411T2124Z-220411T2315Z/ San Bernardino CA-Inyo CA-Clark NV- 224 PM PDT Mon Apr 11 2022
The National Weather Service in Las Vegas has issued a
* Dust Storm Warning for Northeastern San Bernardino County in southern California Southeastern Inyo County in south central California West central Clark County in southern Nevada
* Until 415 PM PDT.
* At 222 PM PDT, a dust channel was originating from Sandy Valley and moving northeast toward the Las Vegas Valley, moving northeast at 55 mph.
HAZARDLess than a quarter mile visibility with damaging wind in excess of 60 mph.
SOURCEDetected by National Weather Service meteorologists.
IMPACTDangerous life-threatening travel.
Locations impacted include Las Vegas, Henderson, North Las Vegas, Blue Diamond, GoodSprings and Sandy Valley.
PRECAUTIONARY/PREPAREDNESS ACTIONS
Dust storms lead to dangerous driving conditions with visibility reduced to near zero. If driving, avoid dust storms if possible. If caught in one, pull off the road, turn off your lights and keep your foot off the brake.
&&
LATLON 3557 11544 3580 11575 3635 11534 3636 11508 3625 11476 TIMEMOTLOC 2122Z 232DEG 48KT 3590 11529



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817 WWUS55 KVEF 112135 DSWVEF
Dust Storm Warning National Weather Service Las Vegas NV 235 PM MST Mon Apr 11 2022
AZC015-112215- /O.CON.KVEF.DS.W.0010.000000T0000Z-220411T2215Z/ Mohave AZ- 235 PM MST Mon Apr 11 2022
A DUST STORM WARNING REMAINS IN EFFECT UNTIL 315 PM MST FOR CENTRAL MOHAVE COUNTY
At 233 PM MST, a dust channel was 18 miles southeast of Pierce Ferry And Antares Roads, or 30 miles north of Kingman.
HAZARDLess than one quarter mile with strong wind in excess of 50 mph.
SOURCEDoppler radar.
IMPACTDangerous life-threatening travel.
* Low visibility will continue to impact Antares Road between Route 66 and Pierce Ferry Road.
Locations impacted include Grand Canyon Skywalk, Diamond Creek Campground and Grand Canyon Ranch.
PRECAUTIONARY/PREPAREDNESS ACTIONS
Motorists should not drive into a dust storm. PULL ASIDE STAY ALIVE!
To report severe weather, contact the National Weather Service, or your nearest law enforcement agency, who will relay your report to the National Weather Service office in Las Vegas.
&&
LATLON 3616 11319 3609 11323 3610 11331 3605 11335 3597 11332 3591 11334 3589 11331 3576 11334 3543 11384 3576 11413 3645 11363 3620 11308 TIMEMOTLOC 2133Z 231DEG 18KT 3563 11386 \$\$



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764 WWUS55 KVEF 112147 DSWVEF Dust Storm Warning National Weather Service Las Vegas NV 247 PM PDT Mon Apr 11 2022 NVC009-023-112230-/0.CON.KVEF.DS.W.0011.000000T0000Z-220411T2230Z/ Nye NV-Esmeralda NV-247 PM PDT Mon Apr 11 2022 ...A DUST STORM WARNING REMAINS IN EFFECT UNTIL 330 PM PDT FOR NORTHWESTERN NYE AND NORTHEASTERN ESMERALDA COUNTIES... At 243 PM PDT, a dense dust channel was still occuring across Highway 95 between Goldfield and Tonopah. Other, areas of blowing dust could be seen on satellite along Highway 95 and 6 west of Tonopah. HAZARD...Less than one quarter mile with damaging wind in excess of 60 mph. SOURCE...Detected by National Weather Service meteorologists. IMPACT...Dangerous life-threatening travel. * Highways 95 and 6. Locations impacted include...Silverpeak, Goldfield. PRECAUTIONARY/PREPAREDNESS ACTIONS... Dust storms lead to dangerous driving conditions with visibility reduced to near zero. If driving, avoid dust storms if possible. If caught in one, then pull off the road, turn off your lights and keep your foot off the brake. && LAT...LON 3805 11724 3805 11669 3793 11644 3774 11750 3807 11772 3825 11744 TIME...MOT...LOC 2143Z 237DEG 36KT 3797 11727 \$\$ BKP



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595 WWUS55 KVEF 112210 DSWVEF
BULLETIN - EAS ACTIVATION REQUESTED Dust Storm Warning National Weather Service Las Vegas NV 310 PM MST Mon Apr 11 2022
AZC015-120000- /O.NEW.KVEF.DS.W.0014.220411T2210Z-220412T0000Z/ Mohave AZ- 310 PM MST Mon Apr 11 2022
The National Weather Service in Las Vegas has issued a
* Dust Storm Warning for reissued for Central Mohave County in northwestern Arizona
* Until 500 PM MST.
* At 307 PM MST, cameras positioned around Red Lake continue to indicate dust originating from the dry lake bed.
HAZARDLess than a quarter mile visibility with damaging wind in excess of 60 mph.
SOURCEDetected by National Weather Service meteorologists.
IMPACTDangerous life-threatening travel.
* Pierce Ferry Road and Anteras Road.
Locations impacted include Grand Canyon Ranch, Grand Canyon Skywalk, Diamond Creek Campground, Pierce Ferry And Antares Roads, Meadview and Lake Mead National Recreation Area.
PRECAUTIONARY/PREPAREDNESS ACTIONS
Dust storms lead to dangerous driving conditions with visibility reduced to near zero. If driving, avoid dust storms if possible. If caught in one, pull off the road, turn off your lights and keep your foot off the brake.
To report severe weather, contact the National Weather Service, or your nearest law enforcement agency, who will relay your report to the National Weather Service office in Las Vegas.

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3589 11331 3576 11334 3543 11384 3576 11423
3651 11387
TIME...MOT...LOC 2207Z 230DEG 42KT 3568 11377
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842 WWUS55 KVEF 112224 DSWVEF
BULLETIN - EAS ACTIVATION REQUESTED Dust Storm Warning National Weather Service Las Vegas NV 324 PM PDT Mon Apr 11 2022
CAC071-120015- /O.NEW.KVEF.DS.W.0015.220411T2224Z-220412T0015Z/ San Bernardino CA- 324 PM PDT Mon Apr 11 2022
The National Weather Service in Las Vegas has issued a
* Dust Storm Warning for Central San Bernardino County in southern California
* Until 515 PM PDT.
* At 322 PM PDT, a dust channel was occurring in the Mojave River Valley east of Barstow, moving east at 50 mph. The visibility has dropped to a half a mile at the Barstow-Daggett Airport.
HAZARDLess than a quarter mile visibility with damaging wind in excess of 60 mph.
SOURCEDetected by National Weather Service meteorologists.
IMPACTDangerous life-threatening travel.
This includes the following highways Interstate 15 in California between mile markers 81 and 98. Interstate 40 in California between mile markers 4 and 87.
Locations impacted include Daggett, Ludlow, Newberry Springs and Nebo Center.
PRECAUTIONARY/PREPAREDNESS ACTIONS
Dust storms lead to dangerous driving conditions with visibility reduced to near zero. If driving, avoid dust storms if possible. If caught in one, pull off the road, turn off your lights and keep your foot off the brake.
Motorists should not drive into a dust storm. PULL ASIDE STAY ALIVE!

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LAT...LON 3485 11697 3502 11694 3482 11552 3455 11558

TIME...MOT...LOC 2222Z 280DEG 44KT 3484 11654

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037 WWUS55 KVEF 112226 DSWVEF Dust Storm Warning National Weather Service Las Vegas NV 326 PM PDT Mon Apr 11 2022 NVC009-023-112236-/0.EXP.KVEF.DS.W.0011.000000T0000Z-220411T2230Z/ Nye NV-Esmeralda NV-326 PM PDT Mon Apr 11 2022 ... THE DUST STORM WARNING FOR NORTHWESTERN NYE AND NORTHEASTERN ESMERALDA COUNTIES WILL EXPIRE AT 330 PM PDT... The dust storm which prompted the warning has weakened. Therefore, the dust storm warning will be allowed to expire. Areas of blowing dust will continue to make travel difficult. LAT...LON 3805 11724 3805 11669 3793 11644 3774 11750 3807 11772 3825 11744 TIME...MOT...LOC 2226Z 240DEG 49KT 3825 11665 \$\$ BKP



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586 WWUS55 KVEF 112232 DSWVEF Dust Storm Warning National Weather Service Las Vegas NV 332 PM PDT Mon Apr 11 2022 NVC003-112315-/0.CON.KVEF.DS.W.0012.000000T0000Z-220411T2315Z/ Clark NV-332 PM PDT Mon Apr 11 2022 ...A DUST STORM WARNING REMAINS IN EFFECT UNTIL 415 PM PDT FOR CENTRAL CLARK COUNTY... At 331 PM PDT, a dust channel was near Boulder City, moving northeast at 30 mph. HAZARD...Less than one quarter mile visibility with damaging wind in excess of 60 mph. SOURCE...Detected by National Weather Service meteorologists. IMPACT...Dangerous life-threatening travel. Highway 95 between Interstate 11 interchange and Nevada State Highway 165. Locations impacted include... Boulder City and Eldorado Valley. PRECAUTIONARY/PREPAREDNESS ACTIONS... Dust storms lead to dangerous driving conditions with visibility reduced to near zero. If driving, avoid dust storms if possible. If caught in one, then pull off the road, turn off your lights and keep your foot off the brake. && LAT...LON 3582 11494 3590 11500 3597 11490 3596 11480 3589 11473 TIME...MOT...LOC 2231Z 229DEG 28KT 3590 11490 \$\$ BKP



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National Weather Service Las Vegas NV 335 PM PDT Mon Apr 11 2022

CAC027-071-NVC003-112315-/0.CON.KVEF.DS.W.0013.000000T0000Z-220411T2315Z/ San Bernardino CA-Inyo CA-Clark NV-335 PM PDT Mon Apr 11 2022

...A DUST STORM WARNING REMAINS IN EFFECT UNTIL 415 PM PDT FOR NORTHEASTERN SAN BERNARDINO...SOUTHEASTERN INYO AND WEST CENTRAL CLARK COUNTIES...

At 333 PM PDT, a dust channel was originating from Sandy Valley and drifting northeast across the Las Vegas Valley, moving northeast at 55 mph.

HAZARD...Less than one quarter mile visibility with damaging wind in excess of 60 mph.

SOURCE...Detected by National Weather Service meteorologists.

IMPACT...Dangerous life-threatening travel.

This includes Interstate 15 in Nevada between mile markers 2 and 25.

Locations impacted include... Las Vegas, Henderson, North Las Vegas, Blue Diamond and Sandy Valley.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

Dust storms lead to dangerous driving conditions with visibility reduced to near zero. If driving, avoid dust storms if possible. If caught in one, then pull off the road, turn off your lights and keep your foot off the brake.

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LAT...LON 3557 11544 3580 11575 3635 11534 3636 11508 3625 11476 TIME...MOT...LOC 2233Z 232DEG 48KT 3648 11436

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LAT...LON 3627 11804 3659 11806 3667 11747 3615 11752 TIME...MOT...LOC 2240Z 278DEG 30KT 3646 11771



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283 WWUS55 KVEF 112308 DSWVEF Dust Storm Warning National Weather Service Las Vegas NV 408 PM PDT Mon Apr 11 2022 NVC003-112318-/0.EXP.KVEF.DS.W.0012.000000T0000Z-220411T2315Z/ Clark NV-408 PM PDT Mon Apr 11 2022 ... THE DUST STORM WARNING FOR CENTRAL CLARK COUNTY WILL EXPIRE AT 415 PM PDT... The dust storm which prompted the warning has weakened. Therefore, the dust storm warning will be allowed to expire. Areas of blowing dust may continue to produce low visibility at times. LAT...LON 3582 11494 3590 11500 3597 11490 3596 11480 3589 11473 TIME...MOT...LOC 2308Z 232DEG 48KT 3615 11451 \$\$ BKP



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427 WWUS55 KVEF 112315 DSWVEF Dust Storm Warning National Weather Service Las Vegas NV 415 PM PDT Mon Apr 11 2022 CAC071-120015-/0.CON.KVEF.DS.W.0015.000000T0000Z-220412T0015Z/ San Bernardino CA-415 PM PDT Mon Apr 11 2022 ...A DUST STORM WARNING REMAINS IN EFFECT UNTIL 515 PM PDT FOR CENTRAL SAN BERNARDINO COUNTY... At 413 PM PDT, a dust channel was near Daggett, moving east at 35 mph. The public reported near zero visibility at times in Daggett. HAZARD...Near zero visibility with damaging wind in excess of 60 mph. SOURCE...Public. IMPACT...Dangerous life-threatening travel. This includes the following highways... Interstate 15 in California between mile markers 81 and 98. Interstate 40 in California between mile markers 4 and 87. Locations impacted include... Daggett, Ludlow, Newberry Springs and Nebo Center. PRECAUTIONARY/PREPAREDNESS ACTIONS... Dust storms lead to dangerous driving conditions with visibility reduced to near zero. If driving, avoid dust storms if possible. If caught in one, then pull off the road, turn off your lights and keep your foot off the brake. Motorists should not drive into a dust storm. PULL ASIDE STAY ALIVE! && LAT...LON 3485 11697 3502 11694 3482 11552 3455 11558 TIME...MOT...LOC 2313Z 277DEG 30KT 3487 11674 \$\$ BKP



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845 WWUS55 KVEF 112334 DSWVEF Dust Storm Warning National Weather Service Las Vegas NV 434 PM PDT Mon Apr 11 2022 CAC027-120045-/0.CON.KVEF.DS.W.0016.000000000002-220412T0045Z/ Inyo CA-434 PM PDT Mon Apr 11 2022 ...A DUST STORM WARNING REMAINS IN EFFECT UNTIL 545 PM PDT FOR SOUTHWESTERN INYO COUNTY... At 433 PM PDT, a dust channel was near Keeler, or 11 miles southeast of Lone Pine, moving east at 40 mph. HAZARD...Less than one quarter mile visibility with damaging wind in excess of 60 mph. SOURCE...Detected by National Weather Service meteorologists. IMPACT...Dangerous life-threatening travel. Highways 190 and 136 that go around the Owens Dry Lake Bed. Locations impacted include... Olancha, Darwin, Keeler and Cartago. PRECAUTIONARY/PREPAREDNESS ACTIONS... Dust storms lead to dangerous driving conditions with visibility reduced to near zero. If driving, avoid dust storms if possible. If caught in one, then pull off the road, turn off your lights and keep your foot off the brake. Motorists should not drive into a dust storm. PULL ASIDE STAY ALIVE! && LAT...LON 3627 11804 3659 11806 3667 11747 3615 11752 TIME...MOT...LOC 2333Z 277DEG 19KT 3647 11793 \$\$ BKP



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212 WWUS55 KVEF 112350 DSWVEF BULLETIN - EAS ACTIVATION REQUESTED Dust Storm Warning National Weather Service Las Vegas NV 450 PM MST Mon Apr 11 2022 AZC015-120045-/O.NEW.KVEF.DS.W.0017.220411T2350Z-220412T0045Z/ Mohave AZ-450 PM MST Mon Apr 11 2022 The National Weather Service in Las Vegas has issued a * Dust Storm Warning for... West central Mohave County in northwestern Arizona... * Until 545 PM MST. * At 447 PM MST, a dust channel was 14 miles northwest of Dolan Springs, near White Hills, moving northeast at 45 mph. HAZARD...Less than a quarter mile visibility with damaging wind in excess of 60 mph. SOURCE...Detected by National Weather Service meteorologists. IMPACT...Dangerous life-threatening travel. * Highway 93 between Temple Bar Road and Dolan Springs. Locations impacted include...White Hills. PRECAUTIONARY/PREPAREDNESS ACTIONS... Dust storms lead to dangerous driving conditions with visibility reduced to near zero. If driving, avoid dust storms if possible. If caught in one, pull off the road, turn off your lights and keep your foot off the brake. Motorists should not drive into a dust storm. PULL ASIDE STAY ALIVE! && LAT...LON 3561 11448 3578 11459 3604 11430 3596 11416 3586 11409 TIME...MOT...LOC 2347Z 241DEG 14KT 3574 11446

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National Weather Service Las Vegas NV
457 PM MST Mon Apr 11 2022
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Mohave AZ-
457 PM MST Mon Apr 11 2022
... THE DUST STORM WARNING FOR CENTRAL MOHAVE COUNTY WILL EXPIRE AT
500 PM MST...
The dust storm which prompted the warning has weakened. Therefore,
the dust storm warning will be allowed to expire. Areas of blowing
dust may continue to produce low visibility at times.
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      3605 11335 3599 11334 3597 11332 3591 11334
      3589 11331 3576 11334 3543 11384 3576 11423
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THE DUST STORM WARNING FOR CENTRAL SAN BERNARDINO COUNTY WILL EXPIRE AT 515 PM PDT
The dust storm which prompted the warning has weakened. Therefore,
the dust storm warning will be allowed to expire. Areas of blowing
dust may continue to produce low visibility at times.
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211 WWUS55 KVEF 120040 DSWVEF
Dust Storm Warning National Weather Service Las Vegas NV 540 PM PDT Mon Apr 11 2022
CAC027-120050- /O.EXP.KVEF.DS.W.0016.000000T0000Z-220412T0045Z/ Inyo CA- 540 PM PDT Mon Apr 11 2022
THE DUST STORM WARNING FOR SOUTHWESTERN INYO COUNTY WILL EXPIRE AT 545 PM PDT
The dust storm which prompted the warning has weakened. Therefore, the dust storm warning will be allowed to expire. Areas of blowing dust may continue to produce low visibility at times.
LATLON 3627 11804 3659 11806 3667 11747 3615 11752 TIMEMOTLOC 0040Z 278DEG 30KT 3639 11726
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Dust Storm Warning National Weather Service Las Vegas NV 542 PM MST Mon Apr 11 2022
AZC015-120052- /O.EXP.KVEF.DS.W.0017.000000T0000Z-220412T0045Z/ Mohave AZ- 542 PM MST Mon Apr 11 2022
THE DUST STORM WARNING FOR WEST CENTRAL MOHAVE COUNTY WILL EXPIRE AT 545 PM MST
The dust storm which prompted the warning has weakened. Therefore, the dust storm warning will be allowed to expire. Areas of blowing dust may continue to produce low visibility at times.
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₽ 572 WWUS55 KVEF 120207 DSWVEF
BULLETIN - EAS ACTIVATION REQUESTED Dust Storm Warning National Weather Service Las Vegas NV 707 PM MST Mon Apr 11 2022
AZC015-120400- /O.NEW.KVEF.DS.W.0018.220412T0207Z-220412T0400Z/ Mohave AZ- 707 PM MST Mon Apr 11 2022
The National Weather Service in Las Vegas has issued a
* Dust Storm Warning for Central Mohave County in northwestern Arizona
* Until 900 PM MST.
* At 704 PM MST, a dense blowing dust from the dry lake bed 27 miles north of Kingman, moving north at 40 mph.
HAZARDLess than a quarter mile visibility with damaging wind in excess of 60 mph.
SOURCEDetected by National Weather Service meteorologists.
IMPACTDangerous life-threatening travel.
* Visibiltiy dropping to less than a quarter of a mile at times on Pierce Ferry Road between Dolan Springs and Grand Canyon West.
Locations impacted include Grand Canyon Ranch, Grand Canyon Skywalk, Pierce Ferry And Antares Roads, South Cove, Meadview and Peach Springs.
PRECAUTIONARY/PREPAREDNESS ACTIONS
Dust storms lead to dangerous driving conditions with visibility reduced to near zero. If driving, avoid dust storms if possible. If caught in one, pull off the road, turn off your lights and keep your foot off the brake.
Motorists should not drive into a dust storm. PULL ASIDE STAY ALIVE!
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      3610 11410 3640 11389 3615 11320 3612 11320
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[?] 318 WWUS55 KVEF 120322 DSWVEF Dust Storm Warning National Weather Service Las Vegas NV 822 PM MST Mon Apr 11 2022 AZC015-120400-/0.CON.KVEF.DS.W.0018.000000000002-220412T0400Z/ Mohave AZ-822 PM MST Mon Apr 11 2022 ...A DUST STORM WARNING REMAINS IN EFFECT UNTIL 900 PM MST FOR CENTRAL MOHAVE COUNTY... At 820 PM MST, a dust channel was located between Red Lake and 18 miles northeast of Grand Canyon Skywalk, moving north at 30 mph. HAZARD...Less than one quarter mile with damaging wind in excess of 60 mph. SOURCE...Detected by National Weather Service meteorologists. IMPACT...Dangerous life-threatening travel. Pierce Ferry Road and Anteras Road Locations impacted include... Grand Canyon Ranch, Grand Canyon Skywalk, Pierce Ferry And Antares Roads, South Cove, Meadview and Peach Springs. PRECAUTIONARY/PREPAREDNESS ACTIONS... Dust storms lead to dangerous driving conditions with visibility reduced to near zero. If driving, avoid dust storms if possible. If caught in one, then pull off the road, turn off your lights and keep your foot off the brake. Motorists should not drive into a dust storm. PULL ASIDE STAY ALIVE! && LAT...LON 3609 11323 3610 11331 3605 11335 3599 11334 3597 11332 3591 11334 3589 11331 3586 11331 3582 11333 3554 11333 3538 11373 3558 11418 3610 11410 3640 11389 3615 11320 3612 11320 TIME...MOT...LOC 0320Z 201DEG 24KT 3620 11359 \$\$



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? 880 WWUS55 KVEF 120400 DSWVEF Dust Storm Warning National Weather Service Las Vegas NV 900 PM MST Mon Apr 11 2022 AZC015-120410-/0.EXP.KVEF.DS.W.0018.000000000002-220412T0400Z/ Mohave AZ-900 PM MST Mon Apr 11 2022 ... THE DUST STORM WARNING FOR CENTRAL MOHAVE COUNTY HAS EXPIRED... The dust storm which prompted the warning has weakened. Therefore, the dust storm warning has been allowed to expire. Areas of blowing dust will continue to make travel difficult. LAT...LON 3609 11323 3610 11331 3605 11335 3599 11334 3597 11332 3591 11334 3589 11331 3586 11331 3582 11333 3554 11333 3538 11373 3558 11418 3610 11410 3640 11389 3615 11320 3612 11320 TIME...MOT...LOC 0400Z 200DEG 35KT 6065 9562 \$\$

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Appendix B: 2012 PM₁₀ SIP and Clark County AQR Documents

This Appendix provides two documents to fulfill nRCP requirement 2: the *Redesignation Request and Maintenance Plan for Particulate Matter (PM*₁₀) report, developed in August 2012, and the *Clark County Air Quality Regulations* document, last revised in January 2020.

Redesignation Request and Maintenance Plan for Particulate Matter (PM₁₀)

Clark County, Nevada





August 2012

APPROVED BY THE CLARK COUNTY BOARD OF COMMISSIONERS

Susan Brager, Chair Steve Sisolak, Vice-Chair Larry Brown Tom Collins Chris Giunchigliani Mary Beth Scow Lawrence Weekly

PREPARED BY

Clark County Department of Air Quality Planning Division

EXECUTIVE SUMMARY

This *Request for Redesignation and Maintenance Plan for Particulate Matter* (PM_{10}) is a formal request by Clark County, through its Department of Air Quality, to the U.S. Environmental Protection Agency (EPA) to redesignate the Clark County PM_{10} nonattainment area to attainment for the 1987 24-hour National Ambient Air Quality Standard (NAAQS). The plan summarizes the progress in attaining the PM_{10} standard, demonstrates that all Clean Air Act and Clean Air Act Amendment requirements for attainment have been met, and presents a plan to assure continued maintenance over the next 10 years.

In 1990, EPA designated the Las Vegas Valley, Hydrographic Area 212 (HA 212) in Clark County, as being in "moderate" nonattainment of the 24-hour PM_{10} NAAQS. In 1993, EPA reclassified HA 212 as a "serious" nonattainment area because Clark County could not demonstrate attainment by the required date of December 1994.

In June 2001, Clark County submitted a PM_{10} State Implementation Plan (SIP) that met federal requirements for serious PM_{10} nonattainment areas. The SIP demonstrated that the adoption and implementation of Best Available Control Measures for fugitive sources and continuation of controls for stationary sources would result in attainment of the 24-hour NAAQS by December 31, 2006. Although the Act required the SIP demonstrate attainment of the PM_{10} NAAQS no later than December 31, 2001, EPA granted Clark County a five-year extension for the 24-hour attainment date. Final EPA approval of the Clark County PM_{10} SIP became effective in July 2004.

In June 2007, Clark County submitted the PM_{10} Milestone Achievement Report, prepared in accordance with 40 CFR Part 52. The report documents Clark County's attainment of the 24-hour PM₁₀ NAAQS by the applicable date of December 31, 2006. In August 2010, EPA published a determination of attainment for PM₁₀ for the Las Vegas Valley in the Federal Register.

Following on that success, this maintenance plan provides a PM_{10} attainment demonstration that uses the most recently adopted planning variables, including those approved by the Regional Transportation Commission of Southern Nevada, which is the designated Metropolitan Planning Organization for the Las Vegas urban area. The plan also provides revised emission inventories and motor vehicle emissions budgets.

After EPA approval, this plan will become federally enforceable and will determine how Clark County will maintain the 1987 PM_{10} NAAQS through 2023. Once approved, the budgets in this plan will be the projected budgets used to determine transportation conformity in future regional transportation plans.

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ACRONYMS AND ABBREVIATIONS

<u>Acronyms</u>

AQR	Clark County Air Quality Regulation
AQS	Air Quality System
BACM	Best Available Control Measures
BCC	Clark County Board of County Commissioners
BLM	Bureau of Land Management
BMP	best management practices
CAA	Clean Air Act
CFR	Code of Federal Regulations
EI	emission inventory
EPA	U.S. Environmental Protection Agency
ERC	emission reduction credit
FR	Federal Register
HA	Hydrographic Area
MVEB	motor vehicle emission budget
NAAQS	National Ambient Air Quality Standards
NDEP	Nevada Division of Environmental Protection
NEAP	Natural Events Action Plan
NRS	Nevada Revised Statues
RTC	Regional Transportation Commission of Southern Nevada
SIP	state implementation plan
VMT	vehicle miles traveled

Abbreviations

mph	miles per hour
PM _{2.5}	particulate matter less than 2.5 microns in mean aerodynamic diameter
PM_{10}	particulate matter less than 10 microns in mean aerodynamic diameter
tpd μg/m ³	tons per day
μg/m ³	micrograms per cubic meter
μm	microns

1.0 INTRODUCTION

1.1 INTRODUCTION

Clark County, in coordination with the Nevada Division of Environmental Protection (NDEP), requests that the U.S. Environmental Protection Agency (EPA) redesignate the Clark County nonattainment area, Hydrographic Area (HA) 212, to attainment status for particulate matter less than 10 microns (μ m) in diameter (PM₁₀) under the 1987 PM₁₀ 24-hour National Ambient Air Quality Standard (NAAQS).

To complete this redesignation request and maintenance plan in accordance with EPA guidance, Clark County inventoried emissions of PM_{10} for the baseline year (2008) and projected those emissions outward to 2015 and 2023. The inventories were adjusted to reflect federal, state, and local rules on PM_{10} emissions that have already been adopted or implemented. These controls were shown to reduce overall PM_{10} emissions through the maintenance year (2023).

1.2 CHARACTERISTICS AND HEALTH EFFECTS

"Particulate matter" is a general term used to describe a complex group of airborne solid, liquid, and semi volatile materials of various sizes and compositions. Primary PM is emitted directly into the atmosphere from anthropogenic activities, such as agricultural operations, industrial processes, construction and demolition activities, and entrainment of road dust into the air, and nonanthropogenic activities, such as windblown dust and ash from forest fires. Secondary PM is formed in the atmosphere from (predominantly gaseous) combustion by-product precursors, such as nitrogen oxides and volatile organic compounds. The overwhelming majority of airborne PM in Clark County is primary PM; the major source is fugitive windblown dust, with contributions from entrained road dust and construction activities.

Particulate size is a critical characteristic of PM that primarily determines the location of its deposition along the respiratory system. EPA has established two types of PM air quality standards, one for PM_{10} and one for $PM_{2.5}$. (The latter refers to the subset of PM_{10} with an aerodynamic diameter smaller than 2.5 μ m.)

 PM_{10} has a detrimental effect on human health because it can accumulate in the respiratory system. Short-term exposure can irritate the lungs and may cause immune system responses, resulting in lung constriction that produces shortness of breath and coughing. Larger particles deposit in the upper respiratory tract; smaller particles travel deep into the lungs and are retained longer.

Long-term, low-level PM_{10} exposure may cause cancer and premature death. Those with a history of asthma or chronic lung disease are especially sensitive to these effects. The elderly or those with heart conditions may also have severe reactions, since the resulting lack of oxygen may strain the heart.

1.3 NATIONAL AMBIENT AIR QUALITY STANDARDS

On July 1, 1987, EPA revised the PM NAAQS (Volume 52, page 34634 of the *Federal Register* (52 FR 24634)). The previous standards addressed total suspended particulates, without regard to size; the revised standards addressed only particles having an aerodynamic diameter of 10 μ m or less. EPA determined that these microscopic particles can be inhaled deep into the lungs and present a hazard to public health when concentrations exceed certain levels. Both annual-averaged and 24-hour averaged PM₁₀ standards were promulgated; however, EPA revoked the annual-averaged standard in 2006 (71 FR 61144). The current PM₁₀ (primary) standard retains only the 24-hour averaging time, at a level of 150 micrograms per cubic meter (μ g/m³).

1.4 HISTORY OF CLARK COUNTY NONATTAINMENT AREA

After passage of the 1990 Clean Air Act Amendments, EPA designated all areas previously classified as Group I areas as "moderate" nonattainment areas, including HA 212 (CAA 107(d)(4)(B)). EPA required these moderate nonattainment areas to submit a state implementation plan (SIP) by November 1991 that would demonstrate attainment of the PM₁₀ NAAQS by December 1994. Because of unprecedented growth, high-wind events, and other factors, Clark County could not demonstrate attainment by the required date, and EPA reclassified HA 212 as a "serious" nonattainment area on January 8, 1993 (58 FR 3334). In 1997, a PM₁₀ SIP revision was submitted. In December 2000, the Clark County Board of County Commissioners (BCC) requested that the state formally withdraw all previously submitted SIPs and addenda because none demonstrated attainment of the NAAQS.

Section 110 of the Clean Air Act (CAA) requires that states not meeting the NAAQS submit a SIP detailing programs to bring the nonattainment area into attainment. After completing comprehensive research and work programs to address the problems identified in the 1997 PM₁₀ SIP revision, Clark County submitted a new SIP to EPA in June 2001 that met federal requirements for remediating serious PM₁₀ nonattainment areas. This new SIP demonstrated that the adoption and implementation of Best Available Control Measures (BACM) for fugitive sources and continuation of controls for stationary sources would result in attainment of the annual average PM₁₀ NAAQS by 2001 and attainment of the 24-hour NAAQS by December 31, 2006. Although the CAA required the SIP demonstrate attainment of the PM₁₀ NAAQS no later than December 31, 2001, EPA granted Clark County a five-year extension for the 24-hour attainment date. Clark County supported its extension request with a Most Stringent Measure control analysis that showed the emission control programs proposed for the valley were at least as stringent, if not more so, than control programs implemented in other nonattainment areas.

In June 2004, EPA published final approval of the PM_{10} SIP (69 FR 32273). In June 2007, Clark County submitted a milestone achievement report that described the county's progress in implementing the SIP (DAQEM 2007a). In August 2010, EPA determined HA 212 had attained the PM_{10} NAAQS (75 FR 45485).

With submittal of this redesignation request and maintenance plan, Clark County is requesting that EPA designate Clark County in attainment of the PM_{10} NAAQS.

1.4.1 Nonattainment Area

Figure 1-1 depicts the PM_{10} nonattainment area established by EPA (HA 212), which is roughly 1,500 square miles, largely under federal control, and includes the:

- City of Las Vegas
- City of North Las Vegas
- City of Henderson
- Unincorporated urban areas of Clark County
- Desert National Wildlife Refuge lands
- Humboldt-Toiyabe National Forest lands
- Red Rock Canyon National Conservation Area
- Nellis Air Force Base
- Nellis Bombing and Gunnery Range
- Nellis Small Arms Range
- Clark County Shooting Range
- Las Vegas Paiute Indian Reservation
- Spring Mountain State Park
- Lake Mead National Recreational Area.

More than 80 percent of the land in Nevada is under federal jurisdiction, most of it managed by the Bureau of Land Management (BLM). In 1998, Congress passed the Southern Nevada Public Land Management Act, which allowed BLM to sell, trade, or lease public land within a specific area around Las Vegas. There was an amendment to this boundary in 2003, and minor adjustments thereafter. The area currently comprises 327,047 acres and is known as the BLM disposal area (Figure 1-2). Lands controlled by the federal government outside this area remain in a native or managed state, and the disposal boundary can only be changed by an act of Congress.

Because the BLM disposal area contains nearly all of the anthropogenic sources and sensitive receptors within the nonattainment area, it was used for the attainment demonstration in the EPA-approved PM_{10} SIP and in this maintenance plan.

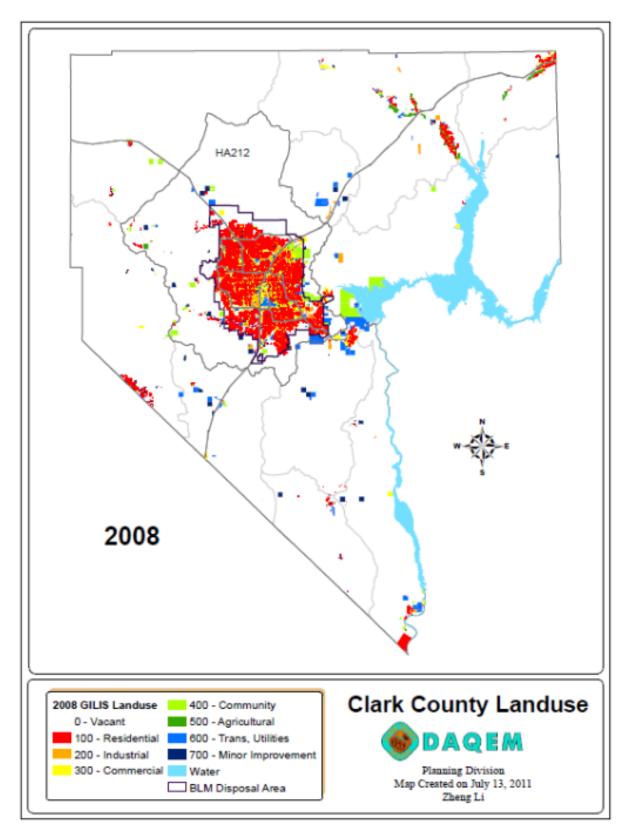


Figure 1-1. Clark County PM₁₀ Nonattainment Area (HA 212).

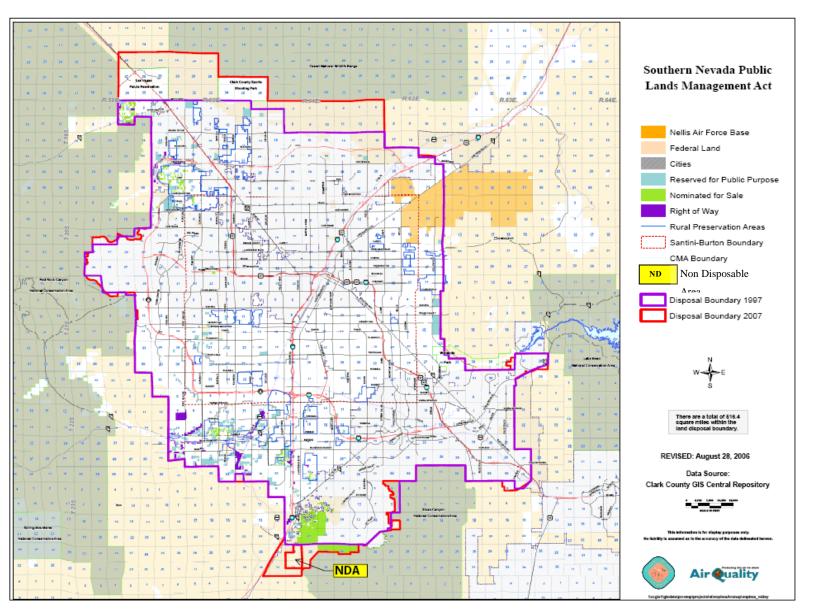


Figure 1-2. BLM Disposal Area within HA 212.

1.5 REQUIRED COMPONENTS OF A REDESIGNATION REQUEST

CAA Section 107(d)(3)(E) defines the five conditions that must be met before EPA can redesignate a nonattainment area to attainment. With the submittal of this plan, Clark County meets these five conditions.

1.5.1 Attainment of the PM₁₀ Standards

Clark County must show that the area is attaining the applicable NAAQS. Redesignation of PM_{10} nonattainment areas to attainment are based solely on ambient air quality data. Section 2 presents the data used to demonstrate attainment.

1.5.2 Approved Implementation Plan

The SIP for the nonattainment area must be fully approved under CAA Section 110(k) and must satisfy all requirements that apply to the nonattainment area. Section 3 provides the information required by CAA Section 110(k) to show that Clark County has an approved PM_{10} SIP.

1.5.3 Permanent and Enforceable Improvements in Air Quality

Clark County must be able to reasonably attribute improvements in air quality to emission reductions that are permanent and federally enforceable. Section 4 shows that improved air quality in the Clark County area is the result of permanent and enforceable emission reduction control measures, as opposed to air quality improvements resulting from adverse economic or meteorological conditions.

1.5.4 Requirements under Section 110 and Part D of the Clean Air Act

Clark County must meet all requirements of Section 110 and Part D that applied before submittal of the redesignation request. Section 5 discusses the noninterference of this SIP with any applicable requirements concerning attainment, and with reasonable further progress towards attainment of all other criteria pollutant NAAQS or any other applicable CAA requirement.

1.5.5 Approvable Maintenance Plan: Section 175(a) of the Clean Air Act

Section 107(d)(3)(E) of the Clean Air Act Amendments stipulates that EPA must fully approve a maintenance plan that meets the requirements of CAA Section 175(a) before it can redesignate an area to attainment. Section 6 provides a plan to maintain the PM₁₀ NAAQS for at least 10 years after redesignation.

2.0 ATTAINMENT OF THE PM₁₀ STANDARD

2.1 INTRODUCTION

The first required component of an area's redesignation request is a demonstration that it has attained the NAAQS. This attainment demonstration is based on quality-assured monitoring data representative of the Clark County PM_{10} nonattainment area. A total of three consecutive years of non-violating air quality data is needed to show attainment of the standard. A complete year of air quality data comprises all four calendar quarters, with each quarter containing data from at least 75 percent of the scheduled sampling days.

Attainment of the PM_{10} standard is demonstrated through establishment of a design value. As specified in Appendix K of Title 40, Part 50 of the Code of Federal Regulations (40 CFR 50), attainment of the 24-hour standard is determined by calculating the expected number of exceedances of the 150 µg/m³ limit per year: the standard is attained when the expected number of exceedances is one or less.

On August 3, 2010, EPA issued a final rule determining that the PM_{10} NAAQS had been attained for the HA 212 nonattainment area by the applicable attainment date of December 31, 2006, and that the area was currently attaining the standard (75 FR 45485). Therefore, the requirements of CAA Section 107(d)(3)(E)(i) have been satisfied.

2.2 MONITORING NETWORK

40 CFR 58 defines the requirements for the ambient air quality monitoring programs mandated by the CAA. Clark County's PM_{10} monitoring network consists of eight State and Local Air Monitoring System monitors; the system is governed by quality assurance and quality control procedures and subject to periodic EPA performance audits. As shown in Table 2-1, the monitoring objective of all but one station is "population exposure." The exception is the Jean monitoring station, which monitors background concentrations.

Site Name	Scale	Monitoring Objective	
Paul Meyer	Middle	Population exposure	
Palo Verde	Neighborhood	Population exposure	
Joe Neal	Neighborhood	Population exposure	
Green Valley	Middle	Population exposure	
Sunrise Acres	Neighborhood	Population exposure	
Jean	Regional	Background	
J.D. Smith	Neighborhood	Population exposure	
Boulder City	Neighborhood	Population exposure	

Table 2-1. Clark County PM₁₀ Monitoring Sites

Figure 2-1 shows the locations of the Clark County PM_{10} monitoring stations. Table 2-2 shows the design value concentrations measured at these stations from 2008–2010.

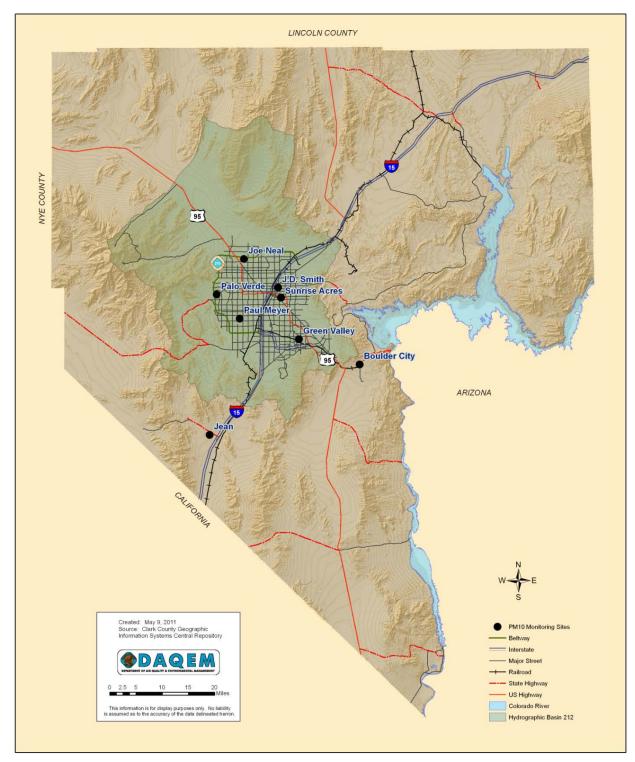


Figure 2-1. Clark County PM₁₀ Monitoring Stations.

Site ID	Site Name	Number of Daily Val- ues	1st High	2nd High	3rd High	4th High	Site Value	Design Value (highest site value)
0020	E. Craig Road	876	123	102	98	96	98	
0043	Paul Meyer	1,050	83	76	70	66	66	
0072	Lone Mountain	806	70	69	59	58	59	
0073	Palo Verde	1,060	57	54	52	51	51	
0075	Joe Neal	1,047	120	96	95	84	84	98
0298	Green Valley	1,041	144	81	80	78	80	
0561	Sunrise Acres	1,047	106	103	86	81	81	
1021	Orr	804	85	75	71	70	71	
2002	J.D. Smith	1,045	109	91	82	78	78	

Table 2-2. Design Values for 2008–2010 (µg/m³)

2.3 DESIGN VALUE

The design value (in $\mu g/m^3$) is the concentration derived from a statistical approach to monitoring data that describes the air quality status of a given area, during a specific period, relative to the NAAQS. When a design value is related to a comprehensive emissions inventory (EI) for the same period, future concentrations can be predicted through emissions forecasts.

The 24-hour PM_{10} baseline year (2008) design value for the BLM disposal area was derived using the PM_{10} SIP Development Guideline (EPA 1987). Data from the nine PM_{10} monitoring sites that operated from 2008–2010 were ranked by the four highest values for each site during that period. As Table 2-3 shows, the first, second, third, or fourth highest values are selected for each site, depending on the number of recorded values at that site during the three-year period.

Number of Daily Values	Data Point Used for Design Concentration
≤ 347	Highest Value
348 – 695	Second Highest Value
696 - 1,042	Third Highest Value
1,043 - 1,096	Fourth Highest Value

Table 2-3. Estimation of PM₁₀ Design Concentrations

The data analysis identified two exceptional events, one on February 13, 2008, and another on May 21, 2008. On these days, HA 212 experienced high-wind events during which the 24-hour PM_{10} standard was violated.

Sustained winds of 25 miles per hour (mph) and gusts of 40 mph are the established thresholds for exceptional high-wind events in HA 212; winds greater than these values overwhelm BACM. Wind speeds during both identified events were greater than these thresholds. Since PM_{10} emissions were not reasonably controllable during these events, they were not reasonably

preventable; the events were therefore flagged in EPA's Air Quality System (AQS). In accordance with EPA's Exceptional Event Rule, Clark County is requesting that these exceedance days be excluded from regulatory consideration.

The two event days were not considered in the design value calculations. Clark County ranked the remaining high values from each site for the three-year period (Table 2-2). The highest value from the list, 98 μ g/m³, was determined to be the design value. The design day (i.e., the day on which the design value concentration occurred) was determined to be April 15, 2008.

Figure 2-2 shows the 12-year trend of the design values in HA 212. The data demonstrate a significant improvement in air quality since implementation of the PM_{10} SIP.

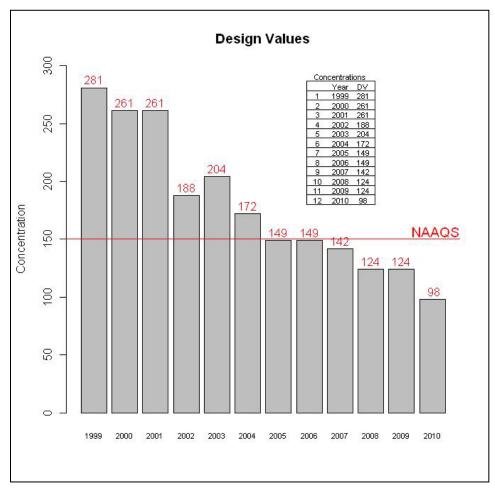


Figure 2-2. Design Values for 1999–2010 (µg/m³).

2.4 MONITORING RESULTS AND ATTAINMENT DEMONSTRATION

The monitoring data illustrated by Figure 2-2 verify that the Clark County nonattainment area has been in attainment with the PM_{10} NAAQS since 2006, in accordance with the requirements of 40 CFR 58. Table 2-4 outlines the highest 24-hour concentrations during 2008–10, excluding the two high-wind events of February 13, 2008, and May 21, 2008.

Site ID	Monitoring Site	Highest 24	-hour PM₁₀ Cor (μg/m³)	Expected Exceedances Per Year	
		2008	2009	2010	2008-2010
0020	E. Craig Road	123	67	N/A ¹	0
0043	Paul Meyer	76	83	48	0
0072	Lone Mountain	70	69	N/A ¹	0
0073	Palo Verde	54	57	49	0
0075	Joe Neal	120	95	64	0
0298	Green Valley	144	81	52	0
0561	Sunrise Acres	106	85	57	0
1021	Orr	71	85	N/A ¹	0
2002	J. D. Smith	109	77	62	0

Table 2-2. Summary of Las Vegas Valley PM₁₀ Monitoring Data, 2008–2010

 1 Site is no longer in operation or no longer monitoring $\text{PM}_{10}.$

Since none of the values are greater than the PM_{10} NAAQS, the expected number of exceedances in the Las Vegas Valley for 2008–2010 is zero. This is lower than the annual expected exceedance rate for the 24-hour PM_{10} NAAQS, demonstrating continued attainment of the standard.

2.5 QUALITY ASSURANCE PROGRAM

 PM_{10} data have been collected and verified in accordance with 40 CFR 58 and the *Quality Control & Assurance System for Continuous Particulate Matter (2.5 & 10) Pollutants (Quality Assurance Project Plan)* (DAQEM 2008). PM₁₀ audit data are submitted to AQS, and the audit schedule is available in the annual network plan Clark County submits to EPA.

3.0 STATE IMPLEMENTATION PLAN APPROVAL

3.1 INTRODUCTION

The second required component of an area's redesignation request is a fully approved SIP satisfying all requirements that apply to the nonattainment area under CAA Section 110(k), which addresses completeness findings, deadlines for EPA actions, types of EPA actions, and sanctions that may be applied to areas failing to meet CAA requirements. The information in this section demonstrates, as required under CAA Section 110(k), that there is an approved SIP for the Clark County PM_{10} nonattainment area.

3.2 PREVIOUS PLAN APPROVALS

In June 2001, Clark County submitted a PM_{10} SIP that met federal requirements for remediating serious PM_{10} nonattainment areas. This SIP demonstrated that the adoption and implementation of best available control measures and technologies would result in attainment of the 24-hour NAAQS by December 31, 2006. Final EPA approval of the Clark County PM_{10} SIP was effective in July 2004 (69 FR 32273).

4.0 PERMANENT AND ENFORCEABLE IMPROVEMENT IN AIR QUALITY

4.1 INTRODUCTION

The third required component of a redesignation request is a demonstration that improvements in air quality are reasonably attributed to emission reductions that are permanent and federally enforceable. The information in this section shows that improved air quality in the Clark County PM_{10} nonattainment area is the result of permanent and enforceable emission reduction control measures, as opposed to adverse economic or meteorological conditions.

4.2 ECONOMIC CONDITIONS

Clark County, formed in 1909 and located at the southern tip of Nevada, is an area of more than 8,000 square miles. Most county residents live within the BLM disposal area, a 511-square-mile basin inside HA 212. The BLM disposal area was one of the fastest-growing areas in the nation for several decades, and hosts up to 40 million visitors each year. Rapid population growth, high construction activity, disturbance of vacant lands, and high-wind events led to increased PM_{10} 24-hour NAAQS exceedances in the 1990s and early 2000s.

4.2.1 Population Trends

More than 96 percent of Clark County's population resides in HA 212, and more than 99 percent of the population in HA 212 resides within the BLM disposal area. Table 4-1 provides population data for Clark County over the last 20 years; during that time, the average annual population growth was 4.8 percent.

Year	Clark County	HA 212	BLM Disposal Area	Annual Population Change in HA 212	Annual Percent In- crease
1990	805,519	776,180	773,029	—	—
1991	829,839	797,973	794,779	21,793	2.8%
1992	870,692	837,862	834,604	39,889	5.0%
1993	919,388	884,184	880,874	46,322	5.5%
1994	986,152	949,139	945,784	64,955	7.3%
1995	1,048,668	1,009,812	1,006,467	60,673	6.4%
1996	1,119,708	1,077,971	1,074,597	68,159	6.7%
1997	1,170,113	1,127,419	1,124,161	49,448	4.6%
1998	1,246,193	1,199,347	1,196,164	71,928	6.4%
1999	1,321,176	1,272,638	1,269,290	73,291	6.1%
2000	1,428,689	1,372,022	1,367,181	99,384	7.8%
2001	1,498,278	1,448,827	1,445,970	76,805	5.6%
2002	1,578,332	1,525,226	1,522,291	76,399	5.3%
2003	1,641,529	1,586,032	1,583,363	60,806	4.0%
2004	1,747,025	1,691,647	1,685,391	105,615	6.7%
2005	1,815,700	1,759,636	1,752,457	67,989	4.0%

Year	Clark County	HA 212	BLM Disposal Area	Annual Population Change in HA 212	Annual Percent In- crease
2006	1,912,654	1,855,019	1,847,643	95,383	5.4%
2007	1,996,542	1,933,602	1,925,411	78,583	4.2%
2008	1,986,145	1,924,817	1,916,585	-8,785	-0.5%
2009	2,006,347	1,943,812	1,936,450	18,995	1.0%
2010	2,036,358	1,974,611	1,966,074	30,798	1.6%

Source: Clark County Department of Comprehensive Planning.

4.2.2 Development Patterns

More than 90 percent of the land of HA 212 is owned by federal agencies. The land is managed with varying types and intensities of use, according to individual agencies' land and resource management plans. BLM has the largest holding, including the Red Rock National Conservation Area west of Las Vegas. Most of the Spring Mountain Range, including Mt. Charleston, is administered by the U.S. Forest Service as part of the Humboldt-Toiyabe National Forest. The rapid disturbance and development of vacant land has been concentrated in the BLM disposal area, which includes the cities of Las Vegas, Henderson, and North Las Vegas, as well as the unincorporated areas of Clark County.

Monitored levels of PM_{10} have shown a continued decline since the early 2000s despite the rapid growth. It is reasonable, therefore, to conclude that improvements in HA 212 PM_{10} air quality have not been caused by a downturn in economic conditions, i.e., any reduction of PM_{10} concentrations in HA 212 can be reasonably attributed to the emission reduction control measures in the PM_{10} SIP, which are permanent and federally enforceable.

4.3 METEOROLOGICAL CONDITIONS

Summers in Clark County display the classic characteristics of the desert Southwest: daily high temperatures in the lower elevations often exceed 100°F, with lows above 70°F. The summer heat is usually tempered by low relative humidity, which may increase for several weeks during July and August in association with moist monsoonal wind flows from the south. This is the most common period for thunderstorms in the valley, which can result in high-wind events. Temperatures during the spring and fall are generally moderate, with strong winds being the most persistent weather hazard.

Winters are generally mild and pleasant. Afternoon temperatures average 60°F, and the sky is normally clear and sunny. Snow accumulation on valley floors is rare; however, higher elevations, such as the Spring Mountains, typically receive 5–10 feet of snowfall annually. Based on measurements from McCarran International Airport over the past 30 years, temperatures fall below 32°F an average of 24 days a year.

Average annual rainfall in the valley, also measured at McCarran, is approximately 4.16 inches. Table 4-2 lists temperature and rainfall averages in Clark County over the last seven decades.

Month	Maximum (°F)	Minimum (°F)	Average (°F)	Rainfall (inches)
January	57.1	34.5	47.0	0.52
February	62.5	38.9	52.2	0.58
March	69.5	44.3	58.3	0.45
April	78.2	51.7	66.0	0.20
Мау	88.5	61.1	75.4	0.15
June	98.6	69.9	85.6	0.07
July	104.6	76.5	91.2	0.43
August	102.2	74.8	89.3	0.44
September	94.7	66.6	81.3	0.32
October	81.3	54.3	68.7	0.25
November	66.5	42.0	55.0	0.36
December	57.2	34.7	47.0	0.40
Annual Average	80.1	54.1	68.1	4.16

Table 4-2.	Monthly Averages for Temperature and Rainfall (1937 to 2010)
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Source: DRI (2010).

Elevated levels of PM_{10} emissions in HA 212 are largely associated with wind-blown dust, reentrained road dust, or construction emissions, and are often amplified by dry, arid conditions. High-wind events in HA 212 generally occur between February–May and September–December, although high winds have been recorded in other months as storms pass through. The monitoring stations that record the highest concentrations of PM_{10} during high-wind events are typically those located near large expanses of disturbed soil.

Figures 4-1 and 4-2 illustrate data on wind speed and precipitation, respectively, in HA 212 for the last 10 years. Rainfall dropped significantly during this time (2006–2009), although winds remained relatively constant. SIP-implemented PM_{10} control measures were effective in spite of drought-like conditions, so it is reasonable to assume that lower PM_{10} concentrations over the last 10 years were not caused by atypical meteorological conditions.

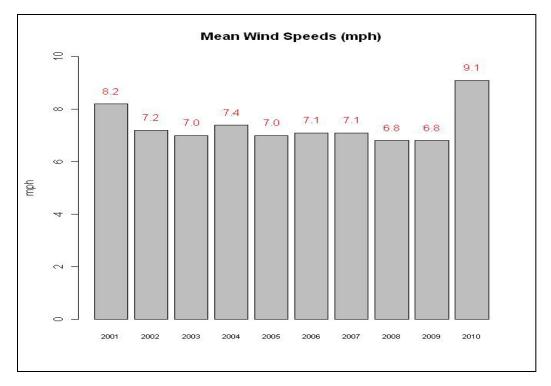
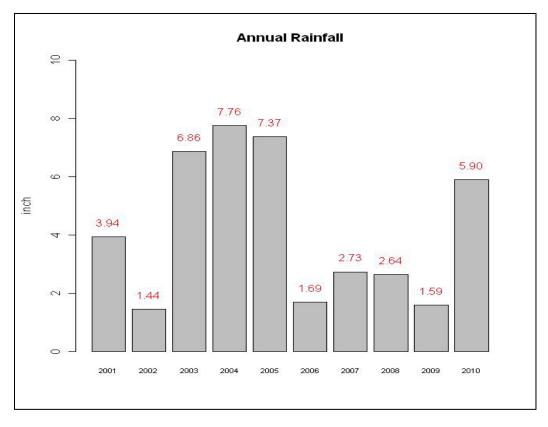


Figure 4-1. Wind Speeds (2001–2010).





4.4 ATTAINMENT AND MAINTENANCE CONTROL MEASURES

CAA Section 110(a)(2)(A) requires that each SIP include enforceable emission limitations and other control measures to achieve and maintain the NAAQS. As part of its attainment effort, Clark County included the Section 90 series of the Clark County Air Quality Regulations (AQRs) in the PM_{10} SIP. These rules include control requirements for open areas, construction activities, and vacant lands, and their implementation and enforcement have significantly contributed to the improvement of air quality in the Las Vegas Valley.

Clark County is now obligated to maintain the valley's improved air quality status. Clark County is not proposing amendments to the Section 90-series AQRs with this maintenance plan; in fact, the Section 90 series is vital to maintaining compliance with the PM_{10} NAAQS. Construction activities and vacant lands are the two source categories with the highest PM_{10} emissions; while their controls are not without cost, Clark County cannot relax PM_{10} measures applicable to HA 212 at this time. Section 110(1) of the CAA states: "[EPA] shall not approve a revision of a plan if the revision would interfere with any applicable requirement concerning attainment and reasonable further progress...."

4.4.1 Stationary Point and Nonpoint Source Regulations

 PM_{10} stationary point sources in Clark County are generally industrial and utility combustion sources that emit 70 tons per year or more. Nonpoint sources are commercial, small-scale industrial, and residential sources whose emissions fall below point source reporting levels and which are too numerous or too small to identify individually.

Clark County has numerous SIP and non-SIP regulations in place for stationary and nonpoint sources, notably AQR Sections 12.0–12.13 and Section 21. Clark County also enforces several federal regulations as part of its emissions control program, including 40 CFR 61 and 63, "National Emissions Standards for Hazardous Air Pollutants" (under AQR Section 13) and 40 CFR 60, "Standards of Performance for New Stationary Sources" (under AQR Section 14).

As part of its 2001 PM_{10} SIP submittal, Clark County adopted comprehensive fugitive dust controls (the Section 90 series). The following list outlines these AQRs:

- Section 90 requires stabilization of open areas and vacant lands to prevent entrainment of particulate matter.
- Section 91 requires stabilization of unpaved roads, and paving of unpaved roads when traffic volume is equal to or greater than 150 vehicles per day. It also prohibits construction of new unpaved roads in public thoroughfares.
- Section 92 requires stabilization of unpaved parking areas, including material handling and storage yards, and generally prohibits construction of new unpaved parking lots in the nonattainment area.
- Section 93 sets forth requirements for paved roads, street sweeping equipment, and certain other dust-mitigating devices.

• Section 94 establishes permitting and dust control requirements for construction activities. This regulation incorporates by reference a comprehensive dust control handbook (DAQEM 2003) that outlines Best Management Practices (BMP) for construction activities.

The Clark County dust program met EPA's most stringent measures requirements at the time of adoption, and it remains state-of-the-art because of Clark County's SIP commitment to evaluate the feasibility of revising the Section 90 rules. This resulted in numerous amendment adoptions in 2002 and 2003.

4.5 ADDITIONAL EMISSION REDUCTION CONTROL MEASURES

4.5.1 Regional Haze Rule

This rule, promulgated in July 1999, mandates emission reductions to achieve natural visibility levels in mandatory Class I areas by 2064. Control measures principally address light-scattering and -absorbing aerosols. Several of these measures will be implemented throughout the western states, i.e., Best Available Retrofit Technology will be installed on older emissions units. The measures will be operational by January 1, 2015, or no later than five years after approval of state regional haze SIPs, whichever comes first. Most western states, including Nevada, have submitted regional haze SIPs; EPA proposed full approval of Nevada's plan on June 22, 2011 (76 FR 36450).

4.5.2 Transportation Conformity

Clark County will continue to work closely with the Regional Transportation Commission of Southern Nevada (RTC) to assure that regional transportation plans and transportation improvement programs in HA 212 are consistent with and conform to Clark County's air quality program requirements, including the PM_{10} SIP.

4.5.3 Clark County Natural Events Action Plan

In April 2005, the BCC adopted the *Natural Events Action Plan for High-Wind Events: Clark County, Nevada* (NEAP). The NEAP protects public health by warning of impending wind events: dust control permittees are reminded to employ all BMP for dust control, the public is notified of wind events in progress, and Clark County citizens are educated on the health hazards of PM. Public notifications include information on how residents can reduce airborne particulates by avoiding certain individual or collective particulate-emitting activities, especially during high-wind events.

Protection of public health is the principal goal of the NEAP, which contains detailed information about actions implemented in Clark County to minimize public exposure to potentially high levels of PM_{10} caused by winds. Its primary components are:

- A high-wind event notification system that includes an early warning procedure.
- Education and outreach programs.

- Enhanced enforcement and compliance programs to reduce emissions.
- Submittal of required documentation to EPA in the event of an exceedance.

The only guidance in effect when Clark County developed its NEAP was an EPA policy memo, "Areas Affected by PM_{10} Natural Events" (EPA 1996), which allowed air quality data to be flagged so it would not count toward an area's attainment status if it could be shown there was a clear causal relationship between the data and one of three categories of natural events: volcanic and seismic activity, unwanted wild land fires, or high-wind events. On March 22, 2007, EPA promulgated a final rule (72 FR 13560) addressing the review and handling of air quality monitoring data influenced by "exceptional events," i.e., those for which the normal planning and regulatory process established by the CAA is not appropriate.

Clark County's NEAP procedures have been very effective since their adoption, and changes reflecting the exceptional event final rule have created an even stronger program. Clark County now provides more information to EPA in submittal packages, and has improved early warning processes to better inform the public.

Clark County continually updates its natural events program. One example is the high-wind exceptional event exercise drill, which is conducted each year before the windy season to refamiliarize staff with procedures and identify potential problem areas. Additionally, construction notices are issued that proactively warn sources of winds that are below NEAP event levels but could still impact public health. These and other enhancements provide essential tools for regularly evaluating operational processes to help reduce the health and environmental effects of PM on county residents.

4.6 AIR QUALITY TREND ANALYSIS: WEIGHT OF EVIDENCE

Clark County performed an air quality trend analysis for the period between 2001 and 2010 using quality-assured data from EPA's AQS database (Figure 4-2). The purpose was to use a weight-of-evidence approach to support the attainment demonstration of the PM_{10} NAAQS.

For the demonstration, a regressed logarithmic trend line was fit to the data points in lieu of a linear trend line because of its smoothing effect on the rate of change of the dependent variable (PM₁₀ design values, or *y*), and because the trend line is more representative of real world conditions (i.e., the line is prevented from dropping below zero (the lower asymptote) due to all values of y > 0).

The R-squared (R^2) of the regression—commonly called the "goodness-of-fit"—is the percentage of variance in y that can be accounted for by the independent variable (years, or x). An R^2 greater than 0.80 suggests that the regression line equation ($y = 62.32\ln(x) + 255.24$) strongly approximates the data points, and provides a significant level of credibility for the weight-of-evidence attainment demonstration. The R^2 of this regression is 0.9366.

Clark County is confident that future PM_{10} concentrations will continue to trend downward with the maintenance control measures described in Section 4.4 and continued enforcement of the PM_{10} control program.

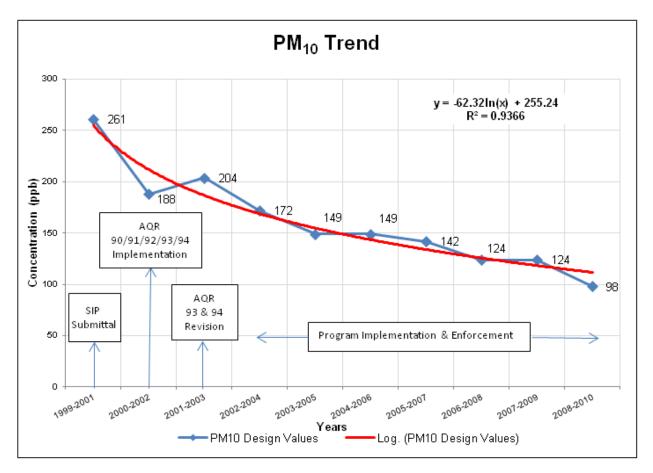


Figure 4-3. Actual and Log PM₁₀ Trend.

5.0 REQUIREMENTS FROM SECTION 110 AND PART D OF THE CLEAN AIR ACT AMENDMENTS

5.1 INTRODUCTION

The fourth required component of a redesignation request is verification that Clark County meets CAA Section 110 and Part D requirements. This section provides that verification.

5.2 SECTION 110 REQUIREMENTS

Before EPA can redesignate the Clark County PM_{10} nonattainment area, the provisions of CAA Sections 110(a)(2) and 110(1) must be satisfied. Section 110(a)(2) addresses the general requirements for SIPs; Section 110(1) prevents approval of SIP revisions if components of the plan would interfere with any applicable requirement concerning attainment, with reasonable further progress towards attainment of a NAAQS, or with any other applicable CAA requirement.

5.2.1 Section 110(a)(2)

This CAA section contains the following SIP requirements:

- 1. Establishment and implementation of enforceable emission limitations.
- 2. Monitoring, compilation, and analysis of ambient air quality data.
- 3. Preconstruction review and permitting of new and modified major stationary sources.
- 4. Consultation with, and provisions for, the participation of affected local governments.
- 5. Assurance the state has adequate funds and authority to enforce the SIP and associated regulations.
- 6. Establishment of permit fees for stationary sources.

Nevada Revised Statutes (NRS) 445B.500 addresses the establishment, administration, and enforcement of programs for controlling air pollution in Nevada. In Clark County, these programs are administered and enforced by the Clark County Department of Air Quality. The department has more than 100 staff members and an annual budget of approximately \$28 million to administer, implement, and enforce the CAA, including the development of air quality plans and regulations applicable to the PM_{10} maintenance area.

Clark County's current air quality program meets all the provisions required by Section 110(a)(2). If Clark County becomes unable to meet any of these provisions, NRS 445B.520 and 445B.530 allow the State Environmental Commission to assume jurisdiction over the local air quality management program to ensure that CAA requirements are met. EPA also has authority to impose sanctions on a state if it "finds that any requirement of an approved plan (or approved part of a plan) is not being implemented" (CAA, Section 179).

5.2.2 Section 110(l)

CAA Section 110(1) requires that SIP revisions not interfere with requirements for attainment or reasonable further progress regarding other criteria pollutants, or with any other CAA requirements. Since this plan proposes no changes to current emission reductions control measures, it poses no interference with Clark County's progress towards continued attainment of the carbon monoxide or ozone NAAQS. The only other criteria pollutant in Clark County is $PM_{2.5}$, for which Nevada is currently designated as attainment/unclassifiable under CAA Section 107(d).

5.3 PART D REQUIREMENTS

Sections 172(c) and 176(c) in Part D of the CAA lay out requirements that apply to all areas designated as nonattainment because of a NAAQS violation.

5.3.1 Section 172(c)

This CAA section contains general requirements for maintenance plans, including:

- 1. Implementation of reasonably available control measures, including reasonably available control technologies, for existing sources.
- 2. Reasonable further progress for existing sources.
- 3. A current EI, and periodic EIs every three years until attainment.
- 4. Identification and quantification of allowable emissions for new and modified stationary sources.
- 5. A stationary source permitting program.
- 6. Other measures, including enforceable emission limitations, additional control measures, and a schedule for compliance.
- 7. Compliance with Section 110 provisions.
- 8. Contingency measures.

Clark County's current air program, in conjunction with the components of this plan, meets all Section 172(c) provisions.

5.3.2 Section 176(c)

This section contains transportation and general conformity provisions applicable in maintenance areas. The transportation conformity process ensures transportation plans, programs, and projects in maintenance areas do not create new violations of the NAAQS, do not increase the frequency or severity of NAAQS violations, and do not delay timely attainment of the NAAQS. It does not

allow federal agencies to engage in, support, or provide financial assistance for licensing, permitting, or approving any project unless the project conforms to the SIP.

6.0 MAINTENANCE PLAN

6.1 INTRODUCTION

The fifth required component of an area's redesignation request is the fulfillment of CAA Section 107(d)(3)(E) requirements. These specify that for an area to be redesignated to attainment, EPA must approve a maintenance plan that meets all the conditions of CAA Section 175(a), including a comprehensive and accurate demonstration of continued maintenance of the PM₁₀ NAAQS for 10 years after redesignation.

Two approaches are acceptable for demonstrating maintenance of the NAAQS (EPA 1992). The first, the emissions projections approach, compares a projected EI with an attainment EI. The second is a complex analysis using gridded dispersion modeling. Clark County chose the emissions projection approach, comparing an EI for the baseline year (2008) to an EI for the maintenance year (2023). The maintenance year was chosen to allow EPA 18 months after receipt of a complete submittal to process Clark County's redesignation request.

The baseline EI represents an emission level that would not cause a NAAQS violation—the design value concentration of 98 μ g/m³ on the design day of April 15, 2008. If the projected maintenance year concentration remains at or below the baseline year concentration, continued maintenance is demonstrated. In addition, the maintenance demonstration includes a comparison between an interim year (2015) concentration and the baseline year concentration to show maintenance throughout the 10-year period after redesignation, not just in the maintenance year. A roll-forward model was also used to support the attainment demonstration

6.1.1 Inventory Domain

Although EPA requires an EI for the entire nonattainment area, attainment can be demonstrated for a larger or smaller area if there are compelling reasons to do so. Use of smaller areas can focus the attainment analysis on relevant areas and key anthropogenic sources that affect highconcentration monitors and population areas.

In choosing a domain boundary, such factors as wind patterns and source, monitor, and receptor locations (e.g., population centers) should be considered (EPA 1991). The boundary should be established such that phenomena at the boundary have little effect on the center. Background concentrations should account for sources not explicitly modeled (40 CFR 51, App. W; EPA 1987, Appendix D; and EPA 1981, p.27.)

Based on these criteria, and consistent with the boundary used in the PM_{10} SIP attainment demonstration, Clark County selected the BLM disposal area as the domain for the maintenance demonstration. Its edges are areas of low emission density that have little effect on the places of concern (i.e., locations with high monitored values). Sources in the outlying areas are effectively accounted for by including background concentrations in the inventory. This approach is supported by modeling work conducted in Clark County for previous studies (e.g., DRI 1997) that discovered sources of PM_{10} have a small radius of influence.

HA 212 covers roughly 960,000 acres, over half of which are under federal control:

- Bureau of Reclamation: 9,689 acres
- Desert National Wildlife Refuge: 226,728 acres
- Lake Mead National Recreational Area: 1,148 acres
- Nellis Air Force Base and Ranges: 25,124 acres
- Red Rock Canyon National Conservation Area: 195,780 acres
- Humboldt-Toiyabe National Forest: 60,073 acres.

Nonattainment area EIs were not projected for future years because Clark County based the attainment demonstration on the BLM disposal area. The demonstration was limited to this area for several reasons, including:

- All violations of the 24-hour NAAQS happened within the BLM disposal area.
- More than 99 percent of the population in the nonattainment area lives within the BLM disposal area.
- More than 98 percent of the vehicle miles traveled (VMT) in the nonattainment area are within the BLM disposal area.
- The topography within the BLM disposal area is relatively uniform, a factor that minimizes modeling uncertainty, whereas the outlying areas of the nonattainment area vary by over 8,000 feet a factor that increases modeling uncertainty.
- All man-made emissions of PM_{10} , except one major stationary source and small percentages of minor sources, unpaved road dust, and paved road dust, lie within the BLM disposal area.
- Focusing on the BLM disposal area places a greater emphasis on sources closest to human receptors.

Before Clark County attained the PM_{10} NAAQS, all measured violations occurred within the BLM disposal area, which is also where nearly all anthropogenic emissions within the nonattainment area occur. As part of a network saturation study (DAQEM 2007b), three samplers were deployed outside the BLM disposal area but within the nonattainment area. No violations were recorded.

6.2 TRANSPORTATION INPUT DATA

Table 6-1 summarizes the transportation data (i.e., daily VMT) used to develop the EIs in Section 6.4 (RTC 2008). All other input data used in developing the EIs, such as vehicle fleet mix, seasonal/day-of-the-week adjustment factors, and hourly activity profiles, have been updated with the most current data available.

Year	VMT (HA 212)	VMT (BLM Disposal Area)
Baseline (2008)	39,377,980	38,795,925
Interim (2015)	48,886,838	48,073,477
Maintenance (2023)	63,994,191	62,735,685

Table 6-1. Daily VMT Data Used to Develop Emission Inventories

6.3 EFFICIENCY AND EFFECTIVENESS FACTORS

Control efficiency, rule effectiveness, and rule penetration factors were applied to the baseline emissions of point and nonpoint source categories affected by the AQRs, when applicable. The term "control efficiency" includes capture efficiency for point sources, which defines the percentage of emissions from a source captured by a control device. Rule effectiveness reflects the actual capability of a regulatory program to achieve the emission reductions required by regulation. Rule penetration is the assumed percentage of emissions of the targeted Source Classification Code subject to the requirements of a rule.

6.4 EMISSION INVENTORY TYPE CATEGORIES

The PM_{10} EIs were derived from estimates developed for categories including point sources, nonpoint sources, mobile, and banked emission reduction credits (ERCs). The following sections briefly discuss each category and its estimated emissions; more detailed explanations of the estimates are provided in the technical support document (Appendix A).

6.4.1 Point Sources

Clark County's point source inventory includes all airport/aircraft and Title V stationary sources inside HA 212, as well as minor stationary sources clustered together closely enough to be considered potential hot spots of emissions within the BLM disposal area.

Clark County has authority over most emission units in the county; however, Nevada state law places certain electric steam-generating units in the county under NDEP jurisdiction. The facilities within the nonattainment area over which NDEP has or had authority, partial or whole, are:

• <u>NV Energy Clark Station</u>. The emission units at this facility that once operated under NDEP's jurisdiction have been decommissioned. However, emission units under Clark County's jurisdiction still operate at this facility.

• <u>NV Energy Sunrise Station</u>. Certain emission units at this facility operate under NDEP's jurisdiction, while others operate under Clark County's jurisdiction.

The status of all units at these facilities, whether decommissioned or in current operation, was properly considered in the point source EIs.

All point source EIs for the baseline year (2008) were obtained from reports submitted by the individual sources, and reflect actual emissions for that calendar year. This information was quality assured/quality controlled by Clark County staff.

Projections were performed for 2015 and 2023 for each facility (except Nellis Air Force Base) using the 2008 EI and Economic Growth Analysis System, version 5.0, Source Classification Code growth factors, which are based on the Regional Economic Models, Inc. 6.0 model. Projections for Nellis were estimated using actual 2008 emissions and projections supplied by the source.

Linear regression was used to establish emissions projections for 2015 and 2023. To account for the possibility of a new power plant or expansions of existing plants, emissions from a theoretical power facility were included for the 2015 and 2023 EIs.

6.4.2 Nonpoint Sources

Nonpoint sources of emissions are those that fall below point-source reporting levels and are too numerous or small to identify individually. Generally, they are small-scale industrial or residential operations that use emission-generating materials or processes.

Nonpoint source emission calculations are estimated as countywide totals rather than as individual source emissions. With some exceptions, these emissions are calculated by multiplying an EPA-approved factor (emissions per unit of activity) by the appropriate activity or activity surrogate responsible for generating emissions. When available, actual activity data is used; when data is unavailable, surrogates are used, including county population or employment data by industry type (and, when applicable, by growth factors from the Economic Growth Analysis System).

6.4.3 Mobile Sources

The mobile sources category consists of on-road and non-road sources and locomotives. On-road mobile sources consist of cars, trucks, motorcycles, and other motor vehicles traveling on public roadways. Emissions from this category are vehicle exhaust, brake wear, and tire wear, all calculated using the MOVES2010a model. Re-entrained road dust from on-road sources, while included in the mobile source budgets for transportation conformity, is addressed in the nonpoint sector of this plan. Re-entrained road dust emissions for on-road emissions were calculated using the January 2011 version of AP-42.

Non-road mobile sources consist of a wide variety of equipment types that either move under their own power or can be moved from site to site. Exhaust emissions were calculated using EPA's NONROAD model. Re-entrained unpaved road dust, while included in the mobile source budgets, is addressed in the nonpoint portion of this plan.

The third and last subcategory is locomotives, whose emissions were categorized separately from the nonpoint source inventory.

6.4.4 Banked Emission Reduction Credits

If a source voluntarily reduces emissions beyond the permit limits, and/or implements controls beyond what is required, it may apply for ERCs pursuant to Section 12.7. If the ERCs are approved, they will be banked for future use or transacted in accordance with the AQRs. Clark County may grant reciprocity for use of ERCs banked by NDEP within the county if the ERCs comply with all AQR requirements at the time of redemption, and NDEP has the authority to grant reciprocity for use of Clark County-banked ERCs at sources in Clark County that it permits. NDEP has jurisdiction over permitting, compliance, and ERC banking for sources in the county that burn fossil fuels in a boiler to produce steam for the production of electricity (NRS 445B.500); all other emission units in the county are under the jurisdiction of Clark County.

Clark County chose to account for all ERCs in the maintenance year (2023) because ERCs can be used in nonattainment areas to offset emissions of new major sources and major modifications at existing major sources. ERC emissions are accounted for in the point source emissions growth estimated for 2023 because point source emissions growth and ERCs largely overlap. To be conservative, however, Clark County is not considering the potential overlap in this demonstration.

6.5 SUMMARY OF EMISSION INVENTORIES

Table 6-2 summarizes the 2008, 2015, and 2023 PM_{10} EIs for the BLM disposal area in tons per day (tpd) for five source categories. In particular, emissions from wind erosion of vacant lands show a significant decrease over time as construction within the BLM disposal area consumes vacant lands.

Source	2008 (tpd)	2015 (tpd)	2023 (tpd)	
Point Emissions:				
Subtotal:	2.19	2.60	2.88	
Nonpoint Emissions:				
Fuel Combustion	1.23	1.29	1.38	
Residential Wood Combustion	1.89	1.90	1.92	
Locomotive	0.06	0.06	0.06	
Paved Road	30.85	38.04	48.78	
Unpaved Road	5.84	6.51	7.49	
Commercial Cooking	2.19	2.52	2.83	
Mineral Processing (concrete, gypsum)	0.28	0.34	0.40	
Mineral Processing (stone)	0.15	0.18	0.21	
Asphalt	0.33	0.37	0.40	
Wind Erosion (Construction)	183.97	217.70	249.21	
Construction	30.93	37.69	41.22	
Sand & Gravel	0.42	0.51	0.60	
Open Burning	0.02	0.02	0.02	
Wind Erosion (Vacant Lands)	439.05	288.16	122.77	
Structural Fires	0.02	0.02	0.03	
Vehicle Fires	0.03	0.03	0.04	
Subtotal:	697.23	595.34	477.36	
On-road Emissions:				
Subtotal:	3.08	2.52	2.75	
Nonroad Emissions:				
Subtotal:	3.74	2.95	1.94	
Emission Reduction Credits:				
Subtotal:	0.31	0.31	0.31	
Total:	706.55	603.72	485.24	

Table 6-2.	Summary of Total	Daily PM ₁₀ Emis	sions (tpd)
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Figures 6-1 and 6-2 show emission distributions in 2008 and 2023, respectively, and Figure 6-3 shows the nonpoint source category EIs for each of the three demonstration years. Appendix A provides detailed information on the methodologies used to estimate EIs.

In summary, total PM_{10} emissions decrease 31 percent (221 tpd) between 2008 and 2023.

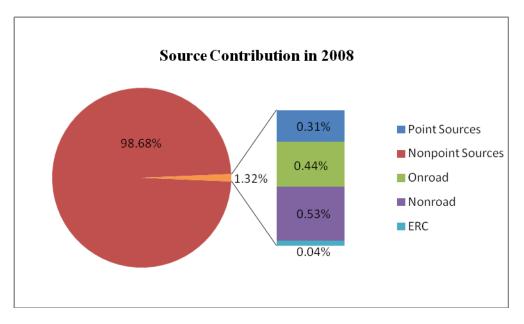


Figure 6-1. Emission Distribution in 2008.

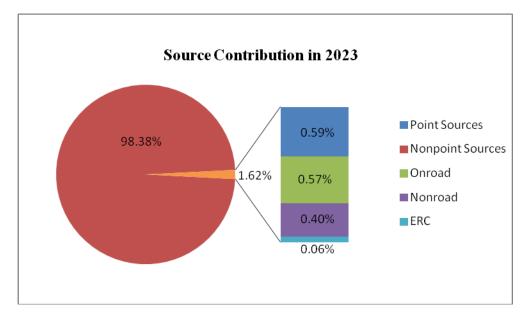


Figure 6-2. Emission Distribution in 2023.

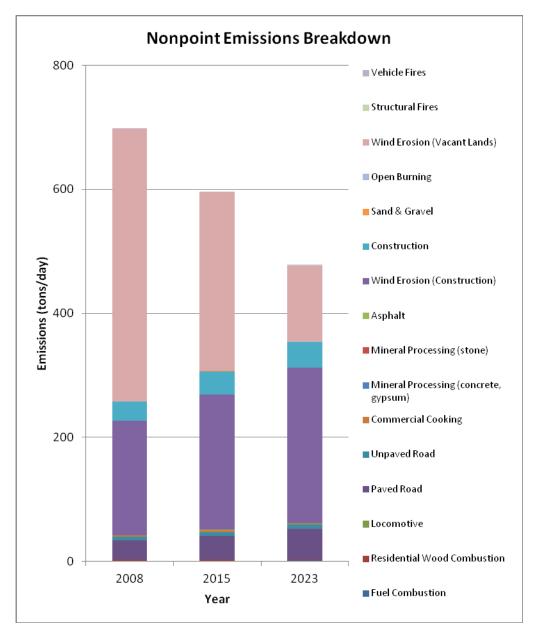


Figure 6-3. Nonpoint Emissions in the BLM Disposal Area.

6.6 MAINTENANCE DEMONSTRATION

CAA Section 175(a) requires each request for redesignation to be accompanied by a SIP revision that provides for maintenance of the NAAQS for at least 10 years after redesignation. EPA (1992) recommends using the ratio of baseline emissions to the design value, adjusted for background concentration, to determine whether projected emissions for a future year will predict concentrations in compliance with the NAAQS.

Table 6-2 and Figure 6-4 show that projected future-year PM_{10} emissions are less than 2008 emissions. Since projected emissions for 2015 and 2023 are less than 2008 emissions, maintenance of the NAAQS is demonstrated.

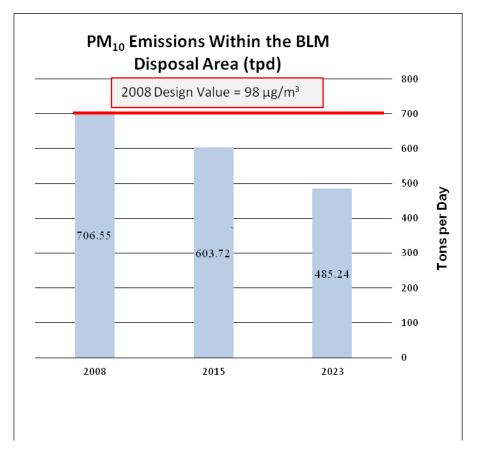


Figure 6-4. Comparison of 2008, 2015, and 2023 PM₁₀ Emissions.

The EIs show a downward trend in PM_{10} emissions, mainly due to the control measures described in Section 4.4. No emission increases are expected that will threaten the demonstration of attainment; even if new sources emerge, the 2023 EI is well below the 2008 EI.

6.7 ROLLBACK MODEL

EPA recommends a combination of receptor and dispersion models, paired with reliable emission projections, to model attainment in a future year. However, receptor models cannot quantify absolute PM_{10} emission estimates in some circumstances, such as urban locations where a large fraction of particulate emissions come from nontraditional sources (e.g., construction operations or wind-blown fugitive dust). Dispersion models also have limitations that make modeling fugitive dust difficult, since uncertainties regarding emission rates, deposition rates, and plume characteristics of course fraction crustal particulates pose problems in obtaining valid results.

For these reasons, Clark County adopted the proportional rollback model approach to demonstrate attainment in the PM_{10} SIP. Since it was an accurate predictor, the same approach was used to demonstrate continuous (maintenance) attainment for 2015 and 2023.

The rollback model assumes a linear relationship between PM_{10} emissions from sources and their contribution to measured PM_{10} levels in ambient air: for example, if 25 percent of emissions in an area come from wind erosion of vacant lands, the model assumes that 25 percent of the ambient concentration measured by a monitor in that area (minus the background concentration, which remains constant) came from this wind-entrained soil. The proportional rollback model assumes that any reduction or increase in emissions will cause a corresponding reduction or increase in the ambient concentration measured at the monitoring station. The basic steps are:

- 1. Determine the representative monitoring station(s) and design value.
- 2. Define the background concentration as the lowest PM_{10} value recorded at an upwind monitoring station on the same day or during the same time period.
- 3. Estimate the anticipated increase or decrease in emissions from each source.
- 4. Apply the same percentage of increase or decrease from emissions to the design concentration.
- 5. Calculate the anticipated ambient concentration after the emissions change.

The PM_{10} SIP analyzed five microscale sites, in addition to completing a valley-wide analysis. Since the areas surrounding those five sites are now built out, they are no longer considered representative. Moreover, as the PM_{10} SIP stated, the percent reduction for attainment was equal or higher valley-wide than at the microscale sites. The rollback analysis for this maintenance plan therefore uses a valley-wide scale.

The analysis used a design value of 98 μ g/m³, minus the background concentration of 37 μ g/m³ measured at Jean on the design day (April 15, 2008). The Jean monitoring station is upwind of the nonattainment area, so it is often used to represent background levels in Clark County.

The referenced design-day and future-year emission calculations do not include contributions from the secondary formation of particulates, and the rollback method does not account for nonlinear secondary particulate formation. The PM₁₀ SIP accounted for this by adding 3.5 μ g/m³ to the background concentration, based on past chemical mass balance studies. Including 3.5 μ g/m³ to represent secondary PM, the background level was 40.5 μ g/m³. Subtracting this background level from the design value yielded a concentration due to anthropogenic emissions of 57.5 μ g/m³ (98 μ g/m³ – 40.5 μ g/m³).

The following PM_{10} concentrations are anticipated in 2015 and 2023.

- Future year 2015:
 - Total 2008 emissions = 706.55 tpd (Table 6-2)
 - Total 2015 emissions = 603.72 tpd (Table 6-2)
 - Total 2008 anthropogenic concentration = $57.5 \ \mu g/m^3$

- Anthropogenic concentrations for 2015, determined by multiplying the 2008 anthropogenic concentration by the ratio of 2015 emissions to 2008 emissions: $57.5 \ \mu g/m^3 \cdot (603.72 \ tpd / 706.55 \ tpd) = 49.13 \ \mu g/m^3$
- Adding back the background concentration, which is presumed constant: $49.13 \ \mu g/m^3 + 40.5 \ \mu g/m^3 = 89.63 \ \mu g/m^3$
- Future year 2023:
 - Emissions = 485.24 tpd (Table 6-2)
 - Concentration = $(57.5 \ \mu g/m^3 \cdot (485.24 \ tpd / 706.55 \ tpd)) + 40.5 \ \mu g/m^3 = 79.99 \ \mu g/m^3$

The concentrations predicted by the rollback analysis show that the 24-hour PM_{10} NAAQS will be maintained through 2023.

6.8 MONITORING NETWORK AND VERIFICATION OF CONTINUED ATTAINMENT

After being redesignated to attainment status, Clark County will continue to operate its air quality monitoring network to verify attainment of the PM_{10} NAAQS. Annual review of the eight State and Local Air Monitoring System monitors will be conducted in accordance with 40 CFR 58.20(d) to ensure the system continues to meet monitoring objectives.

6.9 CONTINGENCY MEASURES

CAA Section 175A(d) requires that a maintenance plan contain contingency provisions to assure prompt correction of any violation of the NAAQS. Contingency plans must also describe the methods that will be used to ensure the measures in the plan are adopted quickly if triggered. EPA (1992) states that a contingency plan does not have to contain fully adopted contingency measures, but should at least have three primary elements:

- 1. A list of potential contingency measures.
- 2. An explanation of the tracking and triggering mechanisms that will determine when contingency measures are needed.
- 3. A description of the process for recommending and implementing contingency measures, with specific timelines for action.

6.9.1 Potential Contingency Measures

Clark County proposes the following potential control measures as part of this maintenance plan:

• Implementing a new dust control permit requirement for certain short-term activities that disturb, or have the potential to disturb, soils that emit PM into the atmosphere, such as

mechanized weed abatement, fairs, carnivals, Christmas tree and Halloween pumpkin lots, art sales, and similar activities.

- Conducting a comprehensive review and update of the *Construction Activities Dust Control Handbook* (DAQEM 2003) to increase the effectiveness of existing BMP and to identify and develop new BMP. Updated BMP may include management practices for soil-disturbing activities not covered in current practices. Potential new BMP include practices for roadway and detention basin maintenance activities.
- Reviewing the dust mitigation plan requirements in AQR Section 90, giving consideration to reducing the acreage-trigger thresholds and incorporating additional mitigation plan criteria. Also reviewing Section 92, giving consideration to lowering applicability thresholds for unpaved parking lots.
- Reassigning staff to provide additional field enforcement of the AQRs that control sources of fugitive dust emissions.
- Mapping construction activities during inspections to collect PM₁₀ data to provide greater accuracy for calculating actual emissions from construction projects.
- Developing a new dust control database that will strengthen oversight of dust control permits and improve source compliance.
- Amending current fugitive dust regulations to incorporate new technologies and measures for controlling emissions and preventing them from crossing property lines or causing a nuisance.

Clark County may use additional strategies to address any future violations in the most appropriate and effective manner.

6.9.2 Tracking and Triggering Mechanisms

The primary tracking mechanism will be Clark County's continuous PM_{10} monitoring network (Section 6.9). Clark County will examine ambient air quality monitoring data within 30 days of collection to determine if the PM_{10} NAAQS has been exceeded.

The primary trigger mechanism will be a confirmed violation of the PM_{10} NAAQS, defined as more than one exceedance day per year averaged over a three-year period. The trigger date will be 60 days from the date a monitoring station records a reading that results in a design value equal to or greater than the PM_{10} NAAQS.

The triggering of the contingency plan would not automatically require a revision of the PM_{10} SIP, nor would Clark County necessarily be redesignated to nonattainment. Instead, it would have a period of time to correct the violation by implementing one or more contingency measures. If violations continued after contingency measures were implemented, additional measures would be implemented until the violations were corrected.

The RTC's ongoing regional transportation planning process will serve as another means of tracking mobile source emissions, since the RTC revises its transportation improvement plan every three years and these revisions are subject to a transportation conformity finding. That process will serve as a periodic check on maintaining the VMT and mobile source emissions projections in this plan.

6.9.3 Action Resulting from Trigger Activation

Within 45 days of the trigger date, Clark County must notify EPA that an internal review process will begin to evaluate potential contingency measures. Within 90 days of that notification, Clark County must send EPA an information report outlining recommended actions. Clark County will then solicit stakeholder involvement through public forums (e.g., PM_{10} working groups) to refine the process of implementing the recommended actions. The BCC and/or Nevada State Environmental Commission will hold one or more public hearings to consider the recommended contingency measures, along with any others that may address the confirmed violation. The necessary measures must be adopted and implemented within 18 months of submittal of the information report to EPA.

6.10 SUBSEQUENT MAINTENANCE PLAN REVISIONS

Section 175A(b) requires that, eight years after redesignation of any area to attainment under Section 107(d), the state shall submit an additional revision of the applicable SIP that shows how the NAAQS will be maintained for 10 years after the expiration of the first 10-year period. Clark County commits to the submittal of a revised maintenance plan eight years after HA 212 is redesignated to attainment.

7.0 MOTOR VEHICLE EMISSIONS BUDGETS

Under CAA Section 176(c), transportation plans, programs, and projects in maintenance areas that are funded or approved under Title 23 of the U.S. Code or the Federal Transit Act must conform to the on-road motor vehicle emissions budgets (MVEBs) specified in the applicable SIP. In this case, 40 CFR 93.118 provides the criteria and procedures for MVEBs.

The MVEB establishes a cap on motor vehicle-related emissions that cannot be exceeded by predicted transportation system emissions. The emissions budget applies a ceiling on emissions in the year for which it is defined, and for all subsequent years until a different budget is defined for another year or a SIP revision modifies the budget. Table 7-1 lists 2008, 2015, and 2023 PM_{10} mobile source emissions for the BLM disposal area.

Source	2008	2015	2023
Paved road	30.85	38.04	48.78
Unpaved road (public)	0.28	0.32	0.36
Vehicle (exhaust, brake wear, and tire wear)	3.08	2.52	2.75
Road construction	1.54	1.87	2.05
Construction track-out	0.25	0.30	0.33
Wind erosion (road construction)	6.53	7.73	8.85
TOTAL	42.53	50.78	63.12

Table 7-1. BLM Disposal Area PM_{10} Mobile Source Emissions (tpd)

EPA's conformity regulation (40 CFR 93.124) allows a SIP to quantify explicitly the amount by which motor vehicle emissions could be higher while still demonstrating compliance with the maintenance requirement. The plan can then allocate some or all of this additional "safety margin" to the emissions budgets for transportation conformity purposes. The safety margin for this maintenance plan is 52 μ g/m³, the difference between the NAAQS value (150 μ g/m³) and the design value (98 μ g/m³). Using the methodology of Section 6.7, the MVEBs were recalculated to include a safety margin.

The mobile source budgets for 2008, 2015, and 2023 (Table 7-1) were adjusted to 141.41 tpd, which match the emission budgets in the PM_{10} SIP and were thus approved by EPA in 2004 (69 FR 32273). Clark County's request for the same PM_{10} budget figure is both for consistency and for RTC's familiarity with it in transportation planning. The mobile source budgets in Table 7-1 were increased by 98.88 tpd, 90.63 tpd, and 78.29 tpd for 2008, 2015 and 2023, respectively. Table 7-2 lists the adjusted emission inventories for 2008, 2015, and 2023 based on the mobile budget increases.

The design values were recalculated using the rollback model. These parameters were used to recalculate the estimated concentrations for 2008, 2015, and 2023. The revised maintenance demonstration for 2008, 2015, and 2023 still shows maintenance of the PM_{10} standard: it estimates maximum PM_{10} concentrations of 106 µg/m³ in 2008, 97 µg/m³ in 2015, and 86 µg/m³ in 2023.

- Adjusted 2008 data:
 - Pre-adjusted total 2008 emissions = 706.55 tpd (Table 6-2)
 - Desired mobile source emissions budget = 141.41 tpd
 - Pre-adjusted 2008 mobile source emissions budget = 42.53 (Table 7-1)
 - Since total 2008 emissions include the pre-adjusted 2008 mobile budgets, the latter are subtracted from the total and then the desired budgets are added: 706.55 tpd 42.53 tpd + 141.41 tpd = 805.43 tpd (adjusted 2008 EI)
 - To determine the adjusted 2008 design value:
 - Pre-adjusted anthropogenic 2008 concentration = $57.5 \,\mu g/m^3$ (Section 6.7)
 - Pre-adjusted total 2008 EI = 706.55 tpd (Table 6-2)
 - Adjusted 2008 EI = 805.43 tpd
 - Background concentration = $40.5 \,\mu g/m^3$ (Section 6.7)
 - To determine the adjusted 2008 anthropogenic concentration, the pre-adjusted 2008 anthropogenic concentration is multiplied by the ratio of the adjusted 2008 emissions to the pre-adjusted 2008 emissions: $57.5 \ \mu g/m^3 \cdot (805.43 \ tpd / 706.55 \ tpd) = 65.5 \ \mu g/m^3$
 - Because the background concentration, which is constant, is not accounted for in this anthropogenic concentration, it is now added to determine the adjusted 2008 design concentration: $65.5 \,\mu g/m^3 + 40.5 \,\mu g/m^3 = 106 \,\mu g/m^3$
- Adjusted 2015 data:
 - Pre-adjusted total 2015 emissions = 603.72 tpd (Table 6-2)
 - Desired mobile source emissions budget = 141.41 tpd
 - Pre-adjusted 2015 mobile source emissions budget = 50.78 (Table 7-1)
 - In that the total 2015 emissions include the pre-adjusted 2015 mobile budgets, the latter are subtracted from the total and then the desired budgets are added: 603.72 tpd 50.78 tpd + 141.41 tpd = 694.35 tpd (adjusted 2015 EI)
 - To determine the adjusted 2015 concentration:
 - Pre-adjusted anthropogenic 2008 concentration = $57.5 \ \mu g/m^3$ (Section 6-7)
 - Adjusted 2015 EI = 694.35 tpd

- Pre-adjusted total 2008 emissions = 706.55 tpd (Table 6-2)
- Background concentration = $40.5 \mu g/m^3$ (Section 6-7)
- The pre-adjusted 2008 anthropogenic concentration is multiplied by the ratio of the adjusted 2015 emissions to the pre-adjusted 2008 emissions = $57.5 \ \mu g/m^3 \cdot (694.35 \ tpd / 706.55 \ tpd) = 56.5 \ \mu g/m^3$
- Because the background concentration, which is constant, is not accounted for in this anthropogenic concentration, it is now added to determine the adjusted 2015 design concentration = $56.5 \ \mu g/m^3 + 40.5 \ \mu g/m^3 = 97 \ \mu g/m^3$
- Likewise, the adjusted 2023 data is calculated as:
 - Adjusted 2023 EI = 485.24 tpd 63.12 tpd + 141.41 tpd = 563.53 tpd
 - Adjusted 2015 anthropogenic concentration: $(98 \ \mu g/m^3 40.5 \ \mu g/m^3) \bullet (563.53 \ tpd / 706.55 \ tpd) = 45.9 \ \mu g/m^3$
 - Adjusted 2023 design concentration = $45.9 \,\mu g/m^3 + 40.5 \,\mu g/m^3 = 86 \,\mu g/m^3$

Parameter	2008	2015	2023
Concentration before adjustment ($\mu g/m^3$)	98	89.63	79.99
Background ($\mu g/m^3$)	40.5	40.5	40.5
EI (tpd)	706.55	603.72	485.24
Mobile emissions (tpd)	42.53	50.78	63.12
Adjusted EI (tpd)	805.43	694.35	563.53
Estimated concentrations after adjustment $(\mu g/m^3)$	106	97	86

 Table 7-2. Revised Maintenance Demonstration

Upon an EPA affirmative adequacy finding and approval of the MVEBs, the budgets in Table 7-3 will be used for conformity determinations in future regional transportation plans.

Year	2008	2015	2023
Original	42.53	50.78	63.12
Adjustment	+ 98.88	+ 90.63	+ 78.29
MVEB	141.41	141.41	141.41

8.0 **REFERENCES**

AQR Section 91. Fugitive Dust from Unpaved Roads, Unpaved Alleys, and Unpaved Easement Roads (amended 7/1/2004).

40 CFR 50. National Primary and Secondary Ambient Air Quality Standards.

40 CFR 51. Requirements for Preparation, Adoption, and Submittal of Implementation Plans.

40 CFR 58. Ambient Air Quality Surveillance.

40 CFR 60. Standards of Performance for New Stationary Sources.

40 CFR 93. Determining Conformity of Federal Actions to State or Federal Implementation Plans.

70 FR 20665. Clean Air Fine Particle Implementation Rule.

70 FR 71612. Final Rule to Implement the 8-Hour Ozone National Ambient Air Quality Standard-Phase 2; Final Rule to Implement Certain Aspects of the 1990 Amendments Relating to New Source Review and Prevention of Significant Deterioration as They Apply in Carbon Monoxide, Particulate Matter and Ozone NAAQS; Final Rule for Reformulated Gasoline.

75 FR 45485. Determination of Attainment for PM_{10} for the Las Vegas Valley Nonattainment Area, NV.

43 U.S.C. § 932. Mining Act of 1866 (repealed 1976).

43 U.S.C. § 1701. Federal Land Policy and Management Act of 1976.

49 U.S.C. § 63. Federal Transit Act.

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EPA. 2006. "Unpaved Roads." Section 13.2.2 of Vol. I, "Stationary Point and Area Sources," of AP-42, *Compilation of Air Pollutant Emission Factors*. 5th ed. Washington, D.C.: U.S. Environmental Protection Agency.

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CLARK COUNTY AIR QUALITY REGULATIONS



Revised January 29, 2020 Distributed February 4, 2020

SECTION 90: FUGITIVE DUST FROM OPEN AREAS AND VACANT LOTS

90.1 Fugitive Dust from Open Areas and Vacant Lots

- 90.1.1 **Purpose:** To limit the emission of particulate matter into the ambient air from Open Areas and Vacant Lots.
- 90.1.2 **Applicability:** The provisions of this regulation shall apply to Open Areas and Vacant Lots which are located in a PM₁₀ nonattainment area, an area subject to a PM₁₀ maintenance plan defined under 42 U.S. Code § 7505a, or the Apex Valley (hydrographic areas 216 and 217). Nothing in Section 90 of these Regulations shall be construed to prevent enforcement of Section 40 (Prohibition of Nuisance Conditions) of these Regulations. The provisions of this regulation shall not apply to normal farm cultural practices or the raising of fowl or animals. The provisions of this regulation shall not apply to Stationary Sources as defined in Section 0, except that these control measures shall be considered as part of a BACT determination.

90.1.3 Effective Date of This Regulation:

- 90.1.3.1 Section 90, adopted by the Clark County Board of County Commissioners on June 22, 2000, shall be effective in hydrographic area 212 on January 1, 2001, except as otherwise provided herein.
- 90.1.3.2 Section 90 shall be effective in hydrographic areas 216 and 217 on April 1, 2002, except as otherwise provided herein.

90.2 **Requirements:**

90.2.1 **Open Areas And Vacant Lots:** If Open Areas and Vacant Lots are 5,000 square feet or larger and are disturbed by any means, including use by Motor Vehicles and/or Off-Road Motor Vehicles or material dumping, then the Owner and or Operator of such Open Areas and Vacant Lots shall implement one or more of the Control Measures described in Subsection 90.2.1.1 of this regulation within 30 calendar days following the initial discovery of disturbance or vehicle use on Open Areas and Vacant Lots. The Owner and/or Operator shall implement all control measures necessary to limit the disturbance of Open Areas and Vacant Lots in accordance with the requirements of this regulation. Advisory Notice: In order to conserve water to the greatest extent practicable, the use of Reclaimed Water is highly encouraged.

90.2.1.1 **Control Measures:**

- Where there is evidence of soil disturbance by Motor Vehicles and/or (a) Off-Road Vehicle use, prevent Motor Vehicle and/or Off-Road Vehicle trespassing, parking, and/or access, by installing barriers, curbs, fences, gates, posts, signs, shrubs, trees, or other effective traffic Control Measures. A stable surface area shall be established and maintained by using one of the Control Measures set forth in Subsections 90.2.1.1(b) or (c) or by the effective application of water in compliance with the stabilization standards set forth in Subsection 90.2.1.2. Where measures to prevent vehicular trespassing and movement are not effective, the application of water will not be utilized for surface stabilization. For the purposes of this subsection, use of or parking on Open Areas and Vacant Lots for noncommercial and non-institutional purposes by the Owner and/or Operator of such Open Areas and Vacant Lots shall not be considered vehicle use under this subsection. In addition, vehicle use related to landscaping maintenance shall not be considered vehicle use under this subsection. For the purpose of this regulation, landscape maintenance does not include grading, trenching, or any other mechanized surface disturbing activities performed to establish initial landscapes or to redesign existing landscapes; or
- (b) Where a Disturbed Surface Area exists (including disturbed surfaces caused by Motor Vehicles), uniformly apply and maintain surface gravel or Dust Palliatives to all areas disturbed by Motor Vehicles in compliance with one of the stabilization standards described in Subsection 90.2.1.2 of this regulation; or
- (c) Where a Disturbed Surface Area exists (including disturbed surfaces caused by motor vehicles and/or Off-Road motor Vehicles), apply and maintain an alternative control measure approved in writing by the Control Officer and the Region IX Administrator of the Environmental Protection Agency (EPA).

90.2.1.2 Stabilization Standards:

- (a) A visible crust shall be established, as determined by Subsection 90.4.1.1 (The Drop Ball/Steel Ball Test) of these Regulations; or,
- (b) A percent cover that is equal to or greater than 20% for non-erodible elements shall be established, as determined by Subsection 90.4.1.2 (Rock Test Method) of these Regulations; or,
 - (c) A threshold friction velocity, corrected for non-erodible elements of 100 cm/second or higher, shall be established, as determined by

Subsection 90.4.1.3 (Determination of Threshold Friction Velocity) of this regulation; or,

- (d) An alternative test method approved in writing by the Control Officer and the Region IX Administrator of the EPA.
- 90.2.2 **Dust Mitigation Plans Required:** Any Owner and/or Operator of Open Areas and Vacant Lots having a cumulative area of 10,000 acres or greater must submit a dust mitigation plan to the department for approval by March 31, 2003, in a format prescribed by the Control Officer.
- 90.2.3 **Mechanized Weed Abatement and/or Trash Removal:** If machinery is used to clear weeds and/or trash from Open Areas and Vacant Lots of 5,000 square feet or larger, then the following control measures set forth in Subsection 90.2.3.1 shall be applied. **Advisory Notice:** In order to conserve water to the greatest extent practicable, the use of reclaimed water is highly encouraged.

90.2.3.1 Control Measures

- (a) Pre-wet surface soils before mechanized weed abatement and/or trash removal occurs; and,
- (b) Maintain dust control measures while mechanized weed abatement and/or trash removal is occurring; and,
- (c) Pave, apply gravel, apply water, or apply a suitable Dust Palliative, in compliance with the stabilization standards set forth in Subsection 90.2.1.2 of this regulation, after mechanized weed abatement and/or trash removal occurs.

90.3 **Record Keeping Requirements**

- 90.3.1 **Record Keeping:** Any Person subject to the requirements of this regulation shall compile and retain records that provide evidence of Control Measure application, by indicating type of treatment or Control Measure, extent of coverage, and date applied. The records and supporting documentation shall be made available to the Control Officer within 24 hours of a written request.
- 90.3.2 **Record Retention:** Copies of the records required by Subsection 90.3.1 (Record Keeping Requirements) of this regulation shall be retained for at least one year.

90.4 Test Methods

- 90.4.1 **Stabilization Standards for Open Areas and Vacant Lots**: The test methods described in Subsections 90.4.1.1 through Subsections 90.4.1.3 of this regulation shall be used to determine whether an Open Area or a Vacant Lot has a stabilized surface. Should a disturbed Open Area or Vacant Lot contain more than one type of disturbance, soil, or other characteristics which are visibly distinguishable, each representative surface must be tested separately for stability in an area that represents a random portion of the overall disturbed conditions of the site, utilizing the appropriate test methods in Subsections 90.4.1.1 through Subsections 90.4.1.3 of this regulation. Depending upon test method results, include or eliminate each representative surface from the total size assessment of the Disturbed Surface Area(s).
- 90.4.1.1 Soil Crust Determination (The Drop Ball Test): Drop a steel ball with a diameter of 15.9 millimeters (0.625 inches) and a mass ranging from 16-17 grams from a distance of 30 centimeters (one foot) directly above the soil surface. If blowsand is present, clear the blowsand from the surfaces on which the soil crust test method is conducted. Blowsand is defined as thin deposits of loose uncombined grains covering less than 50% of an Open Area or Vacant Lot which have not originated from the representative Open Area or Vacant Lot surface being tested. If material covers a visible crust, which is not blowsand, apply the test method in Subsection 90.4.1.3 (Determination of Threshold Friction Velocity) of this regulation to the loose material determine whether the surface is stabilized. to
 - (a) A sufficient crust is defined under the following conditions: once a ball has been dropped according to Subsection 90.4.1.1 of this regulation, the ball does not sink into the surface, so that it is partially or fully surrounded by loose grains and, upon removal of the ball, the surface upon which it fell has not been pulverized, so that loose grains are visible.
 - (b) Randomly select each representative Disturbed Surface Area for the drop ball test by using a blind "over the shoulder" toss of a throwable object (for example, a metal weight with survey tape attached). Using the point of fall as the lower left hand corner, measure a 1-foot square area. Drop the ball three times within the 1-foot by 1-foot square survey area, using a consistent pattern across the survey area. The survey area shall be considered to have passed the Soil Crust Determination Test if at least two of the three times the ball was dropped, the results met the criteria in Subsection 90.4.1.1(a) of this regulation. Select at least two other survey areas that represent a random portion of the overall disturbed conditions of the site, and repeat this procedure. If the results meet the criteria of Subsection 90.4.1.1(a) of this regulation for all of the survey areas tested, then

the site shall be considered to have passed the Soil Crust Determination Test and shall be considered sufficiently crusted.

- (c) At any given site, the existence of a sufficient crust covering one portion of the site may not represent the existence or protectiveness of a crust on another portion of the site. Repeat the soil crust test as often as necessary on each portion of the overall conditions of the site using the random selection method set forth in Subsection 90.4.1.1(b) of this regulation for an accurate assessment.
- 90.4.1.2 **Rock Test Method:** The Rock Test Method, which is similar to Subsection 90.4.1.3 (Determination of Threshold Friction Velocity) of this Regulation, examines the wind-resistance effects of rocks and other non-erodible elements on disturbed surfaces. Non-erodible elements are objects larger than 1 centimeter (cm) in diameter that remain firmly in place even on windy days. Typically, non-erodible elements include rocks, stones, glass fragments, and hardpacked clumps of soil lying on or embedded in the surface. Vegetation does not count as a non-erodible element in this method. The purpose of this test method is to estimate the percent cover of non-erodible elements on a given surface to see whether such elements take up enough space to offer protection against windblown dust. For simplification, the following test method refers to all non-erodible elements as "rocks."
 - (a) Randomly select a 1 meter by 1 meter survey area within an area that represents the general rock distribution on the surface (a 1 meter by 1 meter area is slightly greater than a 3 foot by 3 foot area). Use a blind "over the shoulder" toss of a throwable object (for example, a metal weight with survey tape attached) to select the survey surface and using the point of fall as the lower left hand corner, measure a 1 meter by 1 meter survey area. Mark-off the survey area by tracing a straight, visible line in the dirt along the edge of a measuring tape or by placing short ropes, yard sticks, or other straight objects in a square around the survey area.

(b) Without moving any of the rocks or other elements, examine the survey area. Since rocks greater than 3/8 inch (1 cm) in diameter are of interest, measure the diameter of some of the smaller rocks to a get a sense of which rocks need to be considered.

(c) Mentally group the rocks greater than 3/8 inch (1cm) diameter lying in the survey area into small, medium, and large size categories. If the rocks are all approximately the same size, simply select a rock of average size and typical shape. Without removing any of the rocks from the ground, count the number of rocks in the survey area in each group and write down the resulting number.

- (d) Without removing rocks, select one or two average-size rocks in each group and measure the length and width. Use either metric units or standard units. Using a calculator, multiply the length times the width of the rocks to get the average dimensions of the rocks in each group. Write down the results for each rock group.
- (e) For each rock group, multiply the average dimensions (length times width) by the number of rocks counted in the group. Add the results from each rock group to get the total rock area within the survey area.
- (f) Divide the total rock area, calculated in Subsection 90.4.1.2(e) of this regulation, by two (to get frontal area). Divide the resulting number by the size of the survey area (make sure the units of measurement match), and multiply by 100 for percent rock cover. For example, the total rock area is 1,400 square centimeters, divide 1,400 by 2 to get 700. Divide 700 by 10,000 (the survey area is 1 meter by 1 meter, which is 100 centimeters by 100 centimeters or 10,000 centimeters) and multiply by 100. The result is 7% rock cover. If rock measurements are made in inches, convert the survey area from meters to inches (1 inch = 2.54 centimeters).
- (g) Select and mark-off two additional survey areas and repeat the procedures described in Subsection 90.4.1.2(a) through Subsection 90.4.1.2(f) of this regulation. Make sure the additional survey areas also represent the general rock distribution on the site. Average the percent cover results from all three survey areas to estimate the average percent of rock cover.

(h) If the average rock cover is greater than or equal to 20%, the surface is stable. If the average rock cover is less than 20%, follow the procedures in Subsection 90.4.1.2(i) of this regulation.

(i) If the average rock cover is less than 20%, the surface may or may not be stable. Follow the procedures in Subsection 90.4.1.3 (Determination of Threshold Friction Velocity) of this regulation and use the results from the rock test method as a correction (i.e., multiplication) factor. If the rock cover is at least 1%, such rock cover helps to limit windblown dust. However, depending on the soil's ability to release fine dust particles into the air, the percent rock cover may or may not be sufficient enough to stabilize the surface. It is also possible that the soil itself has a high enough Threshold Friction Velocity (TFV) to be stable without accounting for rock cover.

(j) After completing the procedures described in Subsection 90.4.1.2(i) of this regulation, use Table 2 of this regulation to identify the appropriate correction

factor to the TFV, depending on the percent rock cover. Multiply the correction factor by the TFV value for a final TFV estimate that is corrected for non-erodible elements.

- 90.4.1.3 **Determination Of Threshold Friction Velocity (TFV):** For Disturbed Surface Areas that are not crusted or vegetated, determine TFV according to the following sieving field procedure (based on a 1952 laboratory procedure published by W. S. Chepil).
 - (a) Obtain and stack a set of sieves with the following openings: 4 millimeters (mm), 2 mm, 1 mm, 0.5 mm, and 0.25 mm, or obtain and stack a set of standard/commonly available sieves. Place the sieves in order according to size openings, beginning with the largest size opening at the top. Place a collector pan underneath the bottom (0.25 mm) sieve. Collect a sample of loose surface material from an area at least 30 cm by 30 cm in size, to a depth of approximately 1 cm using a brush and dustpan or other similar device. Only collect soil samples from dry surfaces (i.e., when the surface is not damp to the touch). Remove any rocks larger than 1 cm in diameter from the sample. Pour the sample into the top sieve (4 mm opening) and cover the sieve/collector pan unit with a lid. Minimize escape of particles into the air when transferring surface soil into the sieve/collector pan unit. Move the covered sieve/collector pan unit by hand using a broad, circular arm motion in the horizontal plane. Complete twenty circular arm movements, ten clockwise and ten counterclockwise, at a speed just necessary to achieve some relative horizontal motion between the sieves and the particles. Remove the lid from the sieve/collector pan unit and disassemble each sieve separately, beginning with the largest sieve. As each sieve is removed, examine it for loose particles. If loose particles have not been sifted to the finest sieve through which they can pass, reassemble and cover the sieve/collector pan unit and gently rotate it an additional ten times. After disassembling the sieve/collector pan unit, slightly tilt and gently tap each sieve, and the collector pan, so that material aligns along one side. In doing so, minimize escape of particles into the air. Line up the sieves and collector pan in a row and visibly inspect the relative quantities of catch in order to determine which sieve (or whether the collector pan) contains the greatest volume of material. If a visual determination of relative volumes of catch among sieves is difficult, use a graduated cylinder to measure the volume. Estimate TFV for the sieve catch with the greatest volume using Table 1 of this Subsection, which provides a correlation between sieve opening size and TFV.

Table 1. Determination of Threshold Friction Velocity

Tyler Sieve No.	ASTM 11 Sieve No.	Opening (mm)	TFV (cm/s)
5	5	4	135
9	10	2	100
16	18	1	76
32	35	0.5	58
60	60	0.25	43
Collector Pan		—	30

- (b) Collect at least three soil samples which represent random portions of the overall conditions of the site, repeat the above TFV test method for each sample and average the resulting TFVs together to determine the TFV uncorrected for non-erodible elements. Nonerodible elements are distinct elements, in the random portion of the overall conditions of the site, that are larger than 1 cm in diameter, remain firmly in place during a wind episode, and inhibit soil loss by consuming part of the shear stress of the wind. Non-erodible elements include stones and bulk surface material but do not include flat or standing vegetation. For surfaces with non-erodible elements, determine corrections to the TFV by identifying the fraction of the survey area, as viewed from directly overhead, that is occupied by non-erodible elements using the following procedure. For a more detailed description of this procedure, see Subsection 90.4.1.2 (Rock Test Method) of this regulation. Select a survey area of 1 meter by 1 meter that represents a random portion of the overall conditions of the site. Where many non-erodible elements lie within the survey area, separate the non-erodible elements into groups according to size. For each group, calculate the overhead area for the nonerodible elements according to the following equations:
- Eq. 1: (Average length) x (Average width) = Average Dimensions.
- Eq. 2: (Average Dimensions) x (Number of Elements) = Overhead Area.
- Eq. 3: Overhead Area of Group 1 + Overhead Area of Group 2 (etc.) = Total Overhead Area.
- Eq. 4: Total Overhead Area/2 = Total Frontal Area.
- Eq. 5: (Total Frontal Area/Survey Area) x 100 = Percent Cover Of Non-Erodible Elements.
- Note: Ensure consistent units of measurement (e.g. square meters or square inches when calculating percent cover).

Repeat this procedure on an additional two distinct survey areas that represent a random portion of the overall conditions of the site and average the results. Use Table 2 of this Subsection to identify the correction factor for the percent cover of non-erodible elements. Multiply the TFV by the corresponding correction factor to calculate the TFV corrected for non-erodible elements.

Table 2. Correction Factors for Threshold Friction Velocity

Percent Cover of Non-Erodible Elements	Correction Factor
Greater than or equal to 10% Greater than or equal to 5% and less than 10 Less than 5% and greater than or equal to 1% Less than 1%	

History: Initial adoption: June 22, 2000 Amended: November 16, 2000; November 20, 2001; December 17, 2002; June 3, 2003; July 1, 2004; April 15, 2014; January 21, 2020. THIS PAGE INTENTIONALLY LEFT BLANK

SECTION 91: FUGITIVE DUST FROM UNPAVED ROADS, UNPAVED ALLEYS, AND UNPAVED EASEMENT ROADS

91.1 FUGITIVE DUST From Unpaved Roads, Unpaved Alleys, and Unpaved EASEMENT Roads

- 91.1.1 **Purpose:** To limit the Emission of PARTICULATE MATTER into the AMBIENT AIR from unpaved roads, unpaved alleys, unpaved ROAD EASEMENTS and unpaved access roads for utilities and railroads.
- 91.1.2 **Applicability:** The provisions of this Regulation shall apply to unpaved roads, which includes unpaved alleys, unpaved ROAD EASEMENTS and unpaved access roads for utilities and railroads which are located in a-PM10 nonattainment area, an area subject to a PM₁₀ maintenance plan defined under 42 U.S. Code § 7505a, or the Apex Valley (hydrographic areas 216 and 217). Nothing in Subsections 91.1 through 91.3 of these Regulations shall be construed to prevent enforcement of Section 40 (Prohibition of NUISANCE Conditions) of these Regulations. The provisions of this Regulation shall not apply to non-commercial and non-institutional private driveways and shall not apply to horse trails, hiking paths, bicycle paths, or other similar paths that have been officially designated by a governing body for exclusive use for purposes other than travel by motor vehicles. The provisions of this Regulation shall not apply to STATIONARY SOURCES as defined in Section 0, except that these control measures shall be considered as part of a BACT determination.

91.1.3 Effective Date Of This Regulation:

- 91.1.3.1 Regulations 91.1 through 91.3 shall be effective in hydrographic area 212 on their adoption by the District Board of Health of Clark County on June 22, 2000.
- 91.1.3.2 Regulations 91.1 through 91.3 shall be effective in hydrographic areas 216 and 217 on April 1, 2002.

91.2 **Requirements:**

91.2.1 **Unpaved Roads:** An OWNER AND/OR OPERATOR of an unpaved road in a PM10 nonattainment area, an area subject to a PM₁₀ maintenance plan defined under 42 U.S. Code § 7505a, or the Apex Valley (hydrographic areas 216 and 217) shall implement one of the CONTROL MEASURES set forth in Subsection 91.2.1.3 of this Regulation, except as set forth in Subsection 91.2.1.1 of this Regulation. For the purpose of this Regulation, the CONTROL MEASURES shall be considered effectively implemented when the unpaved roadway complies with the stabilization standards set forth in Subsection 91.2.1.4 of this Regulation. Advisory Notice: In order to

conserve water to the greatest extent practicable, the use of RECLAIMED WATER is highly encouraged.

91.2.1.1 Implementation Of CONTROL MEASURES For Existing Unpaved Roads:

- 91.2.1.1.1 OWNERS AND/OR OPERATORS of existing unpaved roads that were constructed prior to June 22, 2000 in hydrographic area 212 shall implement one of the CONTROL MEASURES set forth Subsection 91.2.1.3 of this Regulation according to the following schedule:
 - (a) CONTROL MEASURES shall be implemented for one third (1/3) of the total miles of unpaved roads having vehicular traffic of 150 vehicles or more per day in accordance with Subsection 91.2.1.3 (CONTROL MEASURES) of this Regulation by June 1, 2001.
 - (b) CONTROL MEASURES shall be implemented for two thirds (2/3) of the total miles of unpaved roads having vehicular traffic of 150 vehicles or more per day in accordance with Subsection 91.2.1.3 (CONTROL MEASURES) of this Regulation by June 1, 2002.
 - (c) CONTROL MEASURES shall be implemented for all unpaved roads having vehicular traffic of 150 vehicles or more per day in accordance with Subsection 91.2.1.3 (CONTROL MEASURES) of this Regulation by June 1, 2003.
 - (d) CONTROL MEASURES set forth in Subsection 91.2.1.3 shall be implemented for existing unpaved roads on which vehicular traffic is equal to or greater than 150 vehicles per day that develops after June 1, 2003. CONTROL MEASURES shall be implemented within 365 calendar days following the initial discovery that vehicular traffic equals or exceeds 150 vehicles per day and that the road surface does not comply with the stabilization standards set forth in Subsection 91.2.1.4 of this Regulation. The CONTROL OFFICER may require short-term stabilization of any unpaved road subject to Subsection 91.2.1.1(d).
 - CONTROL MEASURES (e) Non-federal Requirement: set forth in Subsection 91.2.1.3 shall be implemented for existing unpaved roads having vehicular traffic of less than 150 vehicles per day within 365 calendar days following the initial discovery that the road surface does not comply with the stabilization standards set forth in Section 91.2.1.4 of this Regulation. The requirements of this Subsection (91.2.1.1 (e) shall not constitute applicable State Implementation Plan requirements pursuant to Section 189 of the federal Clean Air Act. The CONTROL OFFICER may require shortterm stabilization of any unpaved road subject to Subsection 91.2.1.1 (e)). For the purpose of this Subsection, the CONTROL

MEASURES shall be considered effectively implemented when the unpaved road complies with the stabilization standards set forth in Subsection 91.2.1.4 of this Regulation.

- 91.2.1.1.2 OWNERS AND/OR OPERATORS of existing unpaved roads that were constructed prior to April 1, 2002 in hydrographic areas 216 and 217_shall implement one of the CONTROL MEASURES set forth Subsection 91.2.1.3 of this Regulation according to the following schedule:
 - (a) CONTROL MEASURES shall be implemented for one third (1/3) of the total miles of unpaved roads having vehicular traffic of 150 vehicles or more per day in accordance with Subsection 91.2.1.3 (CONTROL MEASURES) of this Regulation by April 1, 2003.
 - (b) CONTROL MEASURES shall be implemented for two thirds (2/3) of the total miles of unpaved roads having vehicular traffic of 150 vehicles or more per day in accordance with Subsection 91.2.1.3 (CONTROL MEASURES) of this Regulation by April 1, 2004.
 - (c) CONTROL MEASURES shall be implemented for all unpaved roads having vehicular traffic of 150 vehicles or more per day in accordance with Subsection 91.2.1.3 (CONTROL MEASURES) of this Regulation by April 1, 2005.
 - (d) CONTROL MEASURES set forth in Subsection 91.2.1.3 shall be implemented for existing unpaved roads on which vehicular traffic is equal to or greater than 150 vehicles per day that develops after April 1, 2005. CONTROL MEASURES shall be implemented within 365 calendar days following the initial discovery that vehicular traffic equals or exceeds 150 vehicles per day and that the road surface does not comply with the stabilization standards set forth in Subsection 91.2.1.4 of this Regulation. The CONTROL OFFICER may require short-term stabilization of any unpaved road subject to Subsection 91.2.1.1(d).
 - (e) Non-federal Requirement: CONTROL MEASURES set forth in Subsection 91.2.1.3 shall be implemented for existing unpaved roads having vehicular traffic of less than 150 vehicles per day within 365 calendar days following the initial discovery that the road surface does not comply with the stabilization standards set forth in Section 91.2.1.4 of this Regulation. The requirements of this Subsection (91.2.1.1 (e) shall not constitute applicable State Implementation Plan requirements pursuant to Section 189 of the federal Clean Air Act. The CONTROL OFFICER may require shortterm stabilization of any unpaved road subject to Subsection 91.2.1.1 (e)). For the purpose of this Subsection, the CONTROL MEASURES shall be considered effectively implemented when the

unpaved road complies with the stabilization standards set forth in Subsection 91.2.1.4 of this Regulation.

91.2.1.2 No unpaved roads or alleys may be constructed in public thoroughfares in hydrographic area 212 after June 22, 2000, or in hydrographic areas 216 and 217 after April 1, 2002, unless the unpaved road is an interim component of an active paving project.

91.2.1.3 **CONTROL MEASURES:**

- (a) PAVE, or
- (b) Apply DUST PALLIATIVES, in compliance with the stabilization standards set forth in Subsection 91.2.1.4 of this Regulation, or
- (c) Apply and maintain and alternative CONTROL MEASURE approved in writing by the CONTROL OFFICER and the Region IX Administrator of the EPA.
- 91.2.1.4 **Stabilization Standards:** For the purpose of this rule, CONTROL MEASURES shall be considered effectively implemented when stabilization observations for FUGITIVE Dust EMISSIONS from unpaved roads and unpaved alleys do not exceed 20% OPACITY and do not equal or exceed 0.33 oz/ft² silt loading, or do not exceed 6% silt content, as determined by Subsection 91.4.1 of these Regulations.

91.3 **Record Keeping Requirements**

- 91.3.1 **Record Keeping:** Any person subject to the requirements of this Regulation shall compile and retain records that provide evidence of CONTROL MEASURE application, by indicating type of treatment or CONTROL MEASURE, extent of coverage, and date applied. The records and supporting documentation shall be made available to the CONTROL OFFICER within 24 hours from written or verbal request.
- 91.3.2 **Records Retention:** Copies of the records required by Subsection 91.3.1 (Record Keeping Requirements) of this Regulation shall be retained for at least one year.
- 91.3.3 **Reports Required:** In addition to complying with the record keeping requirements specified in Subsection 91.3.1, OWNERS of unpaved roads shall be subject to the requirements set forth in Subsection 91.2.1.1, and shall prepare and submit a written report to the CONTROL OFFICER documenting compliance with the provisions of Subsection 91.2.1.1. This report shall be prepared for the years 2001, 2002, and 2003 for OWNERS of unpaved roads in hydrographic areas 212, for the years 2003, 2004, and 2005 for OWNERS of unpaved roads in hydrographic areas 216 and

217, and shall be submitted to the CONTROL OFFICER no later than October first of each year and shall include:

91.3.3.1 The total miles of unpaved roads under the jurisdiction of the OWNER and the miles PAVED during the reporting period subject to the requirements of Subsection 91.2.1.1. Miles of PAVING for roads subject to Subsections 91.2.1.1.1(a), 91.2.1.1.1(b), and 91.2.1.1.1(c) must be listed separately from paving of roads found to be subject Subsection 91.2.1.1.1 (d). Miles of PAVING for roads subject to Subsections 91.2.1.1.2(a), 91.2.1.1.2(b), and 91.2.1.1.2(c) must be listed separately from paving of roads found to a subject to Subsections 91.2.1.1.2(b), and 91.2.1.1.2(c) must be listed separately from paving of roads found to be subject Subsection 91.2.1.1.2(b), and 91.2.1.1.2(c) must be listed separately from paving of roads found to be subject Subsection 91.2.1.1.2(b), and 91.2.1.1.2(c) must be listed separately from paving of roads found to be subject Subsection 91.2.1.1.2(d).

91.4 Test Methods

91.4.1 Stabilization Test Methods For Unpaved Roads And Unpaved Alleys:

- 91.4.1.1 **OPACITY Test Method**: The purpose of this test method is to estimate the percent OPACITY of FUGITIVE DUST plumes caused by vehicle movement on unpaved roads, unpaved alleys, and unpaved EASEMENTS. This method can only be conducted by an individual who has received certification as a qualified Visible EMISSIONS Evaluator.
 - (a) Step 1: Stand at least 16.5 feet from the FUGITIVE DUST source in order to provide a clear view of the EMISSIONS with the sun oriented in the 140-degree sector to the back. Following the above requirements, make OPACITY observations so that the line of vision is approximately perpendicular to the dust plume and wind direction. If multiple plumes are involved, do not include more than one plume in the line of sight at one time.
 - (b) Step 2: Record the FUGITIVE DUST source location, source type, method of control used, if any, observer's name, certification data and affiliation, and a sketch of the observer's position relative to the FUGITIVE DUST source. Also, record the time, estimated distance to the FUGITIVE DUST source location, approximate wind direction, estimated wind speed, description of the sky condition (presence and color of clouds), observer's position to the FUGITIVE DUST source, and color of the plume and type of background on the visible emission observation form both when OPACITY readings are initiated and completed.
 - (c) Step 3: Make OPACITY observations, to the extent possible, using a contrasting background that is perpendicular to the line of vision. Make OPACITY observations approximately 1 meter above the surface from which the plume is generated. Note that the observation is to be made at only one visual point upon generation of a plume, as opposed to visually tracking the entire length of a

dust plume as it is created along a surface. Make two observations per vehicle, beginning with the first reading at zero seconds and the second reading at five seconds. The zero-second observation should begin immediately after a plume has been created above the surface involved. Do not look continuously at the plume but, instead, observe the plume briefly at zero seconds and then again at five seconds.

- (d) Step 4: Record the OPACITY observations to the nearest 5% on an observational record sheet. Each momentary observation recorded represents the average OPACITY of EMISSIONS for a 5-second period. While it is not required by the test method, EPA recommends that the observer estimate the size of vehicles which generate dust plumes for which readings are taken (e.g. mid-size passenger car or heavy-duty truck) and the approximate speeds the vehicles are traveling when readings are taken.
- (e) Step 5: Repeat Step 3 (Subsection 91.4.1.1(c) of this Regulation) and Step 4 (Subsection 91.4.1.1 (d) of this Regulation) until you have recorded a total of 12 consecutive OPACITY readings. This will occur once six vehicles have driven on the source in your line of observation for which you are able to take proper readings. The 12 consecutive readings must be taken within the same period of observation but must not exceed 1 hour. Observations immediately preceding and following interrupted observations can be considered consecutive.
- (f) Step 6: Average the 12 OPACITY readings together. If the average OPACITY reading equals 20% or lower, the source is in compliance with the OPACITY standard described in Section 91 of these Regulations.
- 91.4.1.2 **Silt Content Test Method:** The purpose of this test method is to estimate the silt content of the trafficked parts of unpaved roads, unpaved alleys, and unpaved EASEMENTS. The higher the silt content, the greater the amount of fine dust particles that are entrained into the atmosphere when cars and trucks drive on unpaved roads, unpaved alleys, and unpaved EASEMENTS.
 - (a) Equipment:
 - (1) A set of sieves with the following openings: 4 millimeters (mm), 2 mm, 1 mm, 0.5 mm and 0.25 mm, a lid, and collector pan
 - (2) A small whiskbroom or paintbrush with stiff bristles and dustpan 1 foot in width (the broom/brush should preferably

have one, thin row of bristles no longer than 1.5 inches in length)

- (3) A spatula without holes
- (4) A small scale with half ounce increments (e.g., postal/ package scale)
- (5) A shallow, lightweight container (e.g., plastic storage container)
- (6) A sturdy cardboard box or other rigid object with a level surface
- (7) A calculator
- (8) Cloth gloves (optional for handling metal sieves on hot, sunny days)
- (9) Sealable plastic bags (if sending samples to a laboratory)
- (10) A pencil/pen and paper
- (b) Step 1: Look for a routinely traveled surface, as evidenced by tire tracks (only collect samples from surfaces that are not damp due to precipitation or dew). This statement is not meant to be a standard in itself for dampness where watering is being used as a CONTROL MEASURE. It is only intended to ensure that surface testing is done in a representative manner. Use caution when taking samples to ensure personal safety with respect to passing vehicles. Gently press the edge of a dustpan (1 foot in width) into the surface four times to mark an area that is 1 square foot. Collect a sample of loose surface material using a whiskbroom or brush and slowly sweep the material into the dustpan, minimizing escape of dust particles. Use a spatula to lift heavier elements such as gravel. Only collect dirt/gravel to an approximate depth of 3/8 inch or 1 cm in the 1 square foot area. If you reach a hard, underlying subsurface that is greater than 3/8 inch in depth, do not continue collecting the sample by digging into the hard surface. In other words, you are only collecting a surface sample of loose material down to 1 cm. In order to confirm that samples are collected to 1 cm in depth, a wooden dowel or other similar narrow object at least one foot in length can be laid horizontally across the survey area while a metric ruler is held perpendicular to the dowel.
 - At this point, you can choose to place the sample collected into a plastic bag or container and take it to an independent

laboratory for silt content analysis. A reference to the procedure the laboratory is required to follow is at the end of this section.

- (c) Step 2: Place a scale on a level surface. Place a lightweight container on the scale. Zero the scale with the weight of the empty container on it. Transfer the entire sample collected in the dustpan to the container, minimizing escape of dust particles. Weigh the sample and record its weight.
- (d) Step 3: Stack a set of sieves in order according to the size openings specified above, beginning with the largest size opening (4 mm) at the top. Place a collector pan underneath the bottom (0.25 mm) sieve.
- (e) Step 4: Carefully pour the sample into the sieve stack, minimizing escape of dust particles by slowly brushing material into the stack with a whiskbroom or brush (on windy days, use the trunk or door of a car as a wind barricade). Cover the stack with a lid. Lift up the sieve stack and shake it vigorously up, down and sideways for at least 1 minute.
- (f) Step 5: Remove the lid from the stack and disassemble each sieve separately, beginning with the top sieve. As you remove each sieve, examine it to make sure that all of the material has been sifted to the finest sieve through which it can pass; e.g. material in each sieve (besides the top sieve that captures a range of larger elements) should look the same size. If this is not the case, re-stack the sieves and collector pan, cover the stack with the lid, and shake it again for at least 1 minute (you only need to reassemble the sieve(s) that contain material, which requires further sifting).
- (g) Step 6: After disassembling the sieves and collector pan, slowly sweep the material from the collector pan into the empty container originally used to collect and weigh the entire sample. Take care to minimize escape of dust particles. You do not need to do anything with material captured in the sieves; only the collector pan. Weigh the container with the material from the collector pan and record its weight.
- (h) Step 7: If the source is an unpaved road, multiply the resulting weight by 0.38. If the source is an UNPAVED PARKING LOT, multiply the resulting weight by 0.55. The resulting number is the estimated silt loading. Then, divide by the total weight of the sample you recorded earlier in Step 2 (Subsection 91.4.1.2(c) of this Regulation) and multiply by 100 to estimate the percent silt content.

- (i) Step 8: Select another two routinely traveled portions of the unpaved road or UNPAVED PARKING LOT and repeat this test method. Once you have calculated the silt loading and percent silt content of the 3 samples collected, average your results together.
- (j) Step 9: Examine Results. If the average silt loading is less than 0.33 oz/ft², the surface is stable. If the average silt loading is greater than or equal to 0.33 oz/ft², then proceed to examine the average percent silt content. If the source is an unpaved road, unpaved alley, or unpaved EASEMENT and the average percent silt content is 6% or less, the surface is stable. If your field test results are within 2% of the standard (for example, 4%-8% silt content on an unpaved road, alley, or EASEMENT), it is recommended that you collect 3 additional samples from the source according to Step 1 (Subsection 91.4.1.2(b) of this Regulation) and take them to an independent laboratory for silt content analysis.
- (k) Independent Laboratory Analysis: You may choose to collect 3 samples from the source, according to Step 1 (Subsection 91.4.1.2(b) of this Regulation), and send them to an independent laboratory for silt content analysis rather than conduct the sieve field procedure. If so, the test method the laboratory is required to use is:

"Procedures For Laboratory Analysis Of Surface/Bulk Loading Samples", (Fifth Edition, Volume I, Appendix C.2.3 "Silt Analysis", 1995), AP-42, Office of Air Quality Planning & Standards, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina

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SECTION 92: FUGITIVE DUST FROM UNPAVED PARKING LOTS AND STORAGE AREAS

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92.1 Fugitive Dust from Unpaved Parking Lots and Storage Areas

92.1.1 Purpose

The purpose of this section is to limit the emission of particulate matter into the ambient air from unpaved parking lots, including storage areas as defined in Section 0.

92.1.2 Applicability

The provisions of this regulation shall apply to unpaved parking lots and storage areas which are located in a PM₁₀ nonattainment area, an area subject to a PM₁₀ maintenance plan defined under 42 U.S. Code § 7505a, or in the Apex Valley (hydrographic areas 216 and 217), and which are not regulated by Section 94. Unpaved parking lots and storage areas include automobile impound yards, wrecking yards, automobile dismantling yards, salvage yards, material handling yards, equestrian staging facilities, and storage yards. For the purposes of this regulation, maneuvering shall not include military maneuvers or exercises conducted on federal facilities. Nothing in Sections 92.1 through 92.6 shall be construed to prevent enforcement of Section 40 ("Prohibition of Nuisance Conditions"). The provisions of this regulation shall not apply to stationary sources as defined in Section 0, except that these control measures shall be considered as part of a BACT determination.

92.2 Definitions

- (a) The following term has the meanings set forth below for the purposes of Section 92. Any term not defined in these paragraphs shall have the meaning given in Section 0 or the Clean Air Act.
- (b) "Equestrian staging area" means the area(s) used exclusively to load, unload, and saddle horses; organize riders before a ride; and park vehicles used to transport horses.

92.3 Requirements

92.3.1 The owner and/or operator of an existing unpaved parking lot or storage area in a PM₁₀ nonattainment area, an area subject to a PM₁₀ maintenance plan defined under 42 U.S. Code § 7505a, or in the Apex Valley (hydrographic areas 216 and 217) shall implement one or more of the control measures described in Section 92.3.1.2 as necessary to comply with the stabilization standards of Section 92.4.1. For unpaved parking lots and storage areas that are utilized intermittently, for a period of 35 days or less during the calendar year, the owner and/or operator shall implement one or more of the control measures described in Section 92.3.1.2 during the period that the unpaved parking lot or storage area is

utilized for vehicle parking or storage. For the purpose of this regulation, the control measures set forth in Section 92.3.1.2 shall be considered effectively implemented when the unpaved parking lot or storage area meets the stabilization standards described in Section 92.4.1.

92.3.1.1 New Unpaved Parking Lots or Storage Areas

No unpaved parking lots or storage areas may be constructed in hydrographic areas 212, 216, or 217 as of January 1, 2003; or in any other hydrographic area upon it being designated as nonattainment for PM_{10} ; or in any other hydrographic area upon it being subject to a PM_{10} maintenance plan defined under 42 U.S. Code § 7505a except as provided in this section.

- (a) **Exemptions.** The requirements of this Section shall not be applicable to parking lots for rural public facilities, such as trailheads, campgrounds, and similar facilities where paved parking lots would conflict with the rural nature of these facilities, provided such unpaved parking lot is stabilized in accordance with Sections 92. 3.1.2(b) through (d) prior to being used. For the purposes of this Section, a rural public facility shall not include any facility located within the BLM Disposal Boundary.
- (b) **Material Storage and Handling Areas.** If an area is used for storing and handling of landscaping, aggregate, and other similar bulk materials, the owner and/or operator shall implement one or more of the control measures described in Section 92.3.1.2, subject to the approval of the Control Officer, provided, however, that all access, parking, and loading areas used by on-road vehicles shall be paved.
- (c) **Tracked, Non-Rubber Tired Vehicle, or Heavy Equipment Storage Areas.** If an area is used primarily for storage of nonrubber tired vehicles or equipment that the control officer has determined to be of such weight as to damage or destroy pavement (e.g., heavy equipment), the owner and/or operator shall implement one or more of the control measures described in Section 92.3.1.2, subject to the approval of the Control Officer, provided, however, that all access, parking, and loading areas primarily used by rubber-tired vehicles shall be paved.
- (d) **Equestrian Staging Areas:** Areas designed and used exclusively for the loading, unloading, and saddling of horses for equestrian activities shall be exempt from the paving requirements of this section if control measures applied to the designated areas meet the performance standards of Section 92.4. Posted vehicle speed

limits for vehicles using such designated areas shall not exceed 10 miles per hour.

92.3.1.2 Control Measures

- (a) Pave;
- (b) Apply dust palliatives, in compliance with the stabilization standards set forth in Section 92. 4.1;
- (c) Apply dust palliatives to vehicle travel lanes within the parking lot or storage area in compliance with the stabilization standards set forth in Section 92.4.1, and uniformly apply and maintain surface gravel or recycled asphalt to a depth of two inches on the vehicle parking areas;
- (d) Apply and maintain an alternative control measure approved in writing by the Control Officer and the EPA Region 9 Administrator.

92.4 Performance Standards

92.4.1 Stabilization Standards

For the purpose of this regulation, control measures shall be considered effectively implemented when stabilization observations for fugitive dust emissions from unpaved parking lots or storage areas do not exceed 20 percent opacity and do not equal or exceed 0.33 oz/ft² silt loading, or do not exceed 8 percent silt content, as determined by Section 92.6 ("Test Methods"), except in areas on which gravel has been applied under the provisions of Section 92.3.1.2(c).

92.4.2 Prohibition of Dust Over Property Line

Where Best Available Control Measures provided for in this regulation have not been applied, no owner and/or operator of an unpaved parking lot or storage area shall permit a dust plume from that unpaved parking lot or storage area to cross a property line.

92.5 Recordkeeping Requirements

92.5.1 Recordkeeping

Any person subject to the requirements of this regulation shall compile and retain records that provide evidence of control measure application, by indicating type of treatment or control measure, extent of coverage, and date applied. The records and supporting documentation shall be made available to the Control Officer within 24 hours of a written request.

92.5.2 Records Retention

Copies of the records required by Section 92.5.1 shall be retained for at least one year. Facilities subject to Section 12.5 ("Part 70 Operating Permit Requirements") shall maintain records in accordance with Part 70 record keeping requirements.

92.6 Test Methods

92.6.1 Stabilization Test Methods for Unpaved Parking Lots and Storage Areas

92.6.1.1 Opacity Test Method

The purpose of this test method is to estimate the percent opacity of fugitive dust plumes caused by vehicle movement on unpaved parking lots and storage areas. This method can only be conducted by an individual who has received certification as a qualified Visible Emissions Evaluator.

- (a) Step 1: Stand at least 16.5 feet from the fugitive dust source in order to provide a clear view of the emissions, with the sun oriented in the 140-degree sector to the back. Following the above requirements, make opacity observations so that the line of vision is approximately perpendicular to the dust plume and wind direction. If multiple plumes are involved, do not include more than one plume in the line of sight at one time.
- (b) Step 2: Record the fugitive dust source location, source type, method of control used (if any), evaluator's name, certification data and affiliation, and a sketch of the observer's position relative to the fugitive dust source. Also, record the time, estimated distance to the fugitive dust source location, approximate wind direction, estimated wind speed, description of the sky condition (presence and color of clouds), and color of the plume and type of background on the visible emission observation form when opacity readings are both initiated and completed.
- (c) Step 3: Make opacity observations, to the extent possible, using a contrasting background that is perpendicular to the line of vision. Make opacity observations approximately 1 meter above the surface from which the plume is generated. Note that the observation is to be made at only one visual point upon generation of a plume, as opposed to visually tracking the entire length of a dust plume as it is created along a surface. Make two observations per vehicle, beginning with the first reading at zero seconds and the second reading at five seconds. The zero-second observation should begin immediately after a plume has been created above

the surface involved. Do not look continuously at the plume but, instead, observe the plume briefly at zero seconds and then again at five seconds.

- (d) Step 4: Record the opacity observations to the nearest 5 percent on an observational record sheet. Each momentary observation recorded represents the average opacity of emissions for a fivesecond period. While it is not required by the test method, EPA recommends that the observer estimate the size of vehicles that generate dust plumes for which readings are taken (e.g., mid-size passenger car or heavy-duty truck) and the approximate speeds the vehicles are traveling when readings are taken.
- (e) Step 5: Repeat Steps 3 and 4 until you have recorded a total of 12 consecutive opacity readings. This will occur once six vehicles have driven on the source in your line of observation for which you are able to take proper readings. The 12 consecutive readings must be taken within the same period of observation, but must not exceed one hour. Observations immediately preceding and following interrupted observations can be considered consecutive.
- (f) Step 6: Average the 12 opacity readings together. If the average opacity reading equals 20 percent or lower, the source is in compliance with the opacity standard described in this regulation.

92.6.1.2 Silt Content Test Method

The purpose of this test method is to estimate the silt content of the trafficked parts of unpaved parking lots and storage areas. The higher the silt content, the greater the amount of fine dust particles that are entrained into the atmosphere when cars and trucks drive on unpaved parking lots or storage areas.

- (a) Equipment:
 - Set of sieves with the following openings: 4 millimeters (mm), 2 mm, 1 mm, 0.5 mm, and 0.25 mm; a lid; and collector pan;
 - (2) Small whiskbroom or paintbrush with stiff bristles and dustpan one foot in width (the broom/brush should preferably have one thin row of bristles no longer than 1.5 inches in length);
 - (3) Spatula without holes;
 - (4) Small scale with half-ounce increments (e.g., postal/package scale);

- (5) Shallow, lightweight container (e.g., plastic storage container);
- (6) Sturdy cardboard box or other rigid object with a level surface;
- (7) Basic calculator;
- (8) Cloth gloves (optional for handling metal sieves on hot, sunny days);
- (9) Sealable plastic bags (if sending samples to a laboratory); and
- (10) Pencil/pen and paper.
- (b) Step 1: Look for a routinely traveled surface, as evidenced by tire tracks (only collect samples from surfaces that are not damp due to precipitation or dew). This statement is not meant to be a standard in itself for dampness where watering is being used as a control measure; it is only intended to ensure that surface testing is done in a representative manner. Use caution when taking samples to ensure personal safety with respect to passing vehicles. Gently press the edge of a dustpan (1 foot in width) into the surface four times to mark an area that is 1 square foot. Collect a sample of loose surface material using a whiskbroom or brush and slowly sweep the material into the dustpan, minimizing escape of dust particles. Use a spatula to lift heavier elements such as gravel. Only collect dirt/gravel to an approximate depth of 3/8 inch or 1 cm in the 1 square foot area. If you reach a hard, underlying subsurface that is greater than 3/8 inch in depth, do not continue collecting the sample by digging into the hard surface. In other words, you are only collecting a surface sample of loose material down to 1 cm. In order to confirm that samples are collected to 1 cm in depth, a wooden dowel or other similar narrow object at least one foot in length can be laid horizontally across the survey area while a metric ruler is held perpendicular to the dowel.
 - (1) At this point, the sample can be collected into a plastic bag or container and take it to an independent laboratory for silt content analysis. A reference to the procedure the laboratory is required to follow is at the end of this section.
- (c) Step 2: Place a scale on a level surface. Place a lightweight container on the scale. Zero the scale with the weight of the empty container on it. Transfer the entire sample collected in the dustpan to the container, minimizing escape of dust particles. Weigh the sample and record its weight.

- (d) Step 3: Stack a set of sieves in order according to the size openings specified above, beginning with the largest size opening (4 mm) at the top. Place a collector pan underneath the bottom (0.25 mm) sieve.
- (e) Step 4: Carefully pour the sample into the sieve stack, minimizing escape of dust particles by slowly brushing material into the stack with a whiskbroom or brush (on windy days, use the trunk or door of a car as a wind barricade). Cover the stack with a lid. Lift the sieve stack and shake it vigorously up, down, and sideways for at least 1 minute.
- (f) Step 5: Remove the lid from the stack and disassemble each sieve separately, beginning with the top sieve. As you remove each sieve, examine it to make sure that all of the material has been sifted to the finest sieve through which it can pass; e.g., material in each sieve (besides the top sieve that captures a range of larger elements) should look the same size. If this is not the case, restack the sieves and collector pan, cover the stack with the lid, and shake it again for at least 1 minute (you only need to reassemble the sieve(s) that contain material, which requires further sifting).
- (g) Step 6: After disassembling the sieves and collector pan, slowly sweep the material from the collector pan into the empty container originally used to collect and weigh the entire sample. Take care to minimize escape of dust particles. You do not need to do anything with material captured in the sieves; only the collector pan. Weigh the container with the material from the collector pan and record its weight.
- (h) Step 7: If the source is an unpaved road, multiply the resulting weight by 0.38. If the source is an unpaved parking lot or storage area, multiply the resulting weight by 0.55. The resulting number is the estimated silt loading. Then, divide by the total weight of the sample you recorded earlier in Step 2 and multiply by 100 to estimate the percent silt content.
- Step 8: Select another two routinely traveled portions of the unpaved road or unpaved parking lot and repeat this test method.
 Once you have calculated the silt loading and percent silt content of the three samples collected, average your results together.
- (j) Step 9: Examine the results. If the average silt loading is less than 0.33 oz/ft², the surface is stable. If the average silt loading is greater than or equal to 0.33 oz/ft², then examine the average percent silt content. If the source is an unpaved parking lot or storage area and the average percent silt content is 8 percent or less, the surface is

stable. If your field test results are within 2 percent of the standard (for example, 6-10 percent silt content on an unpaved parking lot or storage area), it is recommended that you collect three additional samples from the source according to Step 1 and take them to an independent laboratory for silt content analysis.

(k) You may choose to collect three samples from the source, according to Step 1, and send them to an independent laboratory for silt content analysis rather than conduct the sieve field procedure. If so, the test method the laboratory is required to use is described in Volume 1, Appendix C.2.3 ("Silt Analysis") of EPA's *Procedures For Laboratory Analysis of Surface/Bulk Loading Samples* (1995, fifth edition).

History: Initial adoption: June 22, 2000 Amended: November 16, 2000; November 20, 2001; December 17, 2002; June 3, 2003; July 1, 2004; December 30, 2008; March 17. 2009; August 2, 2011; April 15, 2014.

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SECTION 93: FUGITIVE DUST FROM PAVED ROADS AND STREET SWEEPING EQUIPMENT

93.1 Fugitive Dust from Paved Roads and Street Sweeping Equipment

- 93.1.1 **Purpose:** To limit the Emission of particulate matter into the ambient air from paved roads and Paved alleys.
- 93.1.2 **Applicability:** The provisions of this regulation shall apply to Paved roads and Paved alleys which are located in a PM₁₀ nonattainment area, an area subject to a PM₁₀ maintenance plan defined under 42 U.S. Code § 7505a, or the Apex Valley (hydrographic areas 216 and 217). Nothing in Subsections 93.1 through 93.4 of these Regulations shall be construed to prevent enforcement of Section 40 (Prohibition of Nuisance Conditions) of these Regulations. The provisions of this regulation shall not apply to noncommercial and non-institutional private driveways. The provisions of this regulation shall not apply to Stationary Sources as defined in Section 0, except that these Control Measures shall be considered as part of a BACT determination.

93.2 **Requirements:**

- 93.2.1 **Paved Road Development Standards:** Owners and/or Operators having jurisdiction over, or ownership of, public or private Paved roads shall construct, or require to be constructed, all new or modified Paved roads in conformance with the road shoulder width and drivable median stabilization requirements as specified below:
- 93.2.1.1 New construction, modification, or approvals of Paved roads shall be constructed with a Paved travel section, and four (4) feet of Paved or stabilized shoulder on each side of the Paved travel section. The four (4) feet of shoulder shall be Paved or stabilized with a dust palliative or gravel to prevent the trackout of mud and dirt to the Paved section. Where shoulder stabilization is used in place of paving, the stabilized shoulders must be maintained in compliance with the stabilization standards set forth in Subsection 93.2.1.5 of this regulation.
- 93.2.1.2 New construction, modification, or approvals of Paved roads on which vehicular traffic is greater than or equal to 3,000 vehicles per day after March 1, 2003 shall be constructed with a Paved travel section, and eight (8) feet of stabilized shoulder adjacent to the Paved travel section where right-of-way is available for the stabilized shoulder. Where the right-of-way is not available for the full eight (8) feet of stabilized shoulder, curbing shall be installed adjacent to the shoulder. Stabilized shoulders must be maintained in

compliance with the stabilization standards set forth in Subsection 93.2.1.5 of this regulation.

- 93.2.1.3 Where curbing is constructed adjacent to and contiguous with the travel lane or Paved shoulder of a road, the shoulder width design standards specified in Subsection 93.2.1.1 shall not be applicable.
- 93.2.1.4 Where Paved roads are constructed, or modified with shoulders and/or medians, the shoulders and/or medians shall be constructed as set forth below. If the shoulder, median, or extended right-of-way is located in a limited access freeway right-of-way, then the requirements of Section 90 apply.
 - (a) With curbing, or
 - (b) With solid paving across the median, or
 - (c) Apply dust palliatives, in compliance with the stabilization standards set forth in Subsection 93.2.1.5 of this regulation, or
- (d) Apply two (2) inches of gravel in compliance with the stabilization standards set forth in Subsection 93.2.1.5 of this regulation, or
 - (e) With materials that prevent the trackout of mud and dirt to the Paved section such as landscaping or decorative rock.
- 93.2.1.5 Stabilization Standards: For the purpose of this regulation, the unpaved shoulders and medians of Paved roads shall be considered to have Control Measures effectively implemented when Fugitive Dust Emissions do not exceed 20% Opacity and silt loading does not equal or exceed 0.33 oz/ft² silt loading, as determined by Subsection 93.4.1 (Test Methods-Stabilized Paved Road Shoulders and Medians) of these Regulations, except for unpaved shoulders on which gravel has been applied under the provisions of Subsection 93.2.1.1. Failure to comply with either the 20% Opacity limit or silt loading limit indicates that the shoulder is not stable. Where gravel is utilized to prevent trackout from unpaved shoulders and medians of Paved roads, surface gravel shall be uniformly applied and maintained to a depth of two (2) inches to comply with the 20% Opacity standards set forth in Subsection 93.4.1.1 of these Regulations and the gravel depth and Silt Content Test Method set forth in Subsection 93.4.1.3 of these Regulations. For the purposes of this section, the term gravel shall include "aggregate" and shall mean unconsolidated material greater than 0.25 (1/4) inch but less than three (3) inches, and contain no more than six (6) percent silt, by dry weight, that will pass through a No. 200 sieve. Failure to comply with either the 20% Opacity limit or the Gravel Depth and Silt Content Test Method indicates that the shoulder is not stable.

- 93.2.1.6 Requirements For existing nonconforming Paved roads: Owners and/or Operators having jurisdiction over, or ownership of, existing public or private Paved roads which do not conform with the requirements of Subsections 93.2.1.1 through 93.2.1.5 of this regulation, shall reconstruct, or require to be reconstructed, the existing nonconforming Paved road within 365 calendar days following the initial discovery that the road fails to meet the requirements set forth in Subsections 93.2.1.1 through 93.2.1.5 of these Regulations. The Control Officer may require short-term stabilization of any Paved road subject to the requirements set forth in Subsections 93.2.1.1 through 93.2.1 of these Regulations. Other stabilization methods of equal or greater effectiveness may be implemented with the written approval of the Control Officer, providing emissions do not exceed 20% Opacity, unless the US EPA Region 9 objects to such approval within ninety (90) days from the date notification of the proposed alternative stabilization method is sent to the US EPA Region 9 by the Control Officer. If the US EPA Region 9 does not object within the ninety (90) days from the date notification, the proposed alternative stabilization method may be implemented. If the US EPA Region 9 objects to the proposed alternative stabilization method, the proposed alternative stabilization method shall require written approval from both the Control Officer and the US EPA Region 9 prior to the implementation of the proposed alternative stabilization method.
- 93.2.2 **Street Sweeper Requirements:** After January 1, 2001, any Owner and/or Operator which utilizes street sweeping equipment or street sweeping services for street sweeping on Paved roads or Paved parking lots, shall acquire or contract to acquire only certified PM₁₀-efficient street sweeping equipment.
- 93.2.2.1 PM₁₀-Efficient Street Sweepers: For the purposes of Subsection 93.2.2 of this regulation, a PM₁₀-efficient street sweeper is a street sweeper which has been certified by the South Coast Air Quality Management District (California) (SCAQMD) to comply with the District's performance standards set forth in SCAQMD Rule 1186 utilizing the test methods set forth in SCAQMD Rule 1186, Appendix A.
- 93.2.3 **Equipment Restriction:** The use of dry rotary brushes and blower devices for the removal of dirt, rock, or other debris from a Paved road or Paved parking lot is prohibited without the use of sufficient wetting to limit the visible emissions to not greater than 20%Oopacity when measured as set forth in Subsection 93.4.1.1. The use of dry rotary brushes or blower devices without the use of water is expressly prohibited.
- 93.2.4 **Crack Seal Equipment Requirements:** After December 31, 2005 any Owner and/or Operator which utilizes crack seal cleaning equipment shall acquire, or contract to acquire, only vacuum type crack cleaning seal equipment.

93.3 Record Keeping and Reporting Requirements

- 93.3.1 **Record Keeping:** Any Person subject to the requirements of this regulation shall compile and retain records that provide evidence of Control Measure application, by indicating type of treatment or Control Measure, extent of coverage, and date applied. The records and supporting documentation shall be made available to the Control Officer within 24 hours of a written request.
- 93.3.2 **Reporting Requirements:** Owners and/or Operators having jurisdiction over Paved roads shall prepare and submit a written report to the department documenting compliance with the provisions of this regulation. This report shall be prepared annually on a calendar year basis. The reports shall be transmitted no later than 90 days after the end of the calendar year and shall include:
- 93.3.2.1 The total miles of Paved roads under the jurisdiction of the Owner and/or Operator and the miles of Paved roads constructed or modified during the reporting period.
- 93.3.2.2 For newly constructed or modified roads, documentation on how the requirements of Subsections 93.2.1.1 through 93.2.1.5 have been met.
- 93.3.2.3 Other information which may be needed by the Control Officer for compliance with EPA requirements for enforcement of this regulation.
- 93.3.3 **Records Retention:** Copies of the records required by Subsection 93.3.1 (Record Keeping Requirements) of this regulation shall be retained for at least one year.

93.4 Test Methods

93.4.1 Stabilization Test Methods for Unpaved Shoulders and Medians of Paved Roads:

- 93.4.1.1 Opacity Test Method: The purpose of this test method is to estimate the percent Opacity of Fugitive Dust plumes caused by vehicle movement on unpaved road shoulders and medians of Paved roads. This method can only be conducted by an individual who has received certification as a qualified observer.
 - (a) Step 1: Stand at least 20 feet from the Fugitive Dust source in order to provide a clear view of the Emissions with the sun oriented in the 140-degree sector to the back. Following the above requirements, make Opacity observations so that the line of vision is approximately

perpendicular to the dust plume and wind direction. If multiple plumes are involved, do not include more than one plume in the line of sight at one time.

- (b) Step 2: Record the Fugitive Dust source location, source type, method of control used, if any, observer's name, certification data and affiliation, and a sketch of the observer's position relative to the Fugitive Dust source. Also, record the time, estimated distance to the Fugitive Dust source location, approximate wind direction, estimated wind speed, description of the sky condition (presence and color of clouds), observer's position to the Fugitive Dust source, and color of the plume and type of background on the visible Emission observation form both when Opacity readings are initiated and completed.
- (c) Step 3: Make Opacity observations, to the extent possible, using a contrasting background that is perpendicular to the line of vision. Make Opacity observations approximately 3 feet above the surface from which the plume is generated. Note that the observation is to be made at only one visual point upon generation of a plume, as opposed to visually tracking the entire length of a dust plume as it is created along a surface. Make two observations per vehicle, beginning with the first reading at zero seconds and the second reading at five seconds. The zero-second observation should begin immediately after a plume has been created above the surface involved. Do not look continuously at the plume but, instead, observe the plume briefly at zero seconds and then again at five seconds.
- (d) Step 4: Record the Opacity observations to the nearest 5% on an observational record sheet. Each momentary observation recorded represents the average Opacity of Emissions for a 5-second period. While it is not required by the test method, EPA recommends that the observer estimate the size of vehicles which generate dust plumes for which readings are taken (e.g. mid-size passenger car or heavy-duty truck) and the approximate speeds the vehicles are traveling when readings are taken.
- (e) Step 5: Repeat Step 3 (Subsection 93.4.1.1 (c) of this regulation) and Step 4 (Subsection 93.4.1.1 (d) of this regulation) until you have recorded a total of 12 consecutive Opacity readings. This will occur once six vehicles have driven on the source in your line of observation for which you are able to take proper readings. The 12 consecutive readings must be taken within the same period of observation but must not exceed 1 hour. Observations immediately preceding and following interrupted observations can be considered consecutive.

- (f) Step 6: Average the 12 Opacity readings together. If the average Opacity reading equals 20% or lower, the source is in compliance with the Opacity standard described in Section 93 of these Regulations.
- 93.4.1.2 Silt Loading Test Method: The purpose of this test method is to estimate the silt loading of the representative surfaces of dust palliative and untreated shoulders and medians of Paved roads. The higher the silt loading, the greater the amount of fine dust particles that are entrained into the atmosphere when vehicles drive on unpaved shoulders and medians of Paved roads.
 - (a) Equipment:
 - (1) A set of sieves with the following openings: 4 millimeters (ASTM No. 5), 2 millimeters, (ASTM No. 10), 1 millimeter (ASTM No. 18), 0.5 millimeter (ASTM No. 35) and 0.25 millimeter (ASTM No. 60), (or a set of standard/commonly available sieves), a lid, and collector pan.
 - (2) Equipment necessary to collect a sample of material from the surface of the subject area. (e.g., a small whisk broom or paintbrush with bristles no longer than 1.5 inches, dustpan, spatula, shallow container, sealable plastic bags.)
 - (3) Equipment necessary to complete field analysis of material. (e.g., weighting scale with half once increments, calculator, writing material.)
 - (b) Step 1: Look for a representative surface within four (4) feet of the edge of the pavement. [Only collect samples from surfaces that are not damp due to precipitation or dew. This statement is not meant to be a standard in itself for dampness where watering is being used as a Control Measure. It is only intended to ensure that surface testing is done in a representative manner.] Gently press the edge of a dustpan into the surface to mark an area that is 1 square foot. Collect a sample of loose surface material using a whiskbroom or brush and slowly sweep the material into the dustpan, minimizing escape of dust particles. Use a spatula or similar device to lift heavier elements such as gravel. Only collect dirt/gravel to an approximate depth of 3/8 inch in the 1 square foot area. If you reach a hard, underlying subsurface that is less than 3/8 inch in depth, do not continue collecting the sample by digging into the hard surface. In other words, you are only collecting a surface sample of loose material down to 3/8 inch. In order to confirm that samples are

collected to 3/8 inch in depth, a wooden dowel or other similar narrow object at least one foot in length can be laid horizontally across the survey area while a ruler is held perpendicular to the dowel.

- At this point, you can choose to place the sample collected into a plastic bag or container and return to the department facilities to complete the remaining steps or take it to an independent laboratory for silt loading analysis. A reference to the procedure the laboratory is required to follow is at the end of this section.
- (c) Step 2: Place a scale on a level surface. Place a lightweight container on the scale. Zero the scale with the weight of the empty container on it.
- (d) Step 3: Stack a set of sieves in order according to the size openings specified above, beginning with the largest size opening (4 mm) at the top. Place a collector pan underneath the bottom (0.25 mm) sieve.
- (e) Step 4: Carefully pour the sample into the sieve stack, minimizing escape of dust particles by slowly brushing material into the stack with a whiskbroom or brush, (on windy days, use the trunk or door of a car as a wind barricade). Cover the stack with a lid. Lift up the sieve stack and shake it vigorously up, down and sideways or place on a powered shaker for at least 1 minute.
- (f) Step 5: Remove the lid from the stack and disassemble each sieve separately, beginning with the top sieve. As you remove each sieve, examine it to make sure that all of the material has been sifted to the finest sieve through which it can pass; e.g., material in each sieve (besides the top sieve that captures a range of larger elements) should look the same size. If this is not the case, re-stack the sieves and collector pan, cover the stack with the lid, and shake it again for at least 1 minute (you only need to reassemble the sieve(s) that contain material, which requires further sifting).
- (g) Step 6: After disassembling the sieves and collector pan, slowly sweep the material from the collector pan into the empty container calibrated on the scale in Step 2 (Subsection 93.4.1.2(c)). Take care to minimize escape of dust particles. You do not need to do anything with material captured in the sieves; only the collector pan. Weigh the container with the material from the collector pan and record its weight.

- (h) Step 7: Multiply the resulting weight by 0.38. The resulting number is the estimated silt loading.
- (i) Step 8: Select another two representative surfaces of the unpaved road shoulder or median and repeat this test method. Once you have calculated the silt loading of the 3 samples collected, average your results together.
- (j) Step 9: Examine Results. If the average silt loading is less than 0.33 oz/ft², the surface is stable.
- (k) Independent Laboratory Analysis: You may choose to collect 3 samples from the source, according to Step 1 (Subsection 93.4.1.2 (b) of this regulation), and send them to an independent laboratory for silt loading analysis rather than conduct the sieve field procedure. If so, the test method the laboratory is required to use is:

"Procedures for Laboratory Analysis of Surface/Bulk Loading Samples", (Fifth Edition, Volume I, Appendix C.2.3 "Silt Analysis", 1995), AP-42, Office of Air Quality Planning & Standards, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina

93.4.1.3 **GRAVEL DEPTH AND SILT CONTENT TEST METHOD:** The purpose of this two (2) part test method is to estimate the gravel depth and silt content of graveled road shoulders and medians of Paved roads. Two (2) inches of gravel are required to prevent vehicle tires from digging through the gravel. The higher the silt content in the top inch of the gravel, the greater the amount of fine dust particles that are entrained into the atmosphere when vehicles drive on gravel-stabilized shoulders.

(a) Equipment necessary to collect a sample of material from the surface of the subject area, including a sampling device one (1) foot by one (1) foot by one (1) inch deep, and other equipment such as, a small whisk broom or paintbrush with bristles no longer than 1.5 inches, dustpan, spatula, shallow container, sealable plastic bags, ruler, and wood dowel or similar straight edge device.

(b) Step 1: Look for a section within four (4) feet of the edge of pavement that has an existing gravel surface that appears representative of the gravel shoulder. Using the spatula, remove the gravel from a three (3) to five (5) inch diameter area to the depth of the applied gravel surface. Make sure that the removed gravel is placed well away from the cleared area. Place a wooden dowel or other similar narrow object across the cleared survey area, and

measure, perpendicular to the narrow object, to depth of the cleared area to determine the depth of the gravel material. If the depth of the gravel material is less than two (2) inches, the area fails and is not considered stable. If the depth of the gravel material is two (2) inches or greater, go to Step 2 (Subsection 93.4.1.3 (c) of this regulation).

(c) Step 2. Using the one (1) foot by one (1) foot by one (1) inch deep sampling frame, gently press the edges of the frame into the road shoulder surface to a depth of one (1) inch. Collect the sample of loose surface material using the whiskbroom, brush, spatula, and dustpan to collect the material into the sample bag, minimizing escape of dust particles. Collect all material to a one (1) inch depth in the one (1) square foot sampling frame.

(d) Step 3. Repeat Steps 1 and 2 to obtain two (2) additional samples for a total of three (3) samples. In the event any sampled location is found to have less than (2) inches of gravel under Step 1, the shoulder is considered to be unstable. Do not proceed with additional sampling.

(e) Step 4. Laboratory Analysis: Samples collected from this source, according to Step 3 (Subsection 93.4.1.3 (d) of this regulation), are sent to a laboratory for silt content analysis. The test method the laboratory is required to use is:

i. Wet screen the entire sample through a one (1) inch sieve.

ii. For all material passing through the one (1) inch sieve, use ASTM No. 200 wet Sieve Method to determine the percentage content of silt.

(f) Step 5: Examine Results. Average the silt content for the (3) samples. If the average silt content of the three samples is equal to or less than or six (6) percent, the surface is stable.

History: Initial adoption: June 22, 2000

Amended: November 16, 2000; November 20, 2001; December 17, 2002; March 4, 2003; June 3, 2003; July 1, 2004, April 15, 2014; January 21, 2020.

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SECTION 94: PERMITTING AND DUST CONTROL FOR CONSTRUCTION ACTIVITIES

94.1 **Purpose.**

- 94.1.1 The purpose of this section of the Air Quality Regulations is:
 - (a) To limit the Emission of Particulate Matter into the ambient air by preventing, controlling, and mitigating Fugitive Dust from Construction Activities; and
 - (b) To establish Fugitive Dust control standards for Clark County, define reasonable precautions for the prevention and control of Fugitive Dust from all Construction Activities and to establish thresholds for enforcement of these standard.

94.2 Applicability.

- 94.2.1 This section of the Air Quality Regulations applies to all Construction Activities that disturb or have the potential to disturb soils and that emit or have the Potential to Emit Particulate Matter into the atmosphere. This section covers the requirements for a Dust Control Permit and a Dust Mitigation Plan as well as the application procedures.
- 94.2.2 For the purpose of this regulation, Construction Activities include, but are not limited to, the following practices:
 - (a) Land clearing, maintenance, and land cleanup using machinery;
 - (b) soil and rock excavation or removal;
 - (c) soil or rock hauling;
 - (d) soil or rock crushing or screening;
 - (e) filling, compacting, stockpiling and grading;
 - (f) explosive blasting;
 - (g) demolition;
 - (h) implosion;
 - (i) handling of building materials capable of entrainment in air (e.g., sand, cement powder);
 - (j) abrasive blasting;
 - (k) concrete, stone, and tile cutting;
 - (I) mechanized Trenching;
 - (m) initial landscaping;
 - (n) operation of motorized machinery;

- (o) driving vehicles on a Construction site; and
- (p) establishing and/or using staging areas, parking areas, material storage areas, or access routes to or from a Construction site.
- 94.2.3 This regulation shall not apply to operation of Emission Units or activities permitted under any other section of the Air Quality Regulations, with the specific exception that any Construction Activities that occur at such facilities and the land area that Various Location Operating Permits are located on shall be subject to this regulation. In all permits issued under the Air Quality Regulations the provisions of this section shall be considered as part of a BACT determination.
- 94.2.4 This regulation shall not apply to Normal Farm Cultural Practices and existing equestrian facilities that are in compliance with zoning requirements.
- 94.2.5 This regulation shall not apply to emergency activities that may disturb the soil, conducted by any utility or government agency in order to prevent public injury or restore critical utilities to functional status.

94.3 **Definitions.**

- 94.3.1 For the purpose of this section of the Air Quality Regulations, terms listed in this subsection have the meanings ascribed.
- 94.3.2 Best Available Control Measures (BACM): means those Control Measures that are the best available with current technology for reducing or eliminating the release of Particulate Matter into the atmosphere from Construction Activities. These include but are not limited to all measures listed in the Construction Activities Dust Control Handbook as Best Management Practices, any control measure required by a Corrective Action Order, and any other Control Measures required by the Control Officer.
- 94.3.3 Construction Activities Dust Control Handbook: means the reference manual used to complete a Dust Control Permit and a Dust Mitigation Plan, and contains a listing of the Best Management Practices, copies of which are on file at the department.
- 94.3.4 Department: means the Clark County Nevada department responsible for the air quality programs.
- 94.3.5 Dust Mitigation Plan: means an attachment to a Dust Control Permit that lists all the Construction Activities that shall occur and the Best Management Practices that shall be used, to mitigate dust at a permitted site. Upon approval of the application the Dust Mitigation Plan becomes an enforceable part of the dust control permit.

94.3.6 Gravel: means a mineral or rock aggregate ranging in size from 0.25 inch to 3 inch on its longest dimension that is either natural or the product of a mineral processing operation and contains no more than 6% silt, by weight.

94.4 Permits Required, Exemptions from Required Permit and Responsibility when Exempt.

- 94.4.1 Prior to engaging in any Construction Activities, the property Owner and/or Operator, who is the owner's designee shall apply for and obtain a dust control permit from the department.
- 94.4.2 A dust control permit shall not be required for soil disturbing or Construction Activities less than 0.25 acre in overall area, mechanized Trenching less than one hundred (100) feet in length, or for mechanical demolition of any structure smaller than one thousand (1,000) square feet.
- 94.4.3 The following activities shall not require a dust control permit:
 - (a) Landscaping by an individual at his/her place of residence;
 - (b) Emergency maintenance activities conducted by government agencies on publicly maintained roads, road shoulders, right-of-ways and on public flood control facilities; or,
 - (c) Weed removal or Dust Palliative application projects conducted solely for the purpose of compliance with weed abatement or vacant land dust control regulations, wherein no grade elevation changes, no soil or rock is imported or exported, or no cut and fill operations occur. Importing of gravel or rock for use as a Dust Palliative is allowed under this subsection.

94.5 **Permit Applications.**

- 94.5.1 Application for issuance or Renewal of a dust control permit shall be made on a form and in a manner prescribed by the Control Officer.
- 94.5.2 Each application shall be accompanied by payment of a fee in accordance with Section 18.
- 94.5.3 Public agency maintenance projects, performed by that agency's employees, may be eligible for a waiver of permit fees upon approval of the Control Officer.
- 94.5.4 All applications for a Dust Control Permit shall include a Dust Mitigation Plan with appropriate Control Measures from the Construction Activities Dust Control Handbook for every construction activity to be conducted. Other Control Measures that are at least as effective as Control Measures contained in the Construction Activities Dust Control Handbook may be implemented

provided they meet the criteria outlined in Section 2 of the introduction to the Best Management Practices section of the handbook and with the approval of the Control Officer.

- 94.5.5 An application for a Dust Control Permit for a Construction project ten (10) acres or more in area, for Trenching activities one (1) mile or greater in length, or for structure demolition using implosive or explosive blasting techniques, shall be required to submit a detailed supplement to the Dust Mitigation Plan. This supplement shall be in the form of a written report and shall, at minimum, detail the project description, the area and schedule of the phases of land disturbance, the Control Measures and the contingency measures to be used for all Construction Activities. This supplement shall become part of the Dust Control Permit as an enforceable permit condition.
- 94.5.6 An application for a Dust Control Permit that includes demolition of a structure One thousand (1,000) square feet or greater in area or explosive blasting of rock or soil, shall include the appropriate supplemental form that is provided in Attachment 1 of the Construction Activities Dust Control Handbook for each activity. These forms shall become part of the Dust Control Permit as an enforceable permit condition.
- 94.5.7 If an applicant elects not to use the Soil Maps in the Dust Control Handbook for the purpose of determining the appropriate Best Management Practices, and the application is for a Dust Control Permit for a construction project of fifty (50) acres or more in area, then the application shall contain an actual soils analysis of the entire project. The soils analysis shall use the appropriate ASTM test method to determine soil types. If the soils analysis identifies two or more soil types, the area of each soil type shall be shown on a map of the project. A copy of the map shall be included in the application for the Dust Control Permit. The soils analysis shall utilize at least one (1) sample taken from the top one (1) foot of soil for each soil type identified. The soils analysis shall use the appropriate ASTM test to determine the silt content and optimum moisture of the sample(s). The application for the Dust Control Permit shall contain the particulate Emission potential (PEP) for each soil type identified calculated from the results of the soils analysis and the Silt Content vs. Optimum Moisture Content Chart (figure 2) in the Construction Activities Dust Control Handbook. The choice of Best Management Practices for the Dust Mitigation Plan may be different for each soil type area, if not, the highest PEP identified on the project shall be used.
- 94.5.8 The application shall be signed by the property owner or the owner's designee as listed on the "Owner's Designee for Dust Control Permit for Construction Activities" form.

- 94.5.9 Upon approval, the completed Dust Control Permit application, Dust Mitigation Plan and related maps and forms shall become a part of the Dust Control Permit.
- 94.5.10 If the applicant is notified by the Control Officer that the Dust Control Permit application is incomplete and requests additional information and the applicant fails to provide the requested information within 30 days of such notice, the application will be terminated and all fees submitted will not be refundable.

94.6 **Dust Control Permit Requirements.**

- 94.6.1 Issuance or Renewal of each Dust Control Permit requires payment of a Dust Control Permit fee in accordance with Section 18.
- 94.6.2 A Dust Control Permit is to be granted subject to the right of inspection of such affected land without prior notice by the Control Officer.
- 94.6.3 The permit shall be granted subject to, but not limited to, the following conditions:
 - (a) The permittee is responsible for ensuring that all persons abide by the conditions of the permit and these Regulations;
 - (b) The permittee is responsible for supplying complete copies of the Dust Control Permit including the Dust Mitigation Plan, to all project contractors and subcontractors; and,
 - (c) The permittee is responsible for all permit conditions, until a Certificate of Project Completion (form DCP 08 see Attachment 1) has been submitted by the permittee and approved by the Control Officer.
- 94.6.4 The signature of the Owner and/or Operator who is the Owner's designee on the Dust Control Permit shall constitute agreement to accept responsibility for meeting the conditions of the permit and for ensuring that Best Available Control Measures are implemented throughout the project site.

- 94.6.5 Requirements and conditions of the Dust Control Permit shall be made a part of the specifications of the Construction contract between the owner and prime contractor and contracts between the prime contractor and applicable subcontractors. Said contracts must provide a monetary allowance for any dust control options specified in the Dust Mitigation Plan. The amount of the allowance may be specified either by the Owner, competitively bid, or negotiated by and amongst the parties.
- 94.6.6 Projects less than 0.25 acres in area under common control that are either contiguous or separated only by a public or private roadway and that cumulatively equal or exceed 0.25 acre in area are also required to obtain a Dust Control Permit. These projects are required to meet all Dust Control Permit requirements based on cumulative area. All contiguous projects under common control may be required to obtain and operate under a single permit, at the discretion of the Control Officer.
- 94.6.7 A Dust Control Permit shall be required for routine, public agency road maintenance, road shoulder maintenance, flood control facility maintenance, and maintenance activities that disturb soil and are capable of causing Fugitive Dust. Such Dust Control Permits may be issued based upon written monthly, quarterly, semi-annual, or annual schedules of work for routine maintenance activities. Such permits shall include a Dust Mitigation Plan listing all activities to be performed that may disturb the soil, and shall include Best Management Practices for all these activities. Public agencies shall quantify miles and acres of maintenance activities to be performed under the conditions of the Dust Control Permit.
- 94.6.8 The permit holder shall notify the department in writing within ten (10) days following the cessation of active operations on all or part of a Construction site when cessation will extend thirty (30) days or longer.
- 94.6.9 A Dust Control Permit is valid for one calendar year from the date of issuance.
- 94.6.10 A complete copy of the Dust Control Permit shall be kept on the project site at all times that Construction Activities occur and made available upon request of the Control Officer.

94.7 General and Administrative Standards.

- 94.7.1 Anyone engaging in Construction Activities on a site having a Dust Control Permit shall be subject to all conditions set forth in that permit. Failure to comply with any condition set forth in the permit shall be in violation of this section of the Air Quality Regulations.
- 94.7.2 The Construction Activities Dust Control Handbook, excluding all attachments, is adopted and made a part of this section of the Air Quality

Regulation, as if it were fully set forth herein, except as amended by this regulation.

94.7.3 **Dust Control Permit: Restrictions on issuance; Suspension; Revocation; Requirement for Bond; Right to Appeal:**

- 94.7.3.1 Permits shall not be issued to an applicant having outstanding unpaid department fees and/or penalties, not under appeal.
- 94.7.3.2 If an Owner and/or Operator has three (3) Notices of Violation that have been adjudicated by the Hearing Officer at the same project for which the Dust Control Permit was issued, the Control Officer or his/her representative may suspend or revoke the permit. Upon suspension or revocation of a permit, all activities that are authorized by that permit shall cease. The Control Officer shall post notices of suspension or revocation conspicuously on the property involved. The notice shall state the reasons and indicate the date and time of suspension and/or revocation. The suspension or revocation shall remain in effect until such time as rescinded by the Control Officer. If the permit has been suspended, the permit may be reinstated. If revoked, a new permit will not be issued until an application is made and fees paid in accordance with Section 18 of these Regulations. The permittee shall have a right to hearing before the Hearing Officer within five (5) working days from date of issuance of the suspension or revocation. Alternatively, in such instances, the Control Officer may require compliance with Subsection 94.7.6 for all operators of earth moving or soil disturbing equipment.
- 94.7.3.3 If during any 180 day period an Owner and/or Operator has three (3) Notices of Violation that have been adjudicated by the Hearing Officer for the same Construction site, the Control Officer shall require the posting of a surety bond to ensure implementation of the mitigation measures set forth in the approved Dust Control Permit for the subject site. If an Owner and/or Operator has two (2) or more Notices of Violation that have been adjudicated by the Hearing Officer from the department for: failure to obtain a Dust Control Permit; failure to implement Best Management Practices; or failure to comply with a Corrective Action Order, the Control Officer may, as a condition of obtaining or maintaining a Dust Control Permit, issue a Corrective Action Order requiring the Owner and/or Operator to post a surety bond to ensure the implementation of the mitigation measures set forth in said Dust Control Permits.

The Owner and/or Operator shall provide the Control Officer the surety bond executed in a form acceptable to the Control Officer for the approved Dust Control Permit as the principal with a corporation authorized to transact surety business in the State of Nevada. The Owner and/or Operator shall condition the surety bond upon the faithful performance of all other conditions of the permit and faithful compliance with the provisions of these Regulations. The surety bond shall remain in effect until the Construction Activity specified in the said Dust Control Permit is complete and the department closes the said Dust Control Permit. The amount of each bond required by this section shall equal the estimated cost of implementing the dust Control Measures set forth in the approved Dust Control Permit plus an additional 10% of the estimated cost to cover contingencies, as determined by the department.

94.7.3.4 Any Person aggrieved by a decision of the Control Officer pursuant to this section may appeal in accordance with Section 7 of these Regulations.

94.7.4 Corrective Action Orders (CAO) and Notices of Violation (NOV).

- 94.7.4.1 If it is found that any provision of Section 94, a Dust Control Permit, or a Dust Mitigation Plan has not been complied with, the Control Officer may issue a Corrective Action Order to any Owner and/or Operator or other person that they may be in violation of these Regulations and said finding shall be corrected within a specified period of time, dependent upon the scope and extent of the problem.
- 94.7.4.2 The failure to comply with the corrective measures of a Corrective Action Order within the specified period of time shall be a violation of this section of the Air Quality Regulations.
- 94.7.4.3 Regardless of whether a Corrective Action Order has been issued, the Control Officer may issue a Notice of Violation upon determination that the Owner and/or Operator is out of compliance with any provisions of this section of the Air Quality Regulations, a Dust Control Permit, a Dust Mitigation Plan, or upon the failure to comply with a previously issued Corrective Action Order.
- 94.7.4.4 The Control Officer, or his/her designee shall be further empowered to enter upon any said land where any loose soil or dust problem exists, and to take such remedial and corrective action as may be deemed appropriate to cope with and relieve, reduce, or remedy the loose soil, dust situation or condition, when the Owner and/or Operator fails to do so.
- 94.7.4.4.1 Any cost incurred in connection with any such remedial or corrective action by the department or any person acting for the department shall be reimbursed by the land Owner and/or Operator. If these costs are not reimbursed the Control Officer may request a lien be placed on the subject lands that shall remain in full force and effect until any and all such costs have been collected.

94.7.4.5 Any additional Control Measures prescribed by the Control Officer in a Corrective Action Order, issued to the holder of a Dust Control Permit, shall become a part of that permit's Dust Mitigation Plan.

94.7.5 **Dust Control Monitor.**

- 94.7.5.1 Any Construction project having 50 acres or more of actively disturbed soil at any given time shall be required by the Control Officer to have in place an individual designated as the Dust Control Monitor with full authority to ensure that dust Control Measures are implemented, including inspections, record keeping, deployment of resources, and shut-down or modification of Construction Activities as needed. This individual shall be listed on the Construction Site Dust Control Monitor form provided in Attachment 1 of the Construction Activities Dust Control Handbook.
- 94.7.5.2 A Dust Control Monitor shall also be required for individually permitted projects that have less than fifty (50) acres of actively disturbed soil if they are:
 - (a) under common control and are either contiguous or separated by a public or private roadway and cumulatively have fifty (50) acres or more of actively disturbed soil; or
 - (b) under common control and not contiguous, but are contained within a common master-planned community and cumulatively have fifty (50) acres or more of disturbed soil.
- 94.7.5.3 The Dust Control Monitor shall be present at all times Construction Activities occur on the project site and shall devote the majority of his/her time specifically to managing dust prevention and control on the site.
- 94.7.5.4 The requirement for a Dust Control Monitor shall lapse when:
 - (a) the area of actively disturbed soil becomes less than fifty (50) acres;
 - (b) the previously disturbed areas have been stabilized in accordance with the requirements of these Regulations; and,
 - (c) the stabilization has been approved and the acreage verified by the Control Officer.
- 94.7.5.5 A Dust Control Monitor shall be considered qualified when he/she has met the following minimum qualifications:
 - (a) successfully completed the Basic Dust Control Class;
 - (b) successfully completed the Dust Control Monitor Class;
 - (c) two years of experience in the Construction industry; and,
 - (d) successfully completed a course that certifies him/her in Visual Emissions Evaluation (VEE) that has been approved or is conducted by the Control Officer.

94.7.5.6 For a Dust Control Monitor to maintain his/her certification he/she must successfully complete the Dust Control Monitor class at least once every three years.

94.7.6 **Dust Control Class.**

- 94.7.6.1 The Construction site superintendent or other designated on-site representative of the project developer and all Construction site supervisors and foremen shall be required to have successfully completed a Dust Control Class.
- 94.7.6.2 Water truck and water pull driver(s) for each Construction project shall be required to have successfully completed a Clark County Department of Air Quality and Environmental Management Dust Control Class.
- 94.7.6.3 All individuals required to attend and successfully complete the Dust Control Class shall do so at least once every three years.
- 94.7.6.4 Construction site workers and equipment operators, may be required to attend a Dust Control Class as a remedial or corrective measure.

94.7.7 Signage Requirements.

- 94.7.7.1 For each Dust Control Permit issued where the project site is less than or equal to ten (10) acres, or for Trenching projects between one hundred (100) feet and one (1) mile in length, or for demolition of a structure totaling one thousand (1,000) square feet or more, the permittee shall install a sign on the project site prior to commencing Construction activity that is visible to the public and measures, at minimum, four (4) feet wide by four (4) feet high, conforming to department policy on Dust Control Permit Design and Posting of Signage listed in Attachment 4 of the Construction Activities Dust Control Handbook.
- 94.7.7.2 For each Dust Control Permit issued where the project site is over ten (10) acres, or for Trenching projects aggregating one (1) mile or greater in length, the permittee shall install a sign on the project site prior to commencing Construction Activity and visible to the public and measures, at minimum, eight (8) feet wide by four (4) feet high, conforming to department policy on Dust Control Permit Design and Posting of Signage listed in Attachment 4 of the Construction Activities Dust Control Handbook.
- 94.7.7.3 Projects shorter than two (2) weeks in duration may request a waiver of the requirement of posting a Dust Control Permit Sign.

94.7.8 **Record Keeping.**

- 94.7.8.1 On a site having a Dust Control Permit a written record of self-inspection shall be made each day soil disturbing work is conducted. The "Record of Daily Dust Control" form provided in Appendix A of the Construction Activities Dust Control Handbook, or other written record that provides at a minimum the same information, shall be completed.
- 94.7.8.2 Records of Construction site self-inspections shall be kept for a minimum of one (1) year or for six (6) months beyond the project duration, whichever is longer. Self-inspection records include daily inspections for crusted or damp soil, trackout conditions and cleanup measures, daily water usage, Dust Suppressant application records, etc.
- 94.7.8.3 For Control Measures involving chemical or organic soil stabilization, records shall indicate the type of product applied, vendor name, label instructions for approved usage, and the method, frequency, concentration, and quantity of application.

94.8 Soil Stabilization Standards.

- 94.8.1 All permittees, contractors, Owners, operators, or other persons involved in Construction Activities shall employ Control Measures as set forth in the Construction Activities Dust Control Handbook.
- 94.8.2 One or a combination of the following methods shall be used to maintain dust control on all disturbed soils on Construction sites and staging areas:
 - (a) The soil shall be maintained in a sufficiently damp condition to prevent loose grains of soil from becoming dislodged when the disturbed soil is tested using the Drop Ball Test outlined in Subsection 94.12.5; or
 - (b) The soil shall be crusted over by application of water, as demonstrated by the Drop Ball Test outlined in Subsection 94, 12.5; or
 - (c) The soil shall be completely covered with clean gravel or treated with a Dust Suppressant approved by the Control Officer, to the extent necessary to pass a Drop Ball Test outlined in Subsection 94.12.5.
- 94.8.3 When a Construction site or part thereof becomes inactive for a period of thirty (30) days or longer, long-term stabilization shall be implemented within ten (10) days following the cessation of active operations.
- 94.8.4 Stockpiles located within one hundred (100) yards of occupied buildings shall not be constructed over eight (8) feet in height.
- 94.8.5 Stockpiles over eight (8) feet high shall have a road bladed to the top to allow water truck access or shall have a sprinkler irrigation system installed, used and maintained.

94.9 Best Available Control Measures (BACM)

- 94.9.1 Any person who engages in a Construction activity as defined in this regulation shall employ BACM for the purpose of dust control.
- 94.9.2 All Control Measures that are necessary to maintain soil stability as well those listed in an approved Dust Mitigation Plan, shall be implemented twenty four (24) hours a day, seven (7) days a week, until the permit is closed in accordance with Subsection 94.6.3(c).
- 94.9.3 In the event there are wind conditions that cause Fugitive Dust Emissions; in excess of 20% Opacity using the Time Averaged Method or Intermittent Emissions Method, in excess of 50% Opacity using the Instantaneous Method, or one hundred (100) yards in length from the point of origin, in spite of the use of Best Available Control Measures, all Construction Activities that may contribute to these Emissions shall immediately cease. Water trucks and water pulls shall continue to operate under these circumstances, unless wind conditions are such that the continued operation of watering equipment cannot reduce Fugitive Dust Emissions or that continued equipment operation poses a safety hazard.
- 94.9.4 If a Dust Control Permit is not required, the Owners, operators, or any other person involved in Construction Activities shall employ Best Management Practices, as set forth in the Construction Activities Dust Control Handbook and comply with the soil stabilization standards listed in Subsections 94.8 and Emissions standards listed in Subsection 94.11.

94.10 **Construction Activities Violations.**

- 94.10.1 Any of the following circumstances constitute a violation of the Clark County Air Quality Regulations:
 - (a) Failure to obtain an approved Dust Control Permit before engaging in activities that disturb or have the potential to disturb soils and/or cause or have the potential to cause Fugitive Dust to enter the air.
 - (b) Failure to obtain an approved Dust Control Permit for all areas subject to Construction Activities.
 - (c) Conducting a Construction Activity as defined by Subsection 94.2 for which no specified control option is indicated in the approved Dust Control Permit or the Dust Mitigation Plan.
 - (d) Failure to perform any duty to allow or carry out an inspection, entry, or monitoring activity required by the department.
 - (e) Failure to renew or obtain a new permit, prior to a Dust Control Permit expiring, provided the site does not meet the exemption requirements for a Dust Control Permit as defined in Subsection 94.4.2.

- (f) Failure to implement any item that is listed as a "Requirement" in the Best Management Practices section of the Construction Activities Dust Control Handbook for an applicable Construction Activity.
- (g) Failure to implement any Best Management Practice listed in an approved Dust Control Permit / Dust Mitigation Plan.
- (h) Failure to maintain static (not actively worked) project soils with adequate surface crusting to prevent wind erosion as measured by test method "Soil Crust Determination (The Drop Ball Test)" in Subsection 94.12.5, or alternative Control Measures approved in the Dust Mitigation Plan.
- (i) Failure to comply with any record keeping requirements of this section.
- (j) Failure to maintain project haul routes or haul roads in a stable condition as measured by the Intermittent Emissions test method outlined in Section 94.12.3.
- (k) Failure to have a Dust Control Monitor in place, per Subsection 94.7.5, for a Construction project.
- (I) Allowing Fugitive Dust Emissions to exceed the standards set forth in Subsections 94.11.1 through 94.11.4.
- (m) Using a dry rotary brush or blower device without sufficient water to limit Emissions per Subsection 94.11.5.
- (n) Allowing mud or dirt to be tracked out onto a Paved road that exceed the standards set forth in Subsection 94.11.6.
- (o) Failure to comply with any other provision of this section.

94.11 Emission Standards.

- 94.11.1 No person shall cause or permit the handling, transporting, or storage of any material in a manner that allows visible Emissions of Particulate Matter to exceed: 20% Opacity using the Time Averaged Method or the Intermittent Emissions Method; 50% Opacity using the Instantaneous Method. These test methods are set forth in Subsection 94.12.
- 94.11.2 No person shall cause or permit the handling, transporting, or storage of any material in a manner that allows a dust plume that extends one hundred (100) yards or more, horizontally or vertically, from the point of origin.
- 94.11.3 Where a Dust Control Permit is required and has not been issued or in the event Best Available Control Measures have not been fully implemented, no person shall cause or permit the handling, transportation, or storage of any material in a manner that exceeds the limits listed in any one of the following:

- (a) The limits set forth in Subsection 94.11.1; or
- (b) Allow a dust plume to extend more than one hundred (100) feet, horizontally or vertically, from the point of origin; or
- (c) Allow a dust plume to cross a property line.
- 94.11.4 Visible Emissions from abrasive blasting shall be limited to no more than an average of 40% Opacity for any period aggregating three (3) minutes in any sixty (60) minute period, utilizing the test method set forth in Subsection 94.12.
- 94.11.5 The use of dry rotary brushes and blower devices for removal of deposited mud/dirt trackout from a Paved road is prohibited, unless sufficient water is applied to limit the visible Emissions to an Opacity of not greater than: 20% Opacity using the Time Averaged Method or Intermittent Emissions Method; 50% Opacity using the Instantaneous Method. These test methods are set forth in Subsection 94.12. The use of rotary brushes without water is prohibited.
- 94.11.6 Mud or dirt shall not be allowed to be tracked out onto a Paved road where such mud or dirt extends fifty (50) feet or more in cumulative length from the point of origin or allow any trackout to accumulate to a depth greater than 0.25 inch. Notwithstanding the preceding, all accumulations of mud or dirt on curbs, gutters, sidewalks, or Paved roads including trackout less than fifty (50) feet in length and 0.25 inch in depth, shall be cleaned and maintained to eliminate emissions of Fugitive Dust. At a minimum all trackout must be cleaned up by the end of the workday or evening shift, as applicable.

94.12 **Test Methods**

94.12.1 Visual Determination of Opacity of Emissions from Sources of Visible Emissions.

Applicability: This method is applicable for the determination of the Opacity of Emissions from sources of visible Emissions the Time Averaged Method requires averaging of visible Emission readings over a specific time period to determine the Opacity of visible Emissions. The Time Averaged Method is applicable to continuous Emissions sources. The Intermittent Emissions Method requires averaging a set number of visible Emissions readings to determine the Opacity of visible Emissions. The Intermittent Emissions Method is applicable to intermittent Emissions. The Intermittent Emissions Method is applicable to intermittent Emissions sources. The Intermittent Emissions Method is applicable to intermittent Emissions sources. The Instantaneous Method sets an Opacity limit that shall not be exceeded at any time. The Instantaneous Method is applicable to any Emissions source and is a non-federal requirement.

Principle: The Opacity of Emissions of a source of visible Emissions is determined visually by an observer who has current_certification_approved

by the Control Officer, as a qualified Visible Emissions Evaluator, using US EPA Method 9.

Procedures: A qualified Visible Emissions Evaluator shall use the procedures set forth in Subsections 94.12.2, 94.12.3, and 94.12.4 for visually determining the Opacity of Emissions.

- 94.12.2 Time Averaged Method: These procedures is for evaluating continuous Fugitive Dust Emissions and are for the determination of the Opacity of continuous Fugitive Dust Emissions by a qualified observer. Continuous Fugitive Eust Emissions sources include activities that produce Emissions continuously during operations such as earthmoving, grading, and Trenching. Emissions from these types of continuous activities are considered continuous even though speed of the activity may vary and Emissions may be controlled to 100%, producing no visible emissions, during parts of the operation. The qualified observer should do the following:
 - (a) Position: Stand at a position at least twenty (20) feet from the Fugitive Dust source in order to provide a clear view of the Emissions with the sun oriented in the 140° sector to the back. Consistent as much as possible with maintaining the above requirements, make Opacity observations from a position such that the line of sight is approximately perpendicular to the plume and wind direction. The observer may follow the Fugitive Dust plume generated by mobile earth moving equipment, as long as the sun remains oriented in the 140° sector to the back. As much as possible, do not include more than one plume in the line of sight at one time.
 - (b) Field Records: Record the name of the site, Fugitive Dust source type (e.g., earthmoving, grading, trenching), method of control used, if any, observer's name, certification data and affiliation, and a sketch of the observer's position relative to the Fugitive Dust source. Also, record the time, estimated distance to the Fugitive Dust source location, approximate wind direction, estimated wind speed, description of the sky condition (presence and color of clouds), observer's position relative to the Fugitive Dust source and type of background on the visible Emission observation when Opacity readings are initiated and completed.
 - (c) Observations: Make Opacity observations, to the extent possible, using a contrasting background that is perpendicular to the line of sight. Make Opacity observations at a point just beyond where material is no longer being deposited out of the plume (normally three (3) feet above the surface from which the plume is generated). The initial observation should begin immediately after a plume has been created above the surface involved. Do not look continuously at the plume, but instead observe the plume momentarily at 15-second intervals. For Fugitive Dust from earthmoving equipment, make Opacity observations at a point just beyond where material is not being deposited out of the

plume (normally three (3) feet above the mechanical equipment generating the plume).

- (d) Recording Observations: Record the Opacity observations to the nearest 5% every fifteen (15) seconds on an observational record sheet. Each momentary observation recorded represents the average Opacity of Emissions for a fifteen (15) second period. If a multiple plume exists at the time of an observation, do not record an Opacity reading. Mark an "x" for that reading. If the equipment generating the plume travels outside of the field of observation, resulting in the inability to maintain the orientation of the sun within the 140° sector or if the equipment ceases operating, mark an "x" for the fifteen (15) second interval reading. Readings identified as "x" shall be considered interrupted readings.
- (e) Data Reduction For Time-Averaged Method: For each set of twelve (12) or twenty four (24) consecutive readings, calculate the appropriate average Opacity. Sets shall consist of consecutive observations, however, readings immediately preceding and following interrupted readings shall be deemed consecutive and in no case shall two sets overlap, resulting in multiple violations.
- 94.12.3 Intermittent Emissions Method: This procedure is for evaluating intermittent Fugitive Dust Emissions: This procedure is for the determination of the Opacity of intermittent Fugitive Dust Emissions by a qualified observer. Intermittent Fugitive Dust Emissions sources include activities that produce Emissions intermittently such as screening, dumping, and stockpiling where predominant Emissions are produced intermittently. The qualified observer should do the following:
 - (a) Position: Stand at a position at least twenty (20) feet from the Fugitive Dust source in order to provide a clear view of the Emissions with the sun oriented in the 140° sector to the back. Consistent as much as possible with maintaining the above requirements, make Opacity observations from a position such that the line of sight is approximately perpendicular to the plume and wind direction. As much as possible, do not include more than one plume in the line of sight at one time.
 - (b) Field Records: Record the name of the site, Fugitive Dust source type (e.g., pile, material handling, transfer, loading, sorting), method of control used, if any, observer's name, certification data and affiliation, and a sketch of the observer's position relative to the Fugitive Dust source. Also, record the time, estimated distance to the Fugitive Dust source location, approximate wind direction, estimated wind speed, description of the sky condition (presence and color of clouds), observer's position relative to the Fugitive Dust source, and color of the plume and type of background on the visible emission observation when Opacity readings are initiated and completed.

- (c) Observations: Make Opacity observations, to the extent possible, using a contrasting background that is perpendicular to the line of sight. Make Opacity observations at a point just beyond where material is no longer being deposited out of the plume (normally three (3) feet above the surface from which the plume is generated). Make two observations per plume at the same point, beginning with the first reading at zero (0) seconds and the second reading at five (5) seconds. The zero (0) second observation should begin immediately after a plume has been created above the surface involved.
- (d) Recording Observations: Record the Opacity observations to the nearest 5% on an observational record sheet. Each momentary observation recorded represents the average Opacity of Emissions for a five (5) second period.
- (e) Repeat Subsection 94.12.3(c) of this regulation and Subsection 94.12.3(d) of this regulation until you have recorded a total of 12 consecutive Opacity readings. This will occur once six intermit plumes on which you are able to take proper readings have been observed. The 12 consecutive readings must be taken within the same period of observation but must not exceed 1 hour. Observations immediately preceding and following interrupted observations can be considered consecutive.
- (f) Average the 12 Opacity readings together. If the average Opacity reading equals 20% or lower, the source is in compliance with the averaged method Opacity standard described in this Section.
- 94.12.4 Instantaneous Method: This is a non-federal procedure for evaluation of Fugitive Dust Emissions: This procedure is for the instantaneous determination of the Opacity of Fugitive Dust Emissions by a qualified observer. This method is a Clark County local requirement and is not submitted as part of the applicable State Implementation Plan. The qualified observer should do the following:
 - (a) Position: Stand at a position at least twenty (20) feet from the Fugitive Dust source in order to provide a clear view of the Emissions with the sun oriented in the 140° sector to the back. Consistent as much as possible with maintaining the above requirements, make Opacity observations from a position such that the line of sight is approximately perpendicular to the plume and wind direction. The observer may follow the Fugitive Dust plume generated by mobile earth moving equipment, as long as the sun remains oriented in the 140° sector to the back. As much as possible, do not include more than one plume in the line of sight at one time.
 - (b) Field Records: Record the name of the site, Fugitive Dust source type (e.g., earthmoving, grading, storage pile, material handling, transfer, loading, sorting), method of control used, if any, observer's name, certification data and affiliation, and a sketch of the observer's position

relative to the Fugitive Dust source. Also, record the time, estimated distance to the Fugitive Dust source location, approximate wind direction, estimated wind speed, description of the sky condition (presence and color of clouds), observer's position relative to the Fugitive Dust source, and color of the plume and type of background on the visible emission observation when Opacity readings are initiated and completed.

- (c) Observations: Make Opacity observations, to the extent possible, using a contrasting background that is perpendicular to the line of sight. Make Opacity observations at a point just beyond where material is no longer being deposited out of the plume (normally three (3) feet above the surface from which the plume is generated).
- (d) Recording Observations: Record the Opacity observations to the nearest 5%.
- (e) Data Reduction for Instantaneous Regulations: Evaluate all observations for conformance with the instantaneous regulation.
- 94.12.5 Soil Crust Determination (The Drop Ball Test):
 - (a) Drop a steel ball with a diameter of 0.625 (5/8th) inch and a mass ranging from 0.56-0.60 ounce from a distance of one (1) foot directly above the soil surface. If blowsand is present, clear the blowsand from the surfaces on which the soil crust test method is conducted. Blowsand is defined as thin deposits of loose uncombined grains covering less than 50% of a project site that have not originated from the representative surface being tested. If material covers a visible crust, which is not blowsand, apply the test method in Subsection 90.4.1.3 (Determination of Threshold Friction Velocity) of this regulation to the loose material to determine whether the surface is stabilized.

A sufficient crust is defined under the following conditions: once a ball has been dropped according to Subsection 90.4.1.1 of this regulation, the ball does not sink into the surface, so that it is partially or fully surrounded by loose grains and, upon removing the ball, the surface upon which it fell has not been pulverized, so that loose grains are visible.

(b) Randomly select each representative disturbed surface for the drop ball test by using a blind "over the shoulder" toss of a throwable object (e.g., a metal weight with survey tape attached). Using the point of fall as the lower left hand corner, measure a one (1) foot square area. Drop the ball three times within the 1-foot by 1-foot square survey area, using a consistent pattern across the survey area. The survey area shall be considered to have passed the Soil Crust Determination Test if at least two out of the three times that the ball was dropped, the results met the criteria in Subsection 90.4.1.1(a) of this regulation. Select at least two other survey areas that represent a random portion of the overall disturbed conditions of the site, and repeat this procedure. If the results meet the criteria of Subsection 90.4.1.1(a) of this regulation for all of the survey areas tested, then the site shall be considered to have passed the Soil Crust Determination Test and shall be considered sufficiently crusted.

(c) At any given site, the existence of a sufficient crust covering one portion of the site may not represent the existence or protectiveness of a crust on another portion of the site. Repeat the soil crust test as often as necessary on each portion of the overall conditions of the site using the random selection method set forth in Subsection 90.4.1.1(b) of this regulation for an accurate assessment.

History: Initial adoption: June 22, 2000

⁻⁻⁻⁻⁻

Amended: November 16, 2000; March 18, 2003; June 3, 2003; July 1, 2004; January 21, 2020.

Appendix C: Dust Alerts Issued for April 11, 2022 and Compliance Information

A Dust Advisory and Construction Notice was issued for April 11, 2022, due to high winds from a frontal passage lofting and transporting dust from the Mojave Desert into Clark County, Nevada. Table 1 provides Construction Site Investigation information from April 11, 2022. All enforcement and compliance documentation associated with the April 11 high-wind dust event are also included in this Appendix.

Table 1. Construction site investigation inspections that took place on April 11, 2022, associated with the Dust Advisory.

Permit No.	Project Name	Inspection No.	Inspected By	Туре	Inspected On	Action Taken
53937	Pearson Park Splash Pad & Site Improvements	102078	Richard Wyse	Dust Advisory	4/11/2022 15:15	Verified Permittee Received CN/DA
54334	Meadowbrook West	102076	Richard Wyse	Dust Advisory	4/11/2022 14:30	Verified Permittee Received CN/DA
53906	Explore Charter School	102075	Richard Wyse	Dust Advisory	4/11/2022 14:15	Verified Permittee Received CN/DA
51858	Skye Canyon West Phase 3B And 3C	102073	Andrew Kirk	Dust Advisory	4/11/2022 14:14	Verified Permittee Received CN/DA
54645	The Village At The Womens & Children's Campus	102072	Richard Wyse	Dust Advisory	4/11/2022 13:45	Verified Permittee Received CN/DA
53987	Summerlin Village 25 Parcel F	102068	Andrew Kirk	Dust Advisory	4/11/2022 12:48	Verified Permittee Received CN/DA
52664	Summerlin Village 25 Parcel D	102067	Andrew Kirk	Dust Advisory	4/11/2022 12:31	Verified Permittee Received CN/DA
51608	Savanna	102066	Andrew Kirk	Dust Advisory	4/11/2022 12:09	Verified Permittee Received CN/DA
51715	Summerlin Village 21 Parcel C and D	102065	Andrew Kirk	Construction Notice	4/11/2022 11:49	Verified Permittee Received CN/DA
54257	Silverado Ranch Detention Basin and Outfall Facilities Project	102064	Allan Gutierrez	Construction Notice	4/11/2022 11:30	Verified Permittee Received CN/DA
54508	Lake Mead West Apartments	102080	Richard Wyse	Dust Advisory	4/11/2022 11:00	No Action Taken
54397	Commons At Blue Diamond	102063	Allan Gutierrez	Construction Notice	4/11/2022 10:59	Verified Permittee Received CN/DA
53581	Becknell Industrial Buildings 1 & 2	102062	Allan Gutierrez	Construction Notice	4/11/2022 10:43	Verified Permittee Received CN/DA

••• Appendix C. Dust Alerts Issues for April 11, 2022

53152	Rainbow and Blue Diamond Southeast	102061	Allan Gutierrez	Construction Notice	4/11/2022 10:28	Verified Permittee Received CN/DA
51954	Buffalo Pebble	102060	Allan Gutierrez	Construction Notice	4/11/2022 10:14	Verified Permittee Received CN/DA
52722	Buffalo & Windmill - 1&2	102059	Allan Gutierrez	Construction Notice	4/11/2022 9:59	Verified Permittee Received CN/DA
53905	Buffalo & Mesa Verde Unit 1-2	102058	Allan Gutierrez	Construction Notice	4/11/2022 9:47	Verified Permittee Received CN/DA
54621	Durango Station	102057	Allan Gutierrez	Construction Notice	4/11/2022 9:29	Verified Permittee Received CN/DA
50831	Complaint #71701	102079	Andrew Kirk	Complaint	4/11/2022 15:34	No Action Taken
54694	Complaint #71700	102099	Allan Gutierrez	Complaint	4/11/2022 15:18	No Action Taken
54977	Complaint #71698	102077	Andrew Kirk	Complaint	4/11/2022 14:55	Issued NON With Possible NOV
54715	Complaint #71695	102074	Allan Gutierrez	Complaint	4/11/2022 13:30	Issued NON With Possible NOV

Compliance and Enforcement Documentation from the **April 11, 2022,** High-Wind Dust Event in Clark County, Nevada

Authors for each record are listed in the top-left corner of each page, if applicable.

2022-04-11 Dust Advisories

Scott Jelinek

From: Sent: To: Subject: aqdcp@clarkcountynv.gov Monday, April 11, 2022 7:54 AM Scott Jelinek Clark County Air Quality is Issuing a Dust Advisory

*

Clark County Department of Environment and Sustainability

Division of Air Quality

DUST ADVISORY

for Monday, April 11, 2022

Attention Dust Control Permit Holders, Contractors, and Stationary Sources

National Weather Service reports and the weather models used by the Division of Air Quality (DAQ) predict **sustained winds of 25-35 mph**, with **gusts of 40-50 mph**, from Monday afternoon into the night.

DAQ directs all permittees to immediately inspect their site(s) and employ Best Available Control Measures to stabilize all disturbed soils and reduce blowing dust. Permittees with multiple sites should contact each site superintendent to ensure compliance with the Clark County Air Quality Regulations.

BLASTING: This forecast is for wind gusts 40-50 mph or more. Project operators should not load blasting materials or perform any blasting operations. You are required to monitor National Weather Service reports for wind speeds; if wind gusts above 25 mph are forecast, discontinue charging additional blast holes. Limit the blast to holes charged at the time the wind report is made.

Compliance officers will inspect construction and stationary source sites during this episode to ensure Best Available Control Measures are being implemented. Any observed violation may receive a Notice of Violation.

It is important this Dust Advisory be sent to all supervisors, foremen, and subcontractors working on your construction projects and at PM₁₀ stationary sources.

Please direct questions about this Dust Advisory to a DAQ compliance supervisor at (702) 455-5942.

Issued: 4/11/2022

You are receiving this notice because you have asked to be on our mailing list or your e-mail address is listed as the point of contact on an active Dust Control Permit.

Emails:

- 00003 Lhoist Apex.eml
- 00004 CertainTeed Gypsum Manufacturing Inc.eml
- 00005 Lhoist Henderson.eml
- 00011 PABCO Building Products LLC.eml
- 00012 Wells Cargo Inc.eml
- 00019 Titanium Metals Corporation TIMET.eml
- 00083 Quarry 187 LLC.eml
- 00095 EMD Acquisition LLC.eml
- 00104 Las Vegas Paving Corp multiple facilities.eml
- 00108 Clark County Dept of Aviation McCarran Airport.eml
- 00114 99th Civil Engineering Squad Nellis AFB.eml
- 00138 Simplot Silica Products.eml
- 00372 Aggregate Industries SWR Inc Sloan.eml
- 00395 Republic Dumpco Inc Apex Regional Landfill.eml
- 00486 Las Vegas Rock Inc Rainbow Quarries.eml
- 00512 Nevada Ready Mix.eml
- 00527 Boulder City Disposal Inc Boulder City Landfill.eml
- 00540 SNL Sand LLC.eml
- 00587 Aggregate Industries SWR Inc Gowan.eml
- 00593 Georgia Pacific Gypsum LLC.eml
- 00662 CA Portland Cement Company NV Terminals Inc.eml
- 00693 CTC Crushing Cactus.eml
- 00868 H Lima Nevada LLC.eml
- 01087 Republic Services Transfer Station.eml
- 15189 Silver State Materials LLC.eml
- a 15195 Mel Clark Inc.eml
- 15362 Chase Stationary 1.eml
- 15387 Robertsons Ready Mix.eml
- **15694** Precision Aggregate Products LLC.eml
- 15726 Custom Building Products Company Inc.eml
- 15791 Sierra Ready Mix LLC.eml
- **15914 CEMEX Construction Materials South LLC.eml**
- 15928 Republic Silver State Disposal Inc.eml
- 16406 BLM Property Lease White Rock Road.eml
- a 16460 Monarch Mountain Minerals and Aggregates LLC.eml
- 17066 Boulder Sand and Gravel Inc.eml
- 17286 Gypsum Resources LLC Blue Diamond Hill Gypsum.eml
- 17400 American Eagle Ready Mix LLC.eml
- 17969 Spec Aggregates LLC.eml
- 17973 Target Construction Inc.eml

Scott Jelinek

From: Sent: To: Subject: aqdcp@clarkcountynv.gov Tuesday, February 22, 2022 8:42 AM Scott Jelinek Clark County Air Quality is Issuing a Dust Advisory

Clark County Department of Environment and Sustainability

Division of Air Quality

DUST ADVISORY

for Tuesday, February 22, 2022

Attention Dust Control Permit Holders, Contractors, and Stationary Sources

National Weather Service reports and the weather models used by the Division of Air Quality (DAQ) predict sustained winds 25-35 mph, with gusts of 40 mph, beginning Tuesday afternoon and lasting throughout the evening.

DAQ directs all permittees to immediately inspect their site(s) and employ Best Available Control Measures to stabilize all disturbed soils and reduce blowing dust. Permittees with multiple sites should contact each site superintendent to ensure compliance with the Clark County Air Quality Regulations.

BLASTING: This forecast is for wind gusts 40 mph or more. Project operators should not load blasting materials or perform any blasting operations. You are required to monitor National Weather Service reports for wind speeds; if wind gusts above 25 mph are forecast, discontinue charging additional blast holes. Limit the blast to holes charged at the time the wind report is made.

Compliance officers will inspect construction and stationary source sites during this episode to ensure Best Available Control Measures are being implemented. Any observed violation may receive a Notice of Violation.

It is important this Dust Advisory be sent to all supervisors, foremen, and subcontractors working on your construction projects and at PM_{10} stationary sources.

Please direct questions about this Dust Advisory to a DAQ compliance supervisor at (702) 455-5942.

Issued: 2/22/2022

You are receiving this notice because you have asked to be on our mailing list or your e-mail address is listed as the point of contact on an active Dust Control Permit.

2022-04-11 Construction Notice

AQDCP

From:	aqdcp@clarkcountynv.gov
Sent:	Friday, April 8, 2022 10:55 AM
To:	AQDCP
Subject:	Clark County Air Quality is Issuing a Construction Notice



Clark County Department of Environment and Sustainability

Division of Air Quality

CONSTRUCTION NOTICE

for Monday, April 11, 2022

Attention Dust Control Permit Holders, Contractors, and Stationary Sources

National Weather Service and the weather models used by the Division of Air Quality (DAQ) show the potential for high winds beginning Monday afternoon and lasting throughout the evening. The forecast is for sustained winds 20-25 mph, with gusts 30-35 mph.

DAQ directs all permittees to inspect their site(s) and employ Best Available Control Measures to stabilize all disturbed soils. Permittees with multiple sites should contact each site superintendent or dust monitor to ensure compliance with the Clark County Air Quality Regulations.

BLASTING: This forecast is for wind gusts 30-35 mph or more. Project operators should not load blasting materials or perform any blasting operations. You are required to monitor National Weather Service reports for wind speeds; if wind gusts above 25 mph are forecast, discontinue charging additional blast holes. Limit the blast to holes charged at the time the wind report is made.

2022-04-11 Enforcement



Clark County Nevada Department of Environment and Sustainability 4701 W Russell Road, Suite 200, Las Vegas, NV 89118 Phone (702) 455-5942 Fax (702) 383-9994 AirQuality@clarkcountynv.gov

RECEIPT

CHRISTIAN LAMPMAN, LVBD65 LLC 3635 S. FORT APACHE ROAD, UNIT 200-437 LAS VEGAS, NV 89147

Invoice #	Invoice Date	Invoice By	Invoice Type	Due Date
057424	10/31/2022	SHERRIER	DUST CONTROL ENFORCEMENT	11/30/2022

Quantity	Description	Fee Code	Fee	Total
	PENALTY CONTESTED	SPEN01		\$17,000.00
	12/28/2022 CHECK (0183)	PAYMENT		(\$17,000.00)

Notes:	NOV #9701, DCOP #54715, Appeal H/O 7/21/2022 Order to the HB on 7/26/2022	Subtotal:	\$17,000.00
		Paid:	(\$17,000.00)
		Adjustments:	\$0.00
		Balance Due:	\$0.00



DARRELL MOSER

LAS VEGAS, NV 89129

10550 W LONE MOUNTAIN RD

MEL CLARK INC

Clark County Nevada Department of Environment and Sustainability 4701 W Russell Road, Suite 200, Las Vegas, NV 89118 Phone (702) 455-5942 Fax (702) 383-9994 AirQuality@clarkcountynv.gov

RECEIPT

Facility Information - Source ID: 15195

MEL CLARK INCORPORATED

LONE MOUNTAIN PIT CORNER OF BARDEN ROAD AND LONE M LAS VEGAS, NV 89129

Invoice #	Invoice Date	Invoice By	Invoice Type	Due Date
055144	5/25/2022	SHERRIER	STATIONARY SOURCE ENFORCEMENT	6/24/2022

Quantity	Description	Fee Code	Fee	Total
	PENALTY UNCONTESTED	SPEN02		\$4,500.00
	06/06/2022 CHECK (14253)	PAYMENT		(\$4,500.00)

Paid:	(\$4,500.00)
Adjustments:	\$0.00
Balance Due:	\$0.00

2022-04-11 Compliance Logs



Clear Form

DAQ Representative: Jeff Robb, SAQS	DATE: 04/11/22
PERMITTEE: Lhoist North America of Arizona, Inc. PROJECT / LOCATION: Apex Plant TIME: 7:43 am CONTACT: Sean Brennan, Steve Pelletier, Alphonzo NOTES: Email	
PERMITTEE: CertainTeed Gypsum Manufacturing, Inc. PROJECT / LOCATION: GP Gypsum TIME: 7:44 am CONTACT: Michael Burgoyne, Alin Mot NOTES: Email	PERMIT/SOURCE ID #: 4
PERMITTEE: Lhoist North America of Arizona, Inc. PROJECT / LOCATION: Henderson TIME: 7:45 am CONTACT: Duane Surman, Justin Andrews NOTES: Email	PERMIT/SOURCE ID #: 5
PERMITTEE: PROJECT / LOCATION: TIME: CONTACT: NOTES:	
PERMITTEE: PABCO Building Products, LLC PROJECT / LOCATION: PABCO TIME: 7:46 am CONTACT: Emil Kopilovich, Luke Stewart, Sergio Ma NOTES: Email	PERMIT/SOURCE ID #: 11 azzocato

Clear Form



4701 W. Russell Road 2nd Floor Las Vegas, NV 89118-2231 Phone: (702) 455-5942 Fax: (702) 383-9994 Marci Henson, Director

DAQ Representative:	DATE :	/11/22
PERMITTEE: Wells Cargo, Inc.	PERMIT/SOURCE ID #:	12 and others
PROJECT / LOCATION: Wells Cargo, Inc.		
TIME: 7:47 am CONTACT: Trent Scarlett, James Lopez, Beau Wells		IN PERSON PHONE
NOTES: Email		
PERMITTEE: Titanium Metals Corporation	PERMIT/SOURCE ID #:	19
PROJECT / LOCATION: Henderson		
TIME: 7:50 am CONTACT: Alun Davies, Matt Torres, Nettie Joh	nson	IN PERSON D PHONE
NOTES: Email		
PERMITTEE: Las Vegas Paving Corp.	PERMIT/SOURCE ID #:	70 and others
PROJECT / LOCATION: Multiple locations included in this Source ID): 70	
TIME: 7:51 am CONTACT: Joi Hunt-Fish, Troy Hildreth		IN PERSON D PHONE
NOTES: Email		
PERMITTEE: Quarry 187, LLC	PERMIT/SOURCE ID #:	83
PROJECT / LOCATION: Quarry 187, LLC		
TIME: 7:52 am CONTACT: Lonnie OToole, A. McCaw, M. Beare		IN PERSON PHONE
NOTES: Email		
PERMITTEE: EMD Acquisition, LLC	PERMIT/SOURCE ID #	95
PROJECT / LOCATION: Borman Specialty Materials		
TIME: 7:53 am CONTACT: Keenan Sanders, Sonnia Lewandowski		IN PERSON PHONE
NOTES: Email		



Clear Form

DAQ Representative:	DATE : <u>04/</u>	11/22
PERMITTEE: Mccarran International Airport PROJECT / LOCATION: Mccarran International Airport TIME: 8:00 am CONTACT: Chuck Giesler, Michael Nelson NOTES: Email	PERMIT/SOURCE ID #:	108
PERMITTEE: 99th Civil Engineering Squadron PROJECT / LOCATION: Nellis AFB TIME: 8:01 am CONTACT: Nellis.air.quality@us.af.mil NOTES: Email	PERMIT/SOURCE ID #:	114
PERMITTEE: Simplot Silica Products PROJECT / LOCATION: Overton Plant TIME: 8:02 am CONTACT: Rex Simpson, Kirsta Kinsey NOTES: Email	PERMIT/SOURCE ID #:	138
PERMITTEE: Aggregate Industries SWR, Inc. PROJECT / LOCATION: Sloan Quarry TIME: 8:03 am CONTACT: William Snyder, Ken Kinnard, Deborah Hand NOTES: Email	PERMIT/SOURCE ID #:	372
PERMITTEE: Republic Services, Inc. PROJECT / LOCATION: Apex Landfill TIME: 8:04 am CONTACT: David Vossmer, Aaron Lund, Michael Dar NOTES: Email	PERMIT/SOURCE ID #:	395



Clear Form

DAQ Representative: Jeff Robb, SAQS	DATE :	/11/22
PROJECT / LOCATION: Same	PERMIT/SOURCE ID #:	486
TIME: 8:04 am CONTACT: Jason Richardson, Jeremy Adams NOTES: Email		IN PERSON D PHONE
PERMITTEE: Nevada Ready Mix PROJECT / LOCATION: Lone Mountain Plant	PERMIT/SOURCE ID #:	512 and others
TIME: 8:05 am CONTACT: Larry Miller NOTES: Email		IN PERSON D PHONE
	PERMIT/SOURCE ID #:	593
PROJECT / LOCATION: <u>Same</u> TIME: <u>8:15 am</u> contact: <u>Robert Cypher, B. Diliberto, M. Brow</u> NOTES: Email	n, R. lyer	IN PERSON PHONE
PERMITTEE: Quarry 187, LLC PROJECT / LOCATION: Cactus	PERMIT/SOURCE ID #:	693
TIME: 8:16 am CONTACT: T. Parriera, B. Mulligan NOTES: Email		IN PERSON PHONE
PERMITTEE: Republic Services, Inc.	PERMIT/SOURCE ID #	1087
PROJECT / LOCATION: Henderson Transfer Station TIME: 8:16 am CONTACT: B. Thornton, J. Preston, C. McFerguson NOTES: Email		IN PERSON PHONE



Clear Form

DAQ Representative:	DATE :	11/22
PROJECT / LOCATION: Same	PERMIT/SOURCE ID #:	
TIME: <u>8:17 am</u> CONTACT: <u>K. Nieman, S. Hughes</u> NOTES: Email		IN PERSON PHONE
PERMITTEE: Mel Clark Inc. PROJECT / LOCATION: Same	PERMIT/SOURCE ID #:	15195
TIME: 8:17 am CONTACT: D. Moser, J. Clark		IN PERSON D PHONE
PERMITTEE: Robertson's Ready Mix PROJECT / LOCATION: Multiple	PERMIT/SOURCE ID #:	15387
TIME: 8:18 am CONTACT: C. Jaggers, M. Orozco		IN PERSON D PHONE
PERMITTEE: Precision Aggregate Products, LLC PROJECT / LOCATION: Same	PERMIT/SOURCE ID #:	15694
TIME: 8:20 am CONTACT: T. Eaton NOTES: Email		IN PERSON D PHONE
PERMITTEE: Sierra Ready Mix	PERMIT/SOURCE ID #:	15791
PROJECT / LOCATION: Same TIME: 8:21 am CONTACT: L. Ware, S. Koceja, R. Lawshe, T. Bowles NOTES: Email	S	IN PERSON PHONE



Clear Form

DAQ Representative:	DATE :	/11/22
PERMITTEE: BLM Property Lease White Rock Road PROJECT / LOCATION: Same	PERMIT/SOURCE ID #:	16406
TIME: 8:22 am CONTACT: T. Taylor NOTES: Email		IN PERSON D PHONE
PERMITTEE: Monarch Mountain Minerals & Aggregates, Inc. PROJECT / LOCATION: Quikrete	PERMIT/SOURCE ID #:	16460
TIME: 8:23 am CONTACT: D. Porter		IN PERSON D PHONE
PERMITTEE: Gypsum Resources, LLC PROJECT / LOCATION: Blue Diamond Hill Gypsum	PERMIT/SOURCE ID #:	17286
TIME: 8:24 am CONTACT: J. Rhodes NOTES: Email		IN PERSON PHONE
PERMITTEE: Boulder City Landfill PROJECT / LOCATION: Same	PERMIT/SOURCE ID #:	527
TIME: 8:34 am CONTACT: J. Stubitz, R. Morello NOTES: Email		IN PERSON PHONE
PERMITTEE: SNL Sand, LLC PROJECT / LOCATION: Same	PERMIT/SOURCE ID #	540
TIME: 8:34 am CONTACT: V. Apple, Al Cicchetti via SNLsandman & NOTES: Email	& SNLmine	IN PERSON D PHONE



Clear Form

DAQ Representative: <u>Jeff Robb</u> , SAQS	DATE: 04/11/22
PERMITTEE: Aggregate Industries SWR, Inc. PROJECT / LOCATION: Gowan Plant TIME: 8:36 am CONTACT: J. Englehart, W. Snyder, D. Hart NOTES: Email	PERMIT/SOURCE ID #: <u>587</u> [] IN PERSON [] PHONE
PERMITTEE: California Portland Cement Co PROJECT / LOCATION: Nevada Terminals, Inc. TIME: 8:38 am CONTACT: S. Hughes, J. Padilla NOTES: Email	PERMIT/SOURCE ID #: <u>662</u> [] IN PERSON [] PHONE
PERMITTEE: American Eagle Ready Mix, LLC PROJECT / LOCATION: Same TIME: 8:39 am CONTACT: G. Stockton, P. Mahony NOTES: Email	PERMIT/SOURCE ID #: <u>666</u>
PERMITTEE: <u>H Lima, LLC</u> PROJECT / LOCATION: <u>Same</u> TIME: <u>8:40 am</u> CONTACT: <u>M. Lima via limamines</u> NOTES: Email	PERMIT/SOURCE ID #: 868
PERMITTEE: Chase Stationary I, LLC PROJECT / LOCATION: Wigwam TIME: 8:40 am CONTACT: E. Still NOTES: Email	PERMIT/SOURCE ID #: 15362



Clear Form

DAQ Representative:	DATE: 04/11/22
PERMITTEE: Custom Building Products Co., LLC PROJECT / LOCATION: Lone Mountain TIME: 8:42 am CONTACT: P. Wood NOTES: Email	PERMIT/SOURCE ID #: <u>15726</u>
PERMITTEE: CEMEX Construction Materials South, LLC PROJECT / LOCATION: Henderson TIME: 8:43 am CONTACT: G. Monger, S. Mate NOTES: Email	PERMIT/SOURCE ID #: 15914
PERMITTEE: Republic Services, Inc. PROJECT / LOCATION: Henderson Transfer Station TIME: 8:44 am CONTACT: C. Francis, J. Preston NOTES: Email	PERMIT/SOURCE ID #: <u>15928</u>
PERMITTEE: Boulder Sand and Gravel, Inc. PROJECT / LOCATION: West Hacienda TIME: 8:44 am CONTACT: S. Jenson, J. Jenson NOTES: Email	PERMIT/SOURCE ID #: 17066
PERMITTEE: Spec Aggregates, LLC PROJECT / LOCATION: Cheyenne TIME: 8:49 am CONTACT: t. Pierson, J. Raines NOTES: Email	PERMIT/SOURCE ID #: <u>17969</u>



Clear Form

DAQ Representative:	DATE: <u>04/11/22</u>
PROJECT / LOCATION: Henderson	PERMIT/SOURCE ID #: 17973 Image: Description of the second sec
NOTES: Email	
PERMITTEE: PROJECT / LOCATION:	PERMIT/SOURCE ID #:
TIME: CONTACT: NOTES:	
PERMITTEE:	
NOTES: PERMITTEE: PROJECT / LOCATION: TIME: CONTACT: NOTES:	



DAQ Representative: Ryan O'Connor / Camon Liddell	DATE: 04/11/22
PERMITTEE: Nevada Ready Mix PROJECT / LOCATION: Lone Mountain Complex	PERMIT/SOURCE ID #: 512
TIME: 11:35 am CONTACT: Larry Miller, RO (702) 429-4436	IN PERSON DHONE
NOTES: Limited active operations, water tuck observed on site. East e spoke with RO, Larry Miller, via telephone and he stated the is was already dispatched to the area.	
PERMITTEE: Wells Cargo Lone Mountain Plant	PERMIT/SOURCE ID #: 17749
PROJECT / LOCATION: Lone Mountain Complex	
TIME: 11:50 am CONTACT: N/A	IN PERSON DHONE
NOTES: Limited active operations, no dust issues observed.	
PERMITTEE: Robertson's Ready Mix	PERMIT/SOURCE ID #: 15262
PROJECT / LOCATION: Lone Mountain Complex	
тіме: <u>12:10 pm</u> солтаст: <u>N/A</u>	IN PERSON PHONE
NOTES: Operations active, no dust issues observed.	
Mal Clark Incorporated	15105
PERMITTEE: Mel Clark Incorporated	PERMIT/SOURCE ID #: 15195
PROJECT / LOCATION: Lone Mountain Complex	
TIME: 12:20 pm CONTACT: Darrell Moser, RO, (702) 499-4043	IN PERSON PHONE
NOTES: Operations active. Observed fugitive dust emissions associate loading. Water truck observed at 12:25 pm. At 12:30 spoke to T RO, Darrell Moser, and she stated he was currently operating th	aylor Silva, Scale Operator, to speak with the
PERMITTEE: Las Vegas paving Corporation Lone Mountain	permit/source id #: 105
PROJECT / LOCATION: Lone Mountain Complex	· · · · · · · · · · · · · · · · · · ·
TIME: 12:45 CONTACT: Troy Hildreth, RO, (702) 510-1278	IN PERSON DHONE
NOTES: Limited active operations. Observed continuous visible emissi vent malfunction during loading. At 1:02 pm loading ceased w 1:20 pm contacted RO to conduct lime silo emissions investig	hen emissions were observed by delivery driver. At



DAQ Representative: Ryan O'Connor / Camon Liddell	DATE:	11/22
PERMITTEE: Blue Diamond Hill Gypsum PROJECT / LOCATION: 8360 North Highway 159, Blue Diamond, NV 89	_ PERMIT/SOURCE ID #: _ 9004	17286
TIME: <u>1:37 pm</u> CONTACT: <u>N/A</u> NOTES: Operations shut down with the exception of a water truck. No		IN PERSON 🗌 PHONE
PERMITTEE:Las Vegas Paving - Blue Diamond PROJECT / LOCATION: 9325 South jones Blvd., Las Vegas, NV 8	_ permit/source id # : _ 99139	70
TIME: 2:15 pm CONTACT: N/A NOTES:Operations shut down. No dust issues observed.		IN PERSON D PHONE
PERMITTEE: Sierra Ready Mix - Sloan PROJECT / LOCATION: 13890 South Decatur Blvd., Sloan, NV	_ PERMIT/SOURCE ID #: _	1577
TIME: 2:35 pm CONTACT: N/A NOTES: Operations shut down. No dust issues observed.		IN PERSON PHONE
PERMITTEE: Aggregate Industries - Sloan PROJECT / LOCATION: 5300 Sloan Road, Sloan, NV	_ PERMIT/SOURCE ID #:	372
TIME: 2:40 pm CONTACT: N/A NOTES: Operations shut down. Observed commingled fugitive dust er issues observed.		IN PERSON D PHONE South of site. Minimal dust
PERMITTEE: American Eagle Ready Mix - Sloan PROJECT / LOCATION: 14355 Garza Street, Sloan, NV	_ PERMIT/SOURCE ID #:	17400
TIME: 2:45 pm CONTACT: NOTES: Operations shut down. No dust issues observed.		IN PERSON DHONE



DAQ Representative: Ryan O'Connor / Camon Liddell	DATE:
PERMITTEE: Robertson's Ready Mix - Sloan PROJECT / LOCATION: 14575 Arville Street, Sloan, NV TIME: 2:55 pm CONTACT: N?A NOTES: Limited operations and 2 active water trucks. No dust issues o	PERMIT/SOURCE ID #: 15302
PERMITTEE: Sierra Ready Mix - Jean PROJECT / LOCATION: Jean, NV TIME: 3:08 pm CONTACT: N/A NOTES: Limited operations. No dust issues observed.	PERMIT/SOURCE ID #: 15791
PERMITTEE: Jean/Roach Dry Lake Bed PROJECT / LOCATION: Jean, NV TIME: 3:20 pm CONTACT: N/A NOTES: Large plumes of dust observed. Photographs and videos in 4/1	PERMIT/SOURCE ID #: N/A IN PERSON PHONE 11/2022 NEAP folder.
PERMITTEE: Cemex construction Materials South PROJECT / LOCATION: 14998 Las Vegas Blvd. South, Las Vegas, NV TIME: 3:40 pm CONTACT: N/A NOTES: Limited operations. No dust issues observed.	PERMIT/SOURCE ID #: 15914
PERMITTEE: PROJECT / LOCATION: TIME: CONTACT: NOTES:	



DAQ Representative: Mike Murphy/Michael Newell	DATE :	/11/22
PERMITTEE: Quarry 187 PROJECT / LOCATION: Boulder City TIME: 11:38 am CONTACT: NOTES: Not operating, roads watered. No VE observed.		83
PERMITTEE: Monarch Mountain Minerals and Aggregates PROJECT / LOCATION: Boulder City TIME: 11:48 am CONTACT:		16460
PERMITTEE: Robertson's Ready Mix PROJECT / LOCATION: 160 Fourth St. TIME: 12:15 pm CONTACT:		1564
PERMITTEE: Las Vegas Paving PROJECT / LOCATION: Eastgate TIME: 12:25 pm contact: NOTES: Water truck and water pull active. Stockpiles/roads watered.		186
PERMITTEE: Boulder Sand and Gravel PROJECT / LOCATION: Hollywood Pit TIME: 1:08 pm CONTACT: NOTES: Crusher not operating, trucks were loading. Water pull active, not operating.	PERMIT/SOURCE ID #:	17066

Clear Form

DAQ Representative: Pat Ringgenberg	DATE: 04/11/22
PERMITTEE: Sierra Ready Mix PROJECT / LOCATION: Lamb/Smiley	permit/source id #: 500
TIME: 12:00 pm CONTACT: Roger Lawshe NOTES: No problems noted however I reminded Roger about the	high wind advisory. Agg plant not operating.
PERMITTEE: Apex Materials PROJECT / LOCATION: Apex	PERMIT/SOURCE ID #: 18132
TIME: ^{12:26} pm contact:	
NOTES: Plant not operating. Water truck was active. No VEs. 75 degrees, 15-20 mph winds from SW.	
PERMITTEE: Spec Aggregates	permit/source id #: 17969
project / location: <u>Apex</u>	
TIME: 12:36 pm CONTACT: Cayden	IN PERSON DHONE
NOTES: Plant not operating. Loading of haul trucks only. No probl wind advisory.	ems noted however I spoke with the foreman about the
PERMITTEE: L'Hoist	PERMIT/SOURCE ID #: <u>3</u>
PROJECT / LOCATION: Apex	
TIME: 1:15 pm CONTACT: Alphonso Heath	IN PERSON PHONE
NOTES: Some dust observed from a slope near the waste materia everything watered. He was aware of the wind advisory a one in the pit.	
PERMITTEE: Las Vegas Paving	PERMIT/SOURCE ID #: <u>3</u>
PROJECT / LOCATION:	
TIME: 1:00 pm CONTACT: Ray Schmidt	IN PERSON DHONE
NOTES: Plant shut down. Met Ray on site and spoke about the w watered. No problems.	ind advisory. He was operating the water pull. Site

Clear Form

DAQ Representative: Pat Ringgenberg	DATE: <u>04/11/22</u>
PERMITTEE: Western Mining	PERMIT/SOURCE ID #: 673
PROJECT / LOCATION:	
TIME: 1:50 pm CONTACT: Mike Martinez	IN PERSON PHONE
NOTES: I observed some dust from the trucks traveling over the sit water truck was operational. A loader also generated some gusting to 30 mph. I told Mike to keep up on watering the r	e dust when digging into the pile. The winds were
	PERMIT/SOURCE ID #: 868
PROJECT / LOCATION: Nevada Sunrise Land	
TIME: 3:05 pm CONTACT: Mike Jones	IN PERSON DHONE
NOTES: Gate open. Plant not operating and I did not see any dust i was about to leave the site for the day. Mountains obscure	
PERMITTEE: Pabco	PERMIT/SOURCE ID #: 11
PROJECT / LOCATION: 8000 E. Lake Mead Blvd.	
TIME: 3:30 pm CONTACT: Sergio Mazzocato	IN PERSON PHONE
NOTES: No problems noted. However I reminded Sergio about the	wind advisory.
PERMITTEE: LVP and N. 5th St. plants	PERMIT/SOURCE ID #: <u>various</u>
PROJECT / LOCATION: 5th/Gowan and Delhi	
TIME: 4:34 pm CONTACT:	🗌 IN PERSON 🔲 PHONE
NOTES: I took a quick drive around the area. All but American Eagl	
PERMITTEE: Boulder Sand & Gravel	PERMIT/SOURCE ID #: 16023
PROJECT / LOCATION: 3301 N. 5th St.	
TIME: 4:40 pm CONTACT:	IN PERSON PHONE
NOTES: Closed and no dust observed.	

2022-04-11 Construction Site Investigation Tables

Permit No.	Project Name	Inspection No.	Inspected By	Туре	Inspected On	Action Taken
		•				
53937	Pearson Park Splash Pad & Site Improvements	102078	Richard Wyse	Dust Advisory	4/11/2022 15:15	Verified Permittee Received CN/DA
54334	Meadowbrook West	102076	Richard Wyse	Dust Advisory	4/11/2022 14:30	Verified Permittee Received CN/DA
53906	Explore Charter School	102075	Richard Wyse	Dust Advisory	4/11/2022 14:15	Verified Permittee Received CN/DA
51858	Skye Canyon West Phase 3B And 3C	102073	Andrew Kirk	Dust Advisory	4/11/2022 14:14	Verified Permittee Received CN/DA
01000		102070		DustAurisory	4/11/2022 14:14	
54645	The Village At The Womens & Children's Campus	102072	Richard Wyse	Dust Advisory	4/11/2022 13:45	Verified Permittee Received CN/DA
53987	Summerlin Village 25 Parcel F	102068	Andrew Kirk	Dust Advisory	4/11/2022 12:48	Verified Permittee Received CN/DA
52664	Summerlin Village 25 Parcel D	102067	Andrew Kirk	Dust Advisory	4/11/2022 12:31	Verified Permittee Received CN/DA
51608	Savanna	102066	Andrew Kirk	Dust Advisory	4/11/2022 12:09	Verified Permittee Received CN/DA
01000	ouvumnu	102000		Bustriavioory	4,1172022 12:00	
51715	Summerlin Village 21 Parcel C and D	102065	Andrew Kirk	Construction Notice	4/11/2022 11:49	Verified Permittee Received CN/DA
	Silverado Ranch Detention Basin and Outfall Facilities					
54257	Project	102064		Construction Notice	4/11/2022 11:30	Verified Permittee Received CN/DA
54508	Lake Mead West Apartments	102080	Richard Wyse	Dust Advisory	4/11/2022 11:00	No Action Taken
E 4007		400000			4/44/0000 40 50	
54397	Commons At Blue Diamond	102063	Allah Gutlerrez	Construction Notice	4/11/2022 10:59	Verified Permittee Received CN/DA
53581	Becknell Industrial Buildings 1 & 2	102062	Allan Gutierrez	Construction Notice	4/11/2022 10:43	Verified Permittee Received CN/DA
53152	Rainbow and Blue Diamond Southeast	102061	Allan Gutierrez	Construction Notice	4/11/2022 10:28	Verified Permittee Received CN/DA
51954	Buffalo Pebble	102060	Allan Gutierrez	Construction Notice	4/11/2022 10:14	Verified Permittee Received CN/DA
50700	Duffels 8 Mindusill 190	100050			4/11/0000 0.50	
52722	Buffalo & Windmill - 1&2	102059	Allan Gutlerrez	Construction Notice	4/11/2022 9:59	Verified Permittee Received CN/DA
53905	Buffalo & Mesa Verde Unit 1-2	102058	Allan Gutierrez	Construction Notice	4/11/2022 9:47	Verified Permittee Received CN/DA
54621	Durango Station	102057	Allan Gutierrez	Construction Notice	4/11/2022 9:29	Verified Permittee Received CN/DA
50831	Complaint #71701	102079	Andrew Kirk	Complaint	4/11/2022 15:34	No Action Taken
54694	Complaint #71700	102099	Allan Gutierrez	Complaint	4/11/2022 15:18	No Action Taken
54977	Complaint #71698	102077	Andrew Kirk	Complaint	4/11/2022 14:55	Issued NON With Possible NOV
54715	Complaint #71695	102074	Allan Gutierrez	Complaint	4/11/2022 13:30	Issued NON With Possible NOV

2022-04-11 **Videos**

Camon & Ryan Jean Roach Dry Lake Bed 1.mp4











Camon & Ryan Jean Roach Dry Lake Bed 2.mp4







Mike Murphy Dry lake bed South of Boulder City 1.MOV





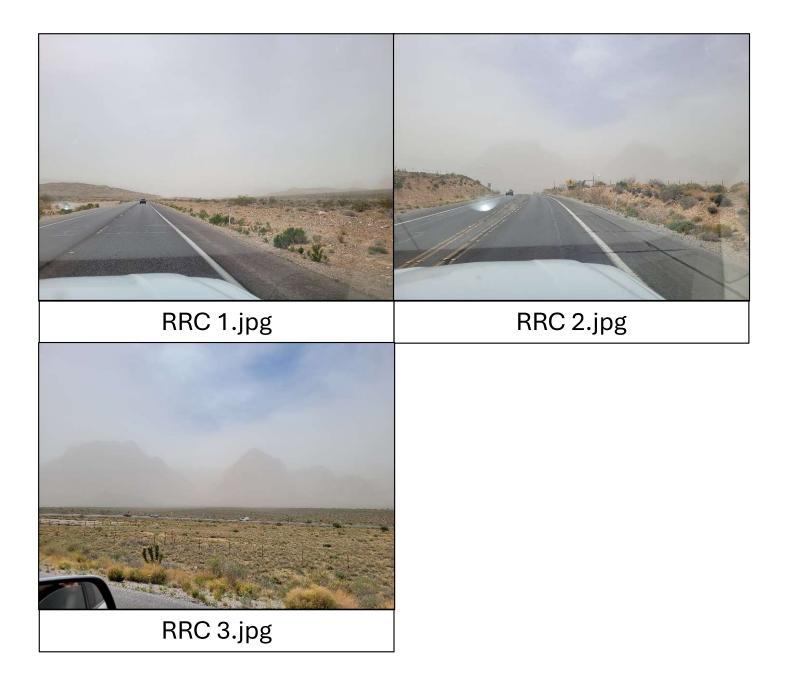


Mike Murphy Dry lake bed South of Boulder City 2.MOV

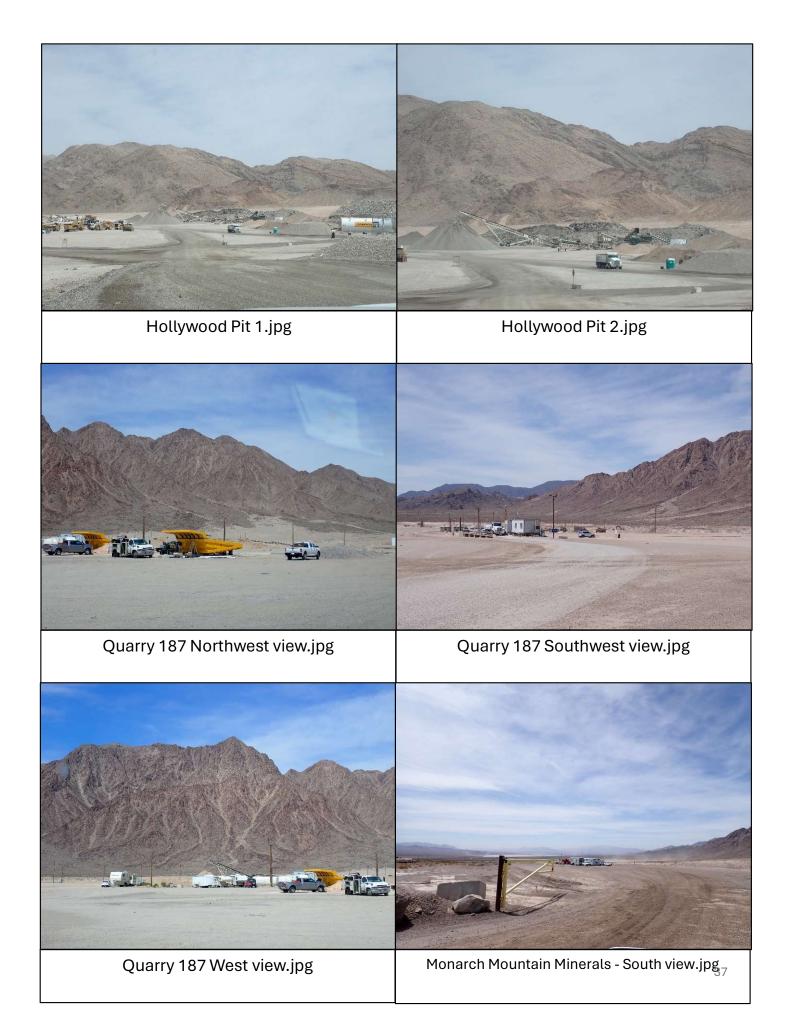


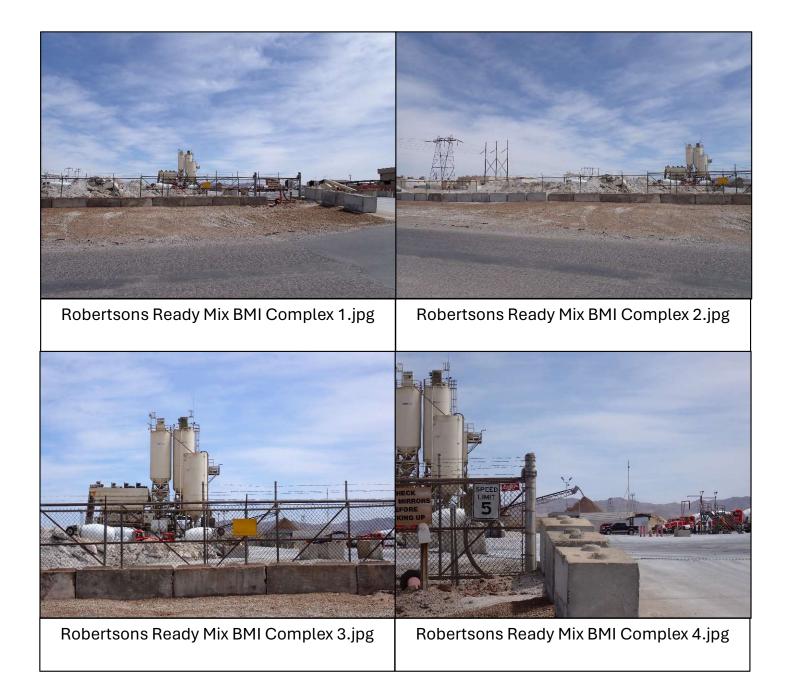
2022-04-11 Images





















Appendix D: Preparing for and Responding to Exceptional Events

This Appendix provides the Clark County Department of Environment and Sustainability's procedures for preparing for and responding to exceptional events.

DEPARTMENT OF AIR QUALITY PROCEDURE

AQP-018.R0

PREPARING FOR AND RESPONDING TO EXCEPTIONAL EVENTS

Revision 0

August 9, 2018

Division:	Administrative	Pages:	18
Effective Date:	8/15/2018	Revised Date:	N/A

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ACRONYMS AND ABBREVIATIONS

Acronyms	
AQI	Air Quality Index
AQS	Air Quality System
BACM	Best Available Control Measures
CFR	Code of Federal Regulations
DAQ	Clark County Department of Air Quality
EPA	U.S. Environmental Protection Agency
LEADS	Leading Environmental Analysis and Display System
ManVal	Manual Validation
NAAQS	National Ambient Air Quality Standards
PIA	DAQ Public Information Administrator
PIO	Clark County Public Information Officer
QA	quality assurance
USG	Unhealthy for Sensitive Groups

Abbreviations

mph	miles per hour
PM_{10}	particulate matter with a mean aerodynamic diameter of 10 microns or less
PM _{2.5}	particulate matter with a mean aerodynamic diameter of 2.5 microns or less

1.0 SCOPE/APPLICABILITY

This procedure describes the processes required to prepare for and respond to an exceptional event within Clark County, in conformance with Title 40, Part 51.930 of the Code of Federal Regulations (40 CFR 51.930). It outlines staff roles, responsibilities, and activities before, during, and after an exceptional event, and the training necessary to prepare for an event.

This procedure applies to all Clark County Department of Air Quality (DAQ) employees tasked with preparing for and responding to exceptional events, including preparation of exceptional event demonstration packages.

2.0 **DEFINITIONS**

Advisory: A written notification typically communicated electronically and issued when forecast conditions are favorable for pollutant levels to exceed the National Ambient Air Quality Standards (NAAQS) i.e., when the air quality conditions are, at a minimum, Unhealthy for Sensitive Groups (USG) on the U.S. Environmental Protection Agency's (EPA's) Air Quality Index (AQI)—or when high pollutant levels are apparent to the public even if the AQI levels only reach the Moderate level.

Air Quality Index (AQI): A system developed by the U.S. Environmental Protection Agency (EPA) to uniformly characterize levels of the major air pollutants regulated under the Clean Air Act. It comprises-six ranges: Good (0 - 50), Moderate (51 - 100), Unhealthy for Sensitive Groups (101 - 150), Unhealthy (151 - 200), Very Unhealthy (201 - 300), and Hazardous (301 - 500).

Air Quality System (AQS): An EPA database that contains measurements of criteria and hazardous air pollutant concentrations in all 50 states, the District of Columbia, Puerto Rico, and the Virgin Islands.

Alert: A written notification that is typically communicated electronically when air quality levels are expected to reach the Unhealthy level or higher on the AQI, or when high pollutant levels are apparent to the public even if AQI levels may only reach the USG level.

Best available control measures (BACM): The most effective measures for controlling fugitive particulate matter (PM) emissions, according to EPA guidance.

Construction Notice: A notice issued at predicted wind speeds below the dust advisory levels, that directs permittees to immediately inspect their sites, employ BACM, and avoid blasting operations at threshold wind speeds. It also informs recipients that compliance officers will inspect sites to ensure BACM is being implemented.

Data flag for exceptional events: Special data qualifier code from a list of exceptional event categories used to flag data submitted to AQS and to request its exclusion of the data.

EnviroFlash: An EPA system that sends daily e-mails containing air quality forecast information.

Exceptional event: An event that (1) affects air quality, (2) is not reasonably controllable or preventable, (3) is caused by human activity unlikely to recur at a particular location, or (4) is a natural event, and that is determined by the EPA administrator to be an exceptional event in accordance with 40 CFR 50.14. Exceptional events include, but are not limited to, high-wind, transported dust, wildfire, and fireworks events.

Informational flag (I-flag): Data code from a list of codes that provides information on data entered into AQS.

Leading Environmental Analysis and Display System (LEADS): DAQ's primary data management tool for continuous monitoring.

Manual Validation (ManVal): A database query tool that staff can use to view data, and to flag any suspect data by applying appropriate flags and justifying data validation.

Preliminary indication of an exceedance: A value in LEADS that exceeds the NAAQS before field checks, audits, and data validation are conducted.

Request flag (R-flag): Special data qualifier code from a list of exceptional event categories used to flag data submitted to AQS and request its exclusion for regulatory purposes.

Verified exceedance: A value in AQS that exceeds the NAAQS after field checks, required audits, and data validation are conducted.

3.0 ROLES AND RESPONSIBILITIES

This section details the roles and responsibilities of DAQ staff and management in preparing and responding to exceptional events. Specific responsibilities are described in detail in Section 4.0, "Procedures."

There are two general categories of health-based notifications issued by DAQ and Clark County: advisories and alerts. The focus of the advisory and alert processes is to provide prompt notification to affected or potentially affected communities whenever air quality concentrations exceed or are expected to exceed an applicable NAAQS. Advisories and alerts generally fall into one of the following categories, or a combination thereof: Dust Advisory/Alert, Fine Particulate Matter Advisory/Alert, Seasonal Ozone Advisory, Ozone Advisory/Alert, and Smoke Advisory/Alert. All advisories and alerts are primarily health-based notifications and are issued to the school district, health district, parks and recreation departments, local municipalities, local media, and interested members of the general public. Advisories and alerts include educational material and tips on how to limit exposure and mitigate emissions.

Construction Notices are issued at lower-level wind thresholds than Dust Advisories to dust control permit holders, contractors, and selected stationary sources and are primarily mitigationbased proactive measures. Constructions Notices are not public announcements of potential health risks, nor do they involve action of the PIA or PIO. After a Construction Notice is issued, a general advisory or an alert may be issued if changing weather conditions elevate the concern to health-based. During such instances, dust control permit holders, contractors, and selected stationary sources are issued a tailored form of the public advisory/alert with language specifically tailored to their operations and dust abatement requirements

3.1 Department Director

The director (or designee) will review and approve this procedure. It will be the director's responsibility to ensure department-wide implementation of, and adherence to, this procedure. When division managers are unavailable, the director will be responsible for approving the issuance or updating of an advisory or alert.

3.2 Monitoring Division

3.2.1 <u>Monitoring Division Manager</u>

The Monitoring Division manager is the primary approving authority for the issuance of an advisory or alert. If required, the manager (or designee) shall serve as the DAQ spokesperson during an exceptional event and follow the guidance in ADM-010, "News Media Policy."

3.2.2 Monitoring Division Staff

Monitoring Division staff are responsible for the following tasks, as assigned:

- 1. Monitoring weather and pollutant data, forecasting pollutant AQI levels for morning posts to the DAQ and EPA AirNow websites, posting updates throughout the day as necessary, and determining the potential severity of an event.
- 2. Coordinating with the Clark County Public Information Officer (PIO) and the DAQ Public Information Administrator (PIA) on preparing, issuing, updating, and posting advisories and alerts.
- 3. Coordinating with the Compliance and Enforcement Division on the merits of issuing a Construction Notice or Dust Advisory/Alert.
- 4. Making recommendations to the Monitoring Division manager on the issuance of advisories and alerts.
- 5. Performing audits as needed.
- 6. Confirming monitoring site exceedances recorded during an event, providing a final quality check of exceedance data, and flagging the data in AQS.
- 7. Collaborating with Planning Division staff in developing meteorological analyses of exceptional events.

3.3 Compliance and Enforcement Division

3.3.1 <u>Compliance and Enforcement Division Manager</u>

The Compliance and Enforcement Division manager (or designee) is responsible for:

- 1. Coordinating with the Dust/Asbestos Section supervisor and the Monitoring Division air quality forecaster on the necessity of issuing a Construction Notice or an advisory/alert during dust events.
- 2. Ensuring, through the Dust/Asbestos Section supervisor, that if a decision is made to issue a Construction Notice, it is e-mailed to all Dust Control Permit holders, contractors, and selected stationary sources with included language directing recipients to forward the notice to all applicable supervisors, foremen, and subcontractors working on a construction project or at the stationary source.
- 3. Ensuring, through the Dust/Asbestos Section supervisor, that if a decision is made to issue a Dust Advisory/Alert, a tailored form of that public advisory/alert shall be e-mailed to all Dust Control Permit holders, contractors, and selected stationary sources with language directing recipients to forward the advisory/alert to all applicable supervisors, foremen, and subcontractors working on a construction project or at the stationary source.
- 4. Deploying compliance officers to the field during a dust event to focus surveillance and enforcement activities on sources of fugitive dust and to gather documentation, such as photos, videos, and inspections.

3.3.2 Compliance and Enforcement Division Staff

Compliance and Enforcement Division staff are responsible for the following tasks, as assigned:

- 1. Conducting field inspections of potentially violating sources before and during a forecasted dust event.
- 2. Issuing alleged violators a Notice of Noncompliance, Warning Notice, or Notice of Violation, as warranted, and requesting sources employ best management practices to correct the alleged violation(s).
- 3. Ensuring that inspection forms and other documentation contain site-specific information related to field enforcement activities, including observations made, actions taken, directions given, response effectiveness, and outcomes.

3.4 Planning Division

3.4.1 <u>Planning Division Manager</u>

The Planning Division manager (or designee) is responsible for:

- 1. Informing the Monitoring Division manager, (or designee) of samples needed during fireworks displays and other smoke events.
- 2. Determining which filter samples will be sent out for laboratory analysis.
- 3. Informing the Compliance and Enforcement Division manager, (or designee) of unique or event-specific documentation that may be needed for a demonstration package.
- 4. Ensuring that exceptional event demonstration packages are assembled and submitted to EPA within the regulatory time frame after occurrence of an exceptional event.
- 5. If required, serving (or appointing a Planning staff member to serve) as DAQ spokesperson during an exceptional event and following ADM-010 accordingly.
- 6. Reporting the status of exceptional event demonstration packages to the department director as a metric.

3.4.2 <u>Planning Division Staff</u>

Planning Division staff are responsible for the following tasks, as assigned:

- 1. Collaborating with the Monitoring Division in developing meteorological analyses. This includes informing the air quality forecaster of the scope and level of detail required for the meteorological portion of an exceptional event demonstration package, although it is up to Planning Division staff to determine what is ultimately included in a package.
- 2. Requesting and approving I-flags and R-flags.
- 3. Preparing reports and exceptional event demonstration packages.
- 4. Maintaining a table that tracks exceedance events, exceptional events (with summary), the status of exceptional events, and exceptional event demonstration packages.
- 5. Reporting the status of exceptional event demonstration packages to the Planning Division manager.

3.5 Public Information Administrator and Clark County Public Information Officer

The PIA is responsible for coordinating media and public requests for information. During an exceptional event, the PIA will coordinate with the air quality forecaster to get advisories and alerts to the department director, the PIO, and local media. The PIA may serve as spokesperson for an exceptional event in Clark County, with ADM-010 as a key resource. The PIO will coordinate the release of advisories and alerts to the media, along with media interview requests.

3.6 Author

The author will carefully consider all reviewer comments and incorporate them as applicable before finalizing the procedure.

4.0 **PROCEDURE**

4.1 Issuance of Advisories and Alerts

This section lists the steps for ensuring that DAQ notices and advisories/alerts are issued in a timely manner and standard format.

4.1.1 <u>Templates</u>

- 1. The Planning Division manager or designee, shall work with the PIA and/or the PIO to develop templates for advisories and alerts.
- 2. All advisories and alerts issued to the public shall include the following elements, which are intended to educate affected or potentially affected communities on actions to reduce exposure to elevated pollutant concentration levels during and after an exceedance:
 - a. A Clark County logo, header, and footer provided by the PIO.
 - b. Issuance date and effective period of the advisory or alert.
 - c. Educational statement on the health impact of the pollutant(s), followed by a statement advising sensitive individuals to consult a doctor.
 - d. A statement on air quality conditions, with a link to the forecast page of the DAQ website.
 - e. A brief description of the AQI and a statement encouraging the public to subscribe to the EnviroFlash service, with an embedded link.
 - f. Measures the public can take to reduce exposure and mitigate the effects of the pollutant(s) involved.

4.1.2 <u>Before Issuance</u>

- 1. The PIA shall coordinate with the PIO before issuing advisories/alerts to the public and media.
- 2. When forecasted wind conditions predict, at a minimum, sustained wind speeds of 20 miles per hour (mph) or frequent wind gusts of 30 mph, the air quality forecaster shall coordinate with the Dust/Asbestos Section supervisor on the necessity of issuing a **Construction No-tice** to Dust Control Permit holders, contractors, and stationary sources. Other factors to consider include average soil moisture content and loose soil reservoir depletion.
- 3. When forecasted wind conditions predict, at a minimum, sustained speeds of 25 mph or frequent gusts of 40 mph, or when fine dust is brought into the valley but winds have diminished, the air quality forecaster shall coordinate with the Dust/Asbestos Section supervisor on the necessity of issuing a **Dust Advisory/Alert**, pending management approval.

Other factors to consider when determining whether to issue a Dust Advisory include average soil moisture content and loose soil reservoir depletion.

- 4. For all other pollutant advisories/alerts, the air quality forecaster shall determine the appropriateness of issuance.
- 5. Advisories shall be issued only when it is reasonably certain that forecasted conditions may cause air quality levels to exceed the NAAQS (i.e., to reach or exceed the AQI USG level), or when high pollutant levels are apparent to the public even if AQI levels only reach the Moderate level.
- 6. Alerts shall be issued only when it is reasonably certain that forecasted conditions may cause or are causing air quality levels to reach the AQI Unhealthy level or higher, or when high pollutant levels are apparent to the public even if AQI levels only reach USG levels.
- 7. Seasonal ozone advisories and holiday firework event advisories shall be issued in a timely manner.
- 8. The air quality forecaster shall draft all notices and advisories/alerts using approved templates.
- 9. The air quality forecaster shall submit a draft advisory/alert to the Monitoring Division manager for approval. If the Monitoring Division manager is unavailable, then one of the following managers, in the order listed, must approve the issuance:
 - a. Compliance and Enforcement Division
 - b. Planning Division
 - c. Permitting Division
 - d. Department director.
- 10. The air quality forecaster shall provide the PIA a copy of the approved advisory/alert for review and comment. If the PIA is unavailable to coordinate with the PIO, the air quality forecaster shall coordinate directly with the PIO.
- 11. The air quality forecaster shall advise the Dust/Asbestos Section supervisor of the issuance of an advisory/alert, including the expected duration and wind speeds, after providing the PIA/PIO a copy of the approved advisory/alert.

4.1.3 <u>During Issuance</u>

- 1. After approval of an advisory/alert, the PIA will provide it to the following, at a minimum:
 - a. Clark County School District
 - b. Southern Nevada Health District
 - c. Clark County Department of Parks and Recreation

- d. Cities of Las Vegas, Henderson, North Las Vegas, and Boulder City
- e. Local media (radio and television)
- f. Social media.
- 2. The PIA will notify all DAQ staff when issuing an advisory/alert.

4.1.4 <u>After Issuance</u>

- 1. The air quality forecaster shall:
 - a. Notify the Dust/Asbestos Section supervisor when a manager has approved the issuance of a Dust Advisory/Alert.
 - b. Post the advisory/alert on the DAQ website's monitoring page, updating the forecast and comment block if needed.
 - c. Update the EPA AirNow forecast page to match anticipated pollutant levels, if necessary.
 - d. Prepare a manual e-mail distribution through EnviroFlash.
 - e. Store copies of the advisory/alert on the DAQ website and in appropriate network folders for future documentation.
 - f. Observe air quality concentration levels throughout the event to see if the duration or description in the advisory/alert should be revised.
 - g. Obtain Monitoring Division manager approval to update the website and/or issue a new advisory/alert, and to advise the PIO of changes if (a) conditions improve so that the advisory/alert is no longer necessary, (b) conditions indicate that the duration of the advisory/alert should be extended, or (c) conditions indicate the level of the advisory/alert should be raised. If the Monitoring manager is unavailable, see Section 4.1.2.(6) for the list (in order) of managers who must approve discontinuation or revision of an advisory/alert.
- 2. The Dust/Asbestos Section supervisor shall email Construction Notices and Dust Advisories to all Dust Control Permit holders and selected stationary sources.

4.1.5 <u>Timing</u>

- 1. Once DAQ forecasts an upcoming event, advisories/alerts should be issued as early as possible.
- 2. Recurring seasonal or event advisories should be agreed upon by the air quality forecaster, the PIA, and the PIO at least a few days prior to issuance.

- 3. To optimize media coverage, specific advisories for developing air quality conditions should, if possible, be issued the day before the event. If this is not possible, the advisories should be issued no later than 11:00 a.m. on the day of the event.
- 4. Alerts of imminent or occurring pollutant concentrations in the Unhealthy AQI level should be released as early as possible, preferably by 11:00 a.m.

4.2 Monitoring Division Duties: Data Collection

This section describes the Monitoring Division's processes to collect and maintain data pertinent to an exceptional event.

4.2.1 <u>Communication</u>

- 1. When informed by the air quality forecaster of conditions that may require issuing an advisory/alert, the Field Operations Section supervisor will instruct Monitoring Division staff before they leave for the field to suspend routine checks or maintenance during and immediately after the potential event.
- 2. Pursuant to Section 4.4, Planning Division staff shall determine whether exceedance data should be flagged for an exceptional event. The Field Operations supervisor shall relay this determination to the senior monitoring technician responsible for data validation before he/she submits data from the event to AQS.
- 3. The senior monitoring technician with data validation duties shall notify the air quality forecaster and all Monitoring and Planning Division supervisors and managers when submits flagged data to AQS.

4.2.2 <u>Data Collection, Preservation, and Oversight</u>

- 1. Monitoring field staff shall:
 - a. Refrain from routine quality control checks or other maintenance activities on instruments, samplers, and equipment during or immediately after the event to ensure uninterrupted data collection.
 - b. Confirm site exceedances recorded during an event and provide an initial quality check of exceedance data.
 - c. Collect manual sampler data on the event from monitoring stations.
 - d. Store PM filter-based samples collected during the event until the Planning manager or designee, decides whether to send the filters to an EPA-approved laboratory for analysis of chemical wildfire markers, fireworks markers, or other components.
 - e. If the Planning Division Manager or designee, has requested additional sampling on holidays historically associated with PM_{2.5} exceedances in the Las Vegas Valley (e.g.,

New Year's Eve, Independence Day), collect additional filter samples for laboratory analyses independent of, but in conjunction with, required sampling schedules.

- 2. The air quality forecaster shall begin compiling additional meteorology and pollutant data as soon as possible when an exceptional event is forecast or occurs.
- 3. As soon as practicable, but no later than two months after a Planning Division request, the air quality forecaster shall provide documentation on the meteorological conditions associated with an exceedance to the Planning Division for inclusion in an exceptional event demonstration package.
- 4. The air quality forecaster shall coordinate with assigned Planning Division staff on the content and scope of each meteorological analysis.

4.2.3 <u>Audits</u>

The senior monitoring technician with quality assurance (QA) duties shall:

- 1. Discuss with the QA Section supervisor the appropriateness of auditing instruments that indicated exceedances, and audit each as necessary.
- 2. Discuss any audit results with the senior monitoring technician responsible for data validation.
- 3. Conduct an audit even if only one monitoring site records a probable exceedance, unless the results of recent audits make this unnecessary.
- 4. Conduct an audit when two or more monitors indicate exceedances if the senior monitoring technician with QA audit duties and the QA Section supervisor determine one is needed.

4.2.4 Data Flagging

The senior monitoring technician with data validation duties shall:

- 1. If preliminary results (pre-audit and pre-data validation) indicate an exceedance, notify their supervisor which ManVal informational flags should apply. The supervisor will notify all Monitoring staff and the Planning manager or designee, and instruct Monitoring field personnel which ManVal qualifying flags and notations to apply to their sites' data and logs.
- 2. Verify whether an exceedance occurred after reviewing all data and audits.
- 3. If an exceedance has occurred, flag data in AQS (in accordance with consultations between Planning and Monitoring) with both informational and qualifying flags to notify EPA of DAQ's intent to exclude a potential exceptional event pursuant to 40 CFR 50.14(c)(2).

4.3 Compliance and Enforcement Division Duties: Mitigation Measures

This section describes the Compliance and Enforcement Division's role in identifying, studying, and implementing mitigation measures, including approaches to abate or minimize contributing, controllable sources of identified pollutants.

- 1. During dust-related exceptional events, compliance officers shall:
 - a. Survey assigned areas for sites with blowing dust.
 - b. Document application of BACM on sites to ensure compliance with Dust Control Permit conditions and regulations.
 - c. Conduct on-site evaluations to determine if soils are stable or unstable.
 - d. Perform required field tests, fill out construction site inspection forms, and take digital photos showing the extent of unstable soils and blowing dust.
 - e. Conduct site surveillance and compliance evaluations of stationary sources to determine compliance with permit conditions and regulations related to controlling dust emissions.
- 2. Alleged violators will be issued a Notice of Noncompliance, Warning Notice, or Notice of Violation, as appropriate. Sources will be requested to employ best management practices to correct any violations. Historical patterns, monitoring data, and citizen complaints will be taken into consideration in enforcement actions.
- 3. The Dust/Asbestos Section Supervisor shall compile all field documentation after a dust event and provide it to the Planning Division as soon as practicable.
- 4. The Compliance and Enforcement Division Manager may direct, upon request of the Planning Division Manager, that officers respond in the field during transport pollution events that cause high concentrations of PM₁₀ or PM_{2.5}, even if wind speeds are low. (Additional field enforcement will generally not be requested for high-level ozone events, wildfire smoke events, or fireworks smoke events.)

4.4 Planning Division Duties: Demonstration Package Preparation

This section describes the Planning Division's role in identifying, studying, and implementing mitigation measures, including processes to collect and maintain data pertinent to an exceptional event.

1. The Planning manager or designee, will communicate with the Monitoring manager, or designee, for if additional PM filter-based media runs are needed during and after an exceptional event to capture PM and chemical marker data. This request shall delineate specific monitors, time frames, and days of capture.

- 2. If high PM levels result from transported dust events, the Planning manager may request enforcement activity on a case-by-case basis. This activity may consist of documenting effective controls on local sources, taking digital photos, and/or recording observations, such as predominant wind direction and the presence of local sources of fugitive dust.
- 3. When an exceptional event occurs, Planning staff may proceed to the field to collect specific data, such as photos of problematic sites, when they believe certain areas require field documentation.
- 4. If the Planning manager, or designee, determines that a demonstration package should be prepared after an exceptional event, Planning staff shall:
 - a. Collect associated field data from Compliance and Enforcement Division staff and coordinate with the air quality forecaster to develop a meteorological analysis of the event.
 - b. Collect news items filed by local media regarding the exceptional event.
 - c. Prepare a brief report summarizing the event, including the associated meteorological reasoning and analysis provided by the air quality forecaster.
 - d. If they receive positive comments and a recommendation from EPA, complete the demonstration package and conduct the 30-day public comment period required by Clark County and EPA, and posting of the draft package on the DAQ website for public review.
 - e. Submit the package, including any public comments received, to EPA Region 9 in accordance with 40 CFR 50.14(c)(3).
 - f. After submittal to EPA, replace the public review drafts on the website with final versions that include both the published public notices and the documentation of public comments.

4.5 Mechanisms to Consult with Other Air Quality Managers

- 40 CFR Section 51.930(b)(2)(ii)(D) requires mechanisms to consult with "other air quality managers" in the "affected area" regarding the appropriate responses to abate and minimize impacts. In promulgating the 2016 Exceptional Events Rule, EPA clarified the meaning of "other air quality managers," stating, "[c]onsultation could include collaboration between potentially affected local, state, tribal and federal air quality managers and/or emergency response personnel" (81 FR 68211, 68273). Based on historical exceptional event demonstrations submitted by DAQ, the "affected area" that extends beyond the boundaries of Clark County typically includes portions of Arizona or California.
- 2. Air quality managers from EPA, Arizona, California, and Nevada participate in a Southwest Exceptional Events Working Group, which meets by teleconference quarterly (more frequently if needed). This group serves as the primary mechanism for consultation among air quality managers in regionally affected areas. When air quality in an area is affected by

a foreseeable or ongoing exceptional event, important available information, such as wind direction and speeds, can immediately be sent to working group members. In addition, Clark County will maintain a supplemental list of air quality managers who can be contacted, including tribal air quality managers (Moapa and Paiute), Bureau of Land Management air quality managers, and fire officials (city and county).

4.6 Annual Training Meeting

The Monitoring Division manager (or designee) shall coordinate a meeting each February to discuss and prepare for exceptional events in the coming year.

5.0 RECORDS

The steps taken in this procedure will create the following records:

• Construction Site Inspection Records.

6.0 ADVISORY AND ALERT RECORDS REFERENCES

The following documents were used in developing this procedure:

- 72 FR 13560. "Treatment of Data Influenced by Exceptional Events; Final Rule."
- 40 CFR Parts 50.1, 50.14, and 51.930.
- EPA 2012. "Draft Guidance on the Preparation of Demonstrations in Support of Requests to Exclude Ambient Air Quality Data Affected by High Winds under the Exceptional Events Rule."
- DAQ 2018. "Clark County Mitigation Plan for Exceptional Events."

7.0 FORMS

The following news release templates associated with this procedure are available on the network drive:

- Construction notice
- Dust advisory
- Dust alert
- Fine particulate matter advisory
- Fine particulate matter alert
- Seasonal ozone advisory
- Ozone advisory
- Ozone alert

- Ozone/dust advisory
- Ozone/dust alert
- Smoke advisory
- Smoke alert
- Smoke/dust advisory
- Smoke/dust alert
- Smoke/ozone advisory
- Smoke/ozone alert.

Revision History

No.	Date	Author	Description of Change	Affected Pages
0	8/15/18	R. Langston	Original issuance	All

Reviews

Rev/ Mod No.	Date	Reviewer	Comments

Exceptional Events

APPROVALS:

alour Huss

Department Director

Compliance and Enforcement Division Manager

Ilber

Monitoring Division Manager

Permitting Division Manager

Planning Division Manager

tayte Author

dalla Date

<u>08-08-2018</u> Date

<u>8-8-2018</u> Date <u>x/a/18</u>

Date

8-8-2018 e Date

8-8-20, Date

Appendix E: Documentation of the Public Comment Process

The 30-day Public Comment Period for the April 11, 2022 Exceptional Event demonstration occurred between November 15 and December 15, 2023. The demonstration and associated appendices were posted on the Clark County DES website for public review and comment. The documentation in this Appendix provide evidence of the Public Comment process. No comments were received from the public during this comment period.

Notice of Public Comment

NOTICE OF PUBLIC COMMENT PERIOD ON FINAL EXCEPTIONAL EVENT DEMONSTRATIONS

NOTICE IS HEREBY GIVEN of a public comment period on the final exceptional event demonstrations identified below. The Exceptional Events Rule (EER), codified at 40 CFR 50.1, 50.14, and 51.930, allows air agencies to petition the U.S. Environmental Protection Agency (EPA) to exclude air quality monitoring data influenced by exceptional events from applicable regulatory determinations. Between 2020 and 2022, Clark County recorded several exceedances of the 24-hour PM₁₀ National Ambient Air Quality Standard due to impacts from high wind dust events. The following table details these exceedances. The Clark County Department of Environment and Sustainability (DES) developed these demonstrations to show that exceedances would not have occurred without impacts from windblown dust and requests exclusion of event-related data from use in regulatory determinations in accordance with the EER.

NOTICE IS FURTHER GIVEN that a 30-day public comment period will begin on November 15^{th} , 2023, and end at 5:00 PM on December 15^{th} , 2023, in accordance with the requirements of 40 CFR 50.14(c)(3)(v). The public may review and provide written comments on these demonstrations during this period. Copies of the demonstrations are available for review on the DES website at:

https://www.clarkcountynv.gov/government/departments/environment_and_sustainability/public_ communications/public_notices.php.

Any written comments must be received by DES at 4701 W. Russell Road, Suite 200, Las Vegas, Nevada 89118, by 5:00 PM on December 15th, 2023. Comments should be addressed to Air Quality Planning Section at the same mailing address, emailed to <u>aqplanning@clarkcountynv.gov</u>, or faxed to (702) 383-9994.

Published: November 15th, 2023

Marci D. Henson, Director

Figure 1. Notice of Public Comment Period on November 15, 2023 signed by Director Marci D. Henson.

Date of Event	Type of Event	Site Name	Exceedance Concentration (µg/m3)
09/08/2020	High Wind	Jerome Mack Paul Meyer Walter Johnson Joe Neal Green Valley Sunrise Acres Boulder City Jean	302 198 159 181 209 222 193 162
10/25/2020	High Wind Dust	Jerome Mack Sunrise Acres	210 163
02/21/2022	High Wind Dust	Green Valley Liberty High School Jerome Mack Sunrise Acres Garrett Jr. High Jean	192 225 199 169 167 197
04/11/2022	High Wind Dust	Virgin Valley Paul Meyer Mountains Edge Walter Johnson Palo Verde Joe Neal Green Valley Liberty High School Jerome Mack Sunrise Acres Jean Casino Center Walnut Rec.	158 335 259 341 333 359 340 365 300 367 236 318 396
05/08/2022	High Wind Dust	Virgin Valley Paul Meyer Mountains Edge Walter Johnson Palo Verde Joe Neal Green Valley Liberty High School Jerome Mack Sunrise Acres Jean Casino Center Walnut Rec.	182 229 258 204 220 188 215 242 196 219 177 200 249
05/28/2022	High Wind Dust	Liberty High School Jerome Mack Jean Walnut Rec.	169 158 179 155
05/29/2022	High Wind Dust	Green Valley Liberty High School	183 204

Figure 2. List of all High-Wind Dust Exceptional Events for review during the Public Comment Period during November 15-December 15, 2023.

		Jerome Mack Jean Walnut Rec.	175 218 179
09/08/2022	High Wind Dust	Paul Meyer Walter Johnson Joe Neal Green Valley Liberty High School Jerome Mack Sunrise Acres Garret Jr. High Walnut Rec.	234 307 513 586 285 445 468 350 278
09/09/2022	High Wind Dust	Paul Meyer Walter Johnson Palo Verde Joe Neal Green Valley Jerome Mack Sunrise Acres Walnut Rec.	160 229 212 429 231 341 273 471
10/22/2022	High Wind Dust	Paul Meyer Mountains Edge Walter Johnson Palo Verde Joe Neal Green Valley Liberty High School Jerome Mack Sunrise Acres Garret Jr. High Jean Walnut Rec.	280 326 300 231 230 269 351 280 269 313 224 291

Figure 3. Continued list of all High-Wind Dust Exceptional Events for review during the Public Comment Period during November 15-December 15, 2023.

DES Website Notices



Figure 4. Notification of Public Participation for the High-Wind Dust Exceptional Event demonstrations posted on the Clark County DES website on November 15, 2023.

Public Comment P	criou
Wednesday, Nov. 15, 2023 - Frid	lay, Dec. 15, 2023
Event Date(s)	Fuent Tune
September 8, 2020 Demonstration	Event Type
Appendices (see below)	High Wind Dust
October 25, 2020 Demonstration	
Appendices (see below)	High Wind Dust
February 21, 2022 Demonstration	
Appendices (see below)	High Wind Dust
April 11, 2022 Demonstration	
Appendices (see below)	High Wind Dust
May 8, 2022 Demonstration	High Wind Dust
Appendices (see below)	right wind back
May 28-29, 2022 Demonstration	
Appendices (see below)	High Wind Dust
September 8-9, 2022 Demonstration	
Appendices (see below)	High Wind Dust
October 22, 2022 Demonstration	
Appendices (see below)	High Wind Dust

Figure 5. High-Wind Dust Exceptional Event demonstrations and associated appendices posted during the Public Comment Period on the Clark County DES website.

Documents	
20200907-08 PM10 Appendix.pdf	
20200907-08 PM10 Demonstration.pdf	
20201025 PM10 Appendix.pdf	
20201025 PM10 Demonstration.pdf	
20220221 PM10 Appendix.pdf	
20220221 PM10 Demonstration.pdf	
20220411 PM10 Appendix.pdf	
20220411 PM10 Demonstration.pdf	
20220508 PM10 Appendix.pdf	
20220508 PM10 Demonstration.pdf	
20220528-29 PM10 Appendix.pdf	
20220528-29 PM10 Demonstration.pdf	
20220908-09 PM10 Appendix.pdf	
20220908-09 PM10 Demonstration.pdf	
20221022 PM10 Appendix.pdf	
20221022 PM10 Demonstration.pdf	
Exceptional Event Demonstration Announcement.pdf	
Please submit your comment in the space provided below.	
Your name (optional)	

Figure 6. A screenshot of the Clark County DES website showing all High-Wind Dust Exceptional Event demonstrations and associated appendices in PDF format during the Public Comment Period with the comment space shown at the bottom of the page.

DES Facebook Posting



Figure 7. Public Comment Period notification posted on Facebook on November 15, 2023.

DES X Posting



Figure 8. Public Comment Period notification posted on X (formerly Twitter) on November 16, 2023.

E-Notice (Public Input)

From:	Clark County Division of Air Quality <daqplanningnotice@publicinput.com></daqplanningnotice@publicinput.com>
Sent: To:	Wednesday, November 15, 2023 4:19 PM Araceli Pruett
Subject:	Air Quality Public Participation Notice
#	
n	DES Detentionen eren samer samer Samer eren samer samer samer Samer eren samer samer samer samer
	NOTIFICATION OF PUBLIC PARTICIPATION
	FOR
	EXCEPTIONAL EVENT DEMONSTRATION
Div exc put	e Clark County Department of Environment and Sustainability – Air Quality ision is notifying you that a public participation process has been initiated for an eptional event demonstration. You can view all materials actively subject to the blic participation process and leave comments directly on our <u>website</u> . Contact prmation and instructions for submitting comments are included on the site.
	ase direct any further questions about this notice to <u>Planning@ClarkCountyNV.gov</u> or 702-455-5942.
	Sent on behalf of Clark County, NV by PublicInput 2409 Crabtree Blvd, Suite 107, Raleigh, NC 27604
	Unsubscribe My Subscriptions
	View this email in a browser 🔵 Translate

Figure 9. Email notice for Public Comment Participation sent on November 15, 2023.

E-Notice Distribution List

PLANNING E-NOTICE DISTRIBUTION LIST			
Organization	Contact		
Air & Waste Management Association	Paul Fransioli		
American Lung Association Nevada	James Martinez		
Bureau of Land Management	Lisa Christianson		
City of Boulder City	Michael Mays		
City of Henderson	Sean Robertson		
City of Las Vegas	Marco Velotta		
City of Las Vegas	Milagros (Miles) Escuin		
City of North Las Vegas	Alfredo Melesio		
City of North Las Vegas	Johanna Murphy		
Clark County	Mario Bermudez		
Clark County School District	Chris Dingell		
Clark County School District	Dimitrios Karapanagiotis		
Clark County Department of Aviation	Jim Chrisley		
Las Vegas Valley Water District	Brian Bowler		
Nellis Air Force Base	Shimi Mathew		
Nevada Department of Environmental Protection	Sheryl Fontaine		
Nevada Department of Environmental Protection	Andrew Tucker		
Nevada Resort Association	Sabrina Santiago		
Nevada Resort Association	Virginia Valentine		
Regional Flood Control	Steve Parrish		
Regional Transportation Commission	Beth Xie		
Regional Transportation Commission	Andrew Kjellman		
Sierra Club Toiyabe Chapter	Brian Beffort		
Southern Nevada Health District	Nicole Bungum		
Southern Nevada Off Road Enthusiasts	Ken Thatcher		
Southern Nevada Water Authority	Ayoub Ayoub		
Southern Nevada Water Authority	Keiba Crear		
Southern Nevada Water Authority	Thomas Maher		
Southern Nevada Home Builders	Amanda Moss		
Southern Nevada Home Builders	Nat Hodgson		
The Nature Conservancy	Jaina Moan		
University of Nevada Las Vegas	Dave James, PhD.		
Washoe County Health District	Francisco Vega		
Washoe County Health District	Craig Petersen		

Figure 10. Email distribution list for the email notice of Public Participation.

Public Comment Report

Public Notice:	DES Website: November 15 through December 15, 2023
Public Comment Period	November 15 through December 15, 2023
Formal Comments Received:	None
DES Responses:	None

Appendix F: Response to EPA Comments

Clark County submitted draft High-Wind Exceptional Events Demonstrations for the 2020-2022 design value period to EPA Region 9 on September 8, 2023. EPA Region 9 provided feedback on the main narrative of the October 25, 2020, May 28-29, 2022, and September 8-9, 2022 draft demonstrations on January 19, 2024, and feedback on the Not Reasonably Controllable or Preventable (nRCP) section on March 4, 2024. While EPA only provided feedback on three of the exceptional event dates, the requested changes were populated through all exceptional event demonstrations (i.e., including April 11, 2022). In this Appendix, we provide the comments from EPA Region 9 and the edits that were implemented in all exceptional event demonstrations including April 11, 2022.

Main Narrative Feedback

The main narrative feedback provided by EPA addressed Sections 1-3 and 5-6 in the main demonstration document. EPA reviewed the October 25, 2020, May 28-29, 2022, and September 8-9, 2022 draft demonstrations and the feedback was applied to all exceptional event demonstrations in the 2020-2022 and 2021-2023 design value periods. The EPA comments are provided below in black text with associated edits performed in blue text:

- 1. General comments
 - a. Besides providing graphs of WS and PM10, please include the data in tabular form (perhaps in an appendix). Tabular data may be obtained from sites such as NOAA's: https://www.ncdc.noaa.gov/cdo-web/datatools/lcd
 - i. Hourly and daily PM₁₀, meteorology, and PM speciation data for Clark County and all surrounding counties and weather stations are included with this demonstration in tabular format as a zipped folder.
 - b. In describing the weight of evidence (WOE), discuss spatial and temporal progression, starting with the source region (location, met conditions, progression along the transport path (monitoring sites, airport data), and finally at Clark County (monitoring sites and airport data). For example, in the 10/25/2020 draft demo; figure 3.2-7 showed temporal progression of WS from Lovelock to Bishop, to KDRA, to KLAS, and figure 3.2-8 showing temporal progression of PM10 from Reno to Inyo to LVV were helpful. The NDEP monitors (e.g. Manse Elem) were showing high PM10 as well.

- i. Reordered and simplified Section 3.2.2 to focus on PM₁₀ and wind progression from the source region to Clark County using AQS and meteorological sites along the transport path.
- c. When there are large spatial and/or temporal differences between the monitors during an event, please discuss why this may be so (e.g. 10/25/2020 event between Jerome Mack and Sunrise Acres, and as compared to the Clark monitors).
 - i. Expanded the narrative in Section 3.2.2 to discuss the temporal and/or spatial difference between monitors during an event using the topographical maps with wind speed and PM₁₀ concentration overlaid. Typically, the difference between monitors is their location either at low elevation versus high elevation in the Las Vegas Valley (i.e., settling and accumulation at lower elevations). Additionally, the main mountain passes located at the northwest, southwest, southeast corners of the valley cause funneling of PM₁₀ into the valley with the closest monitors registering high concentrations first.
- d. Have not had a chance to discuss draft demo NRCP controls measures sections with R9 controls group.
 - i. See the next section, "nRCP Feedback," for that feedback from EPA Region 9.

2. 10/25/2020 event

- a. Narrative Conceptual Model: refers to 2019-2021 DV period, This needs to be updated to refer to the 2020-2022 DV period.
 - i. The design value period has been updated in the final version of the demonstration.
- b. Provide discussion/analysis as to why there is a large spatial PM10 variation among the Clark monitors (Jerome Mack/Sunrise Acres compared to the other sites), but comparable WS. Discuss what might be causing the differences, and even between Jerome Mack and Sunrise Acres (2.5 miles apart): peak PM10 at Jerome Mack of 656.95 at 15:00 and at Sunrise Acres of 514.50 at 15:00. Could look at HYSPLIT back trajectories (or other wind direction markers) as well as localized areas of higher wind speeds (above threshold) closer to the monitors with much higher PM10. Or if there are different wind patterns due to the topography with the mountain range.
 - Expanded the narrative in Section 3.2.2 (as discussed in comment response #1c) to discuss topography and settling as well as the timeline of transport during the dust event.

- c. In the CCR section, the source area is identified as Great Basin/Mojave Desert, but sustained wind speed information is from Las Vegas. This section should describe the connection of sustained wind speeds from the source area(s).
 - i. Updated the Clear Causal Relationship section to focus on the timeline and transport of dust from the source region to Clark County. Additionally, updated to focus specifically on the sustained wind speed in the source region and how high sustained wind speeds can loft, entrain, and transport dust from a desert area.
- d. Tonopah Airport and Indian Springs appear to be in the back trajectories and indicate high wind speeds corresponding with the temporal and spatial progression of high winds. Suggest incorporating those (https://www.ncdc.noaa.gov/cdo-web/datasets/LCD/stations/WBAN:23153/detail).
 - i. While the HYSPLIT trajectories do pass over Tonopah Airport and Indian Springs, they also pass over Lovelock, Bishop Airport, and Desert Rock, which are along the transport path, located in the source region, and included in the figures and narrative. We opt not to include additional sites because it does not add further evidence beyond what is already presented and proven in the demonstration to keep the narrative concise and efficient.

3. 5/28-29/2022 event

- a. the demo on page 33 states that strong winds in the Mojave Desert were greater than 50 mph. the WS data from KBYS showed wind gusts approaching 50 mph (47) but not greater. Please provide other WS data from the Mojave Desert being relied upon for the demo.
 - i. This has been updated to say that sustained winds were > 30 mph with a peak wind gust of 47 mph.
- Page 34 refers to KVEF Las Vegas Airport unclear if this is the same as KVGT (North Las Vegas Airport), KLAS (Harry Reid Intl Airport), or some other airport in Las Vegas.
 - i. Provided clarification that KVEF is the upper-air meteorological site in Las Vegas.
- c. Source area is identified as the Mojave Desert in SE CA, but also, it looks like sustained wind speeds at the Las Vegas airport (KHND) also had observations at 25mph on 5/28/2022 (5:56, 6:56, 10:56) (and perhaps others, didn't look), may also be a local component? In CCR section, include wind speed information from all source areas.

- i. Updated Section 3 to provide more source region wind speed information as well as transport progression. Updated Section 3 and 4 to discuss the relative contribution of local versus regional PM₁₀ during the high-wind dust event.
- d. Sect 3.2.2 refers to UP167 station unclear where this is located.
 - i. Updated Section 3.2.2 to correctly label, map, and identify weather stations UP167.
- 4. 9/8/2022 event
 - a. Page 39, "Numerous weather stations across the Las Vegas metropolitan area reported 20-35 mph wind gusts as the boundary passed by." It would be helpful to identify the weather stations, along with pertinent data to show the progression of the boundary. See item 1.b. above.
 - i. Added a figure in Section 3.1 to show data from the weather stations that are referred to in this comment.
 - b. Figure 3.2-1 who operates PFYA3 (is this the Pierce Ferry) station? Please provide the location and WS data for this station.
 - i. Added ownership and location information on the Pierce Ferry station to the text referencing Figure 3.2-1.
 - c. On page 40, it states: "by 16:00 17:00 PST, a cluster of thunderstorms was present in northwestern Arizona, moving toward southern Nevada. Doppler radar detected the presence of an outflow boundary from the thunderstorm complex approaching Boulder City by 19:00 PST (see Figure 3.1-3), with the outflow reaching the Las Vegas metropolitan area between 20:00 and 21;00 PST." Pointing out that Garrett Jr HS (AQS 32-003-0602) in Boulder City) registered a sharp increase in PM10 at 19:00 PST, with the other sites following suit at 20:00 and 21:00 PST bolsters the WOE. Figures 3.2-3 to 3.2-10 don't show this site.
 - i. Expanded the spatial extent of Figures 3.2-3 through 3.2-10 to show Boulder City and the Garrett Jr. High monitoring site to bolster the weight of evidence in Section 3.

nRCP Feedback

The nRCP feedback provided by EPA addressed Sections 4 in the main demonstration document. EPA reviewed the May 28-29, 2022 and September 8-9, 2022 draft demonstrations and feedback was

applied to all exceptional event demonstrations in the 2020-2022 and 2021-2023 design value periods. The EPA comments are provided below in black text with associated edits performed in blue text:

Comments relevant to both September 8-9, 2022, and May 28-29, 2022, Demonstrations:

General comments:

- The Guidance recommends including a conclusion statement at the end of the nRCP section to demonstrate why the high wind dust event was nRCP. Example Guidance language (p 23): "The documentation and analysis presented in [section x] demonstrates that all identified sources that caused or contributed to the exceedance [or violation] were reasonably controlled, effectively implemented, and enforced at the time of the event, therefore emissions associated with the high wind dust event were not reasonably controllable or preventable."
 - This conclusion statement was added to the end of the nRCP section.

(SEPT AND MAY) Clark Language (p 93 for Sept, 107-108 for May): "The 2001 PM10 SIP details emission sources and BACM have been coded into the Clark County Air Quality Regulation (AQR). These include (1) stabilization of open areas and vacant lands (Section 90); (2) stabilization of unpaved roads and paving of unpaved roads when traffic volume is equal to or greater than 150 vehicles per day (Section 91); (3) stabilization of unpaved parking areas, including material handling and storage yards, and generally prohibits the construction of new unpaved parking lots in the nonattainment area (Section 92); (4) requirements for paved roads, street sweeping equipment, and other dust-mitigating devices (Section 93); and (5) permitting and dust control requirements for construction activities (Section 94)."

EPA comments:

- More description of AQR Sections 90-94 would be helpful along with implementation status, such as:
 - o Adoption date, SIP approval date, any subsequent revisions
 - Adoption dates, SIP approval dates, and any subsequent revisions have been added to Section 4.2.
- AQR sections 90-94 appear to be the primary controls. Clark County should analyze the reasonableness of these and any other controls. A presumption of reasonableness only applies to controls approved in a SIP within 5 years. For those controls that have not been approved in a SIP within 5 years, the EE.

- Guidance (p 18-19) Table 2 provides example factors that the air agency and EPA may consider when assessing the reasonableness of controls as part of the nRCP criterion:
 - 1. Control requirements based on area attainment status
 - 2. Frequency and severity of past exceedances
 - 3. Use of measures that are in widespread use
 - 4. Jurisdiction
 - Reasonableness of Control Measures has been added to Section 4.3 with sub-sections for each of the four nRCP criteria requirements listed above.

(SEPT AND MAY) Clark Language (p 92 for Sept, 108 for May): "During high-wind dust periods, Clark County compliance officers inspect construction and stationary source sites to ensure BACM are being implemented, where any observed violation may receive a Notice of Non-Compliance or a Notice of Violation."

EPA comments:

- Did inspectors find any violations during inspections of source sites during these high-wind dust periods? Please provide some sample information that is representative of what inspectors might produce to document their efforts when responding to a Construction Notice or other Advisory issued because of this (or another) exceptional event.
 - For each date, we provide all regularly scheduled and exceptional event-related inspections as well as any Notices of Non-Compliance or Violation that might have been issued. We also provide images, videos, and proof of inspections at all construction and stationary source sites. This documentation is available in the "Dust Alerts Issues and Compliance Information" Appendix in each demonstration.

(SEPT AND MAY) Clark Language (p 11 for both Sept and May): "Following the EPA's exceptional event guidance, we performed Tier 2 and Tier 3 analyses to show the "clear causal relationship" between the high-wind dust event and the PM10 exceedance event in Clark County, NV, on September 8-9, 2022." (and May 28-29, 2022 respectively)

EPA comments:

- In the nRCP section, please include a reference to the information in section 3 titled "Clear Causal Relationship". Such as, but not limited to:
 - Trajectories of source area (Section 3.2)

- Meteorological and chemical transport modeling (Section 3.1.1)
- PM filter chemical speciation analysis where filter-based monitors are used (Section 3.3.4)
 - We provide information in the nRCP section from Section 3 discussing the high-wind event source region, timeline, transport, and exceedance sites as well as references to information in the main body of the demonstration providing further details.

Comments on September 8-9, 2022, Demonstration:

(SEPT) Clark Language (p 37): "On September 8, 2022, a hurricane-initiated thunderstorm created an outflow boundary with associated high winds speeds. The outflow boundary passage through the Mojave Desert region of northwestern Arizona and southern Nevada drove a windblown dust event that increased PM10 concentrations in Clark County, NV, on September 8-9, 2022. Strong winds in the Mojave Desert source region were well above 25 mph from the outflow boundary passage which lofted, entrained, and transported dust from the source region to Clark County starting between 19:00 and 20:00 PST on September 8 and lasting through 10:00 PST on September 9, 2022. The severe drought conditions affecting the Mojave Desert, as shown in Section 2.2, created an ample source of dust from friable soils. Although wind speeds in Clark County were less than the 25-mph threshold, enhanced wind speeds at upwind meteorological sites in the Mojave Desert rapidly increased to 30-40 mph immediately prior to the enhanced PM10 concentrations experienced in Clark County. Transport from the Mojave Desert to Clark County is clearly evident via meteorological analyses and radar images."

EPA comments:

- Similar to the previous comment. The summary of the origin of the high-wind event is found in Section 3.1. It would be useful to reference Section 3 in Section 4 (the nRCP section) to explain how emissions occurred despite controls and provide a description and contribution of natural sources within the area.
 - The requested summaries have been added to the beginning and end of the nRCP section as well as the Section 4.3.4 discussing jurisdiction.

(SEPT) Clark Language (p 92): "With the implementation of the PM10 SIP control measures, evidence shows a decreasing trend in PM10 design values, especially after BACM implementation (Figure 4.2-1)."

EPA comments:

• Figure 4.2-1 is mislabeled, should be figure 4.3-1

• This has been corrected.

(SEPT) Clark Language (p 92): "The decrease in wind erosion from vacant lands has driven the decreasing trend of PM10 emissions as construction within the Las Vegas Valley overtakes vacant lands. This confirms that PM10 emissions have decreased over the past 20 years since the implementation of BACM from anthropogenic sources."

EPA comments:

- Are the emissions before the timeframe in this figure trending downwards as well?
 - In Section 4.3, we have included additional information on the downward trend of PM₁₀ from the successful implementation of BACM from the 1990s and onward.

Comments on May 28-29, 2022, Demonstration:

(MAY) Clark Language (p 33): "During the period between May 28-29, 2022, dust from the Mojave Desert impacted the Las Vegas region and led to 24-hour average PM10 concentrations of 158 μ g/m3 at Jerome Mack, 169 μ g/m3 at Liberty High School, and 155 μ g/m3 at Walnut Community Center on May 28, 2022, and concentrations of 175 μ g/m3 at Jerome Mack, 204 μ g/m3 at Liberty High School, and 183 μ g/m3 at Green Valley on May 29. Strong winds in the Mojave Desert region of southeastern California produced dense blowing dust that was transported to the Las Vegas metropolitan area, increasing PM10 concentrations starting at 16:00-18:00 PST and peaking at 20:00 PST on May 28, 2022. Enhanced PM10 concentrations lasted through 08:00-11:00 PST on May 29, 2022. One other site (Jean) also experienced PM10 concentrations greater than the 24-hour PM10 NAAQS, however the site is outside the nonattainment area and not considered regulatorily significant. All other sites within the Las Vegas Valley experienced enhanced PM10 concentrations concurrently with the exceeding sites. Several large-scale meteorological factors led to favorable conditions for blowing dust on this day. To account for these meteorological factors, observation data were analyzed leading up to and during the dust event. "

EPA comments:

- Summary of the origin of the high-wind event origin found in Section 3.1. Would be useful to reference Section 3 in Section 4 to explain how emissions occurred despite controls and provide a description and contribution of natural sources within the area.
 - An explanation of the high-wind event origin and explanation of how emissions occurred outside of the Clark County jurisdiction, and therefore, despite controls has been included in Section 4.3.4.

(MAY) Clark Language (p 111-112): "Dust Advisories are issued for forecasts of sustained wind speeds of 25 mph or more, or wind gusts of 40 mph or more. Construction Notices are issued for

forecasts of sustained wind speeds of 20 mph or more, or wind gusts of 30-35 mph or more. Upon issuance of either a Construction Notice or an Advisory, DAQ directs stationary sources to inspect their site(s), cease blasting operations, and employ BACM to stabilize all disturbed soils and reduce blowing dust (see Appendix D). This measure indicates the implementation of BACM and enforcement procedures by Clark County. Recipients of a Construction Notice are informed that DAQ officials will inspect sites to ensure BACM is being implemented. On May 27, 2022, a Construction Notice was issued for Friday, May 27 through Saturday, May 28. On Sunday, May 29, a Dust Alert was issued by Clark County due to blowing dust via southwesterly winds from the Mojave Desert."

EPA comments:

- We would be interested in seeing a sample or representative record from these efforts.
 - For dates with a Dust Advisory or Construction Notice issued, we include all inspection, compliance, and enforcement materials in the "Dust Alerts and Compliance Information" Appendix. For dates that did not have a Dust Advisory or Construction Notice issued, we provide an example of the typical inspection, compliance, and enforcement materials if an alert had been issued. Regularly scheduled inspections and associated compliance/enforcement information are included for all dates.