Sublette County, Wyoming Ozone Contingency Plan

December, 2014

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Acronyms

BLM	Bureau of Land Management
BTEX	Benzene, Toluene, Ethylbenzene, Xylene
EPA	Environmental Protection Agency
FLIR	Forward Looking Infrared (imaging device)
LEPC	Local Emergency Planning Committee
NOx	Oxides of Nitrogen
PAPA	Pinedale Anticline Project Area
ppb	Parts Per Billion
ROD	Record of Decision
SERC	State Emergency Response Commission
UV	Ultraviolet
VOC	Volatile Organic Compound
WDEQ-AQD	Wyoming Department of Environmental Quality – Air Quality Division

Purpose

The following Ozone Contingency Plan is for QEP Resources' (QEP) natural gas development and production operations in the Pinedale Anticline field in Sublette County, Wyoming. The purpose of this plan is to identify emission control measures and operating limitations that can be implemented upon a 1 day notice of a high ozone forecast from the Wyoming Department of Environmental Quality's Air Quality Division (WDEQ-AQD) to reduce volatile organic compounds (VOC) and oxides of nitrogen (NOx).

This Ozone Contingency Plan is intended as a guide to contingency procedures for QEP employees and contractors in the event WDEQ-AQD declares an Ozone Action Day. This plan applies to all QEP natural gas development and production operations in the Pinedale Anticline Field in Sublette County.

This plan is prepared in conformance with the BLM's Record of Decision (ROD) for the Pinedale Anticline Project Area Supplemental Environmental Impact Statement which states "Within 90 days of the signing of this ROD, and on an annual basis thereafter, until such time as BLM and WDEQ deem it is no longer necessary, individual contingency plans will be developed by the Operators with WDEQ-AQD and BLM to address avoidance of wintertime ozone exceedances. Failure to comply by any individual company will result in BLM withholding approvals for that company and/or reducing the pace of development and/or production." (ROD, Section 4.1.2, September 2008).

A formal written Ozone Contingency Plan will be maintained at the QEP Pinedale Field Office and will be available electronically on an internal web site. This written plan is available, upon request, to QEP employees, their designated representatives, QEP contractors, and any BLM, Environmental Protection Agency (EPA) or WDEQ officials.

General Operational Information

The address of QEP's Pinedale office is:

QEP Resources
9663 US Highway 191
Pinedale, WY 82941
(307) 367-7001

QEP has operated on the Pinedale Anticline since 1963. Development activities include construction, gathering, drilling, completion, compression, and production. QEP produces natural gas from over 900 producing wells at approximately 75 locations. As of December 1, 2014, QEP operates a fleet of 4 drilling rigs in the Pinedale Anticline Field.

Emissions from QEP operations include NOx and VOC. The largest NOx emission sources include the diesel drilling rig engines, natural gas compressors, and completion/production activities. The primary source of VOC emissions is from production operations including gas dehydration, pneumatic pumps and controllers, and fugitive emissions from production facilities.

Our workforce includes a mix of QEP personnel and contractors. QEP personnel may work in the Pinedale office or in the field supporting the different development activities. Field operations, such as drilling, completions, and construction, are mostly supported by contractor firms. Some contractor personnel live locally and others commute from neighboring cities and states. Typical work hours for field operators and control room operators are 8 hours per day, 7 days per week. Drilling and completion operations take place 24 hours per day.

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Overview

What is Ozone?

Ozone (O_3) is a colorless gas, composed of three oxygen atoms, that occurs both in the earth's upper atmosphere and at ground level. Ozone has the same chemical structure whether it occurs miles above the earth or at ground level. Ozone occurs naturally in the stratosphere approximately 10 to 30 miles above the earth's surface and forms a layer that protects life on earth from the sun's harmful ultraviolet (UV) rays. In the earth's troposphere or lower atmosphere, ground-level ozone is considered an air pollutant.

How is Ground-Level Ozone Formed?

Ozone is not usually emitted directly into the air. At ground-level, ozone is created by a chemical reaction between oxides of nitrogen (NOx) and volatile organic compounds (VOC) in the presence of sunlight. Common sources of ozone precursors (NOx and VOC) include; motor vehicle exhaust, industrial emissions, electric utilities, gasoline vapors, natural gas liquids, and chemical solvents as well as natural sources. Under the right environmental conditions, these ozone precursors form ground-level ozone, the primary constituent of smog. Sunlight and hot weather cause ground-level ozone to form in harmful concentrations in the air. As a result, it is known as a summertime air pollutant. Many urban areas tend to have high levels of ozone. However, because wind carries ozone and ozone precursors hundreds of miles away from their original sources, even rural areas are subject to increased ozone levels.

Unlike urban areas which experience ground-level ozone in the summertime, elevated ground-level ozone in Sublette County occurs during the winter. Ultraviolet (UV) energy from the sun is required to produce ozone. During winter months snow-cover can cause greater reflectance of UV rays, doubling UV energy on sunny days, which can elevate the level of ozone. In addition to snow-covered ground and bright sunlight, other factors contributing to elevated ozone include strong temperature inversions, low wind speeds, and excess ozone precursors (NOx and VOC). Sources of ozone precursors in Sublette County include vehicles, drill rigs, well completion activities, gas production/compression/transmission, community/residential emissions, emissions from natural sources, and emissions transported from other areas by wind.

Additional information about ozone, its formation in the Upper Green River Basin and WDEQ's involvement is discussed in a letter from John Corra, former Director of WDEQ to Mayor Steve Smith of Pinedale (Appendix A). The Wyoming Department of Health has developed an Ozone Fact Sheet about the health concerns related to ozone (Appendix B).

What are the Effects on Human Health and the Environment?

Breathing ozone may trigger a variety of health problems including chest pain, coughing, throat irritation, and congestion and it may worsen bronchitis, emphysema, and asthma. Ground-level ozone also may reduce lung function and inflame the lining of the lungs. Repeated exposure may permanently scar lung tissue.

The Clean Air Act requires EPA to set air quality standards to protect both public health and the public welfare (e.g. crops and vegetation); ground-level ozone affects both. On April 30, 2012, the EPA sent a letter to Governor Matt Mead designating Sublette County and parts of Lincoln and Sweetwater Counties as nonattainment for ozone air quality standards (Appendix A). The nonattainment designation for the Upper Green River Basin went into effect July 20, 2012. The EPA classified the area as "Marginal" according to the severity of the ozone air quality problem. A Marginal nonattainment area is expected to reach attainment within three years.

Health Effects

When ozone levels are unhealthy, everyone may begin to experience health effects. Members of sensitive groups, people with lung disease, children, older adults, and people who are active outdoors, may experience more serious health effects. Breathing ozone may trigger a variety of health problems, including:

- Airway irritation, coughing, and pain when taking a deep breath,
- Wheezing and breathing difficulties during exercise or outdoor activities,
- Inflammation of the lining of the lungs, which is similar to a sunburn on the skin,
- Aggravation of asthma and increased susceptibility to respiratory illnesses like pneumonia and bronchitis, and
- Permanent lung damage with repeated high level exposure.

Environmental Effects

Ground-level ozone may have detrimental effects on plants and ecosystems. These effects include:

- Interfering with the ability of sensitive plants to produce and store food, making them more susceptible to certain diseases, insects, other pollutants, competition and harsh weather,
- Damaging the leaves of trees and other plants, negatively impacting the appearance of urban vegetation, as well as vegetation in national parks and recreation areas, and
- Reducing forest growth and crop yields, potentially impacting species diversity in ecosystems.

What is an Ozone Action Day?

The WDEQ-AQD will declare an Ozone Action Day when ground-level ozone concentrations are expected to be above the ozone standard (health based standard) based upon an evaluation of weather forecasts and ozone monitoring data. The declaration of an Action Day indicates the potential for elevated 8-hour ozone levels. The Action Day status will remain in effect for 1 day, but may be reissued on consecutive days.

Ozone Health Concern Levels

The National Ambient Air Quality Standard for ozone for 8-hour average concentration is 75 parts per billion (ppb), as established by the EPA. Throughout the ozone season WDEQ-AQD will issue daily Winter Ozone Updates informing the community of current and forecasted ozone levels for the following two days. WDEQ is implementing this program to better inform the public, thus allowing them to make appropriate decisions regarding their health. The table below describes the specific ozone values, the associated Air Quality Index health concern levels and an explanation of each value/level.

Air Quality Index (AQI) Values	Ozone Value 8 hour average (ppb)	Air Quality Index Levels of Health Concern	Meaning
0-50	0-59	Good	Air quality is considered satisfactory, and air pollution poses little or no risk.
51-100	60-75	Moderate	Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people who are unusually sensitive to air pollution.
101-150	76-95	Unhealthy for Sensitive Groups	Members of sensitive groups may experience health effects. The following groups should limit prolonged outdoor exertion: • People with lung disease, such as asthma

Air Quality Index (AQI) Values	Ozone Value 8 hour average (ppb)	Air Quality Index Levels of Health Concern	Meaning
			• Children and older adults The general public is not likely to be affected.
151-200	96-115	Unhealthy	Everyone may begin to experience health effects; members of sensitive groups may experience more serious health effects. The following groups should avoid prolonged outdoor exertion: • People with lung disease, such as asthma • Children and older adults • People who are active outdoors Everyone else should limit prolonged outdoor exertion.
201-300	116-374	Very Unhealthy	Health alert: everyone may experience more serious health effects
301-500	No Change	Hazardous	Health warnings of emergency conditions. The entire population is more likely to be affected.

When is an Ozone Action Day Declared?

During the winter months of January, February, and March, WDEQ-AQD will declare an Ozone Action Day for a 24-hour period if conditions are favorable for ozone formation. WDEQ-AQD may extend the forecasting program beyond the March 28 end date if conditions warrant. The WDEQ-AQD issues the alerts to the media, individuals, local governments, and businesses via a variety of methods including telephone, email, a printed news release, internet (e.g. http://winterozone.org, www.pinedaleonline.com), newspapers, television, and radio. The Wyoming State Emergency Response Commission (SERC) and the Sublette County Local Emergency Planning Committee (LEPC) will assist with notifications. See Appendix C for an example of a Winter Ozone Update including Ozone Action Day Status from the WDEQ-AQD. The declaration of an Ozone Action Day will identify a specific locale, such as the Upper Green River Basin.

QEP will utilize a contact list for notification of the declaration of an Ozone Action Day from WDEQ-AQD. For planning purposes QEP expects that an Ozone Action Day will be declared no later than 12:00 Noon the day prior to the affected day, and will be directly issued via e-mail and phone to QEP's identified contacts.

At this point, QEP expects that the high ozone forecast will not have separate threshold levels (moderate, severe, extreme), but will contain a single declaration that conditions are favorable for ozone formation.

When is an Ozone Action Day Lifted?

An Ozone Action Day will be declared for a one (1) day period by the WDEQ-AQD and as such no notification of the lifting of an Ozone Action Day will be issued. If conditions that led to the high ozone forecast persist, WDEQ-AQD will declare another Action Day.

Preplanning

Awareness Training

Awareness training for this Ozone Contingency Plan will be conducted on an annual basis for all applicable QEP personnel and winter-time contractors. The content of the training will follow the outline of this plan with a focus on control measures. The first training session of this plan will be conducted in December of each year. This training will also be given at the following times:

- When a new winter-time employee or contractor is hired in the Pinedale Anticline Project Area,
- When an existing employee or contractor is initially assigned to a winter-time job in the Pinedale Anticline Project Area, and
- Whenever the plan has substantial changes.

Inspection and Maintenance

Leak Detection Surveillance

Prior to and during the wintertime ozone season, the following inspection and maintenance measures for the purpose of gas leak detection will be undertaken. Note that these activities are above and beyond routine inspection and maintenance activity.

- Perform leak detection surveillance by the end of December to identify leaking equipment.
- Repair leaking equipment to eliminate VOC emissions.

Production Operations Surveillance

Prior to and during the wintertime ozone season, the following production operations surveillance measures will be undertaken. Note that these activities are above and beyond routine inspection and maintenance activity.

- Check for proper operation of field equipment:
    - Increase monitoring of VOC and BTEX controls.

Notification Procedures

Notification System

QEP will communicate declaration of an Ozone Action Day by WDEQ-AQD to all necessary personnel following QEP's Notification Process Flow Diagram (Appendix D).

Test of Action Plan Notification System

Prior to the ozone season, an initial test of the notification system will be conducted by the WDEQ, QEP and other natural gas operators in the Pinedale Anticline Field. WDEQ will notify the operators of the practice date.

Control Measures

This Ozone Contingency Plan will be implemented upon WDEQ-AQD declaration of an Ozone Action Day for Sublette County, Wyoming.

This section of the Ozone Contingency Plan addresses control measures relative to Ozone Action Days declared by WDEQ-AQD that arise from episodic and elevated levels of ground-level ozone in the winter. Upon notification from the WDEQ of an Ozone Action Day for Sublette County, Wyoming, QEP will implement specific contingency measures. Proposed control measures are described in this section.

Standard Operating Procedures

Throughout the year QEP implements the following standard operating procedures. In addition to being good housekeeping measures, these activities reduce ozone precursor emissions. In the event of an Ozone Action Day, QEP personnel will verify that these standard procedures are implemented.

- **Vehicle Operations**
  - Keep vehicles tuned up and tires well inflated to increase mileage and reduce the need for refueling.
  - Do not overfill fuel tanks when re-fueling. Fuel creates ozone-causing vapors as it evaporates.
  - Tighten fuel caps.
- **Completions**
  - Between operators, share best management practices for flareless completion techniques in order to reduce emissions.
- **Other Control Measures**
  - Use environmentally safe paints, cleaning products and other chemicals whenever possible.
  - Follow manufacturers' recommendations to use and properly seal cleaners, paints, and other chemicals so smog-forming chemicals can't evaporate.
  - Share best management practices with other operators.

Short Term

During an Ozone Action Day, discretionary activities that could otherwise be rescheduled at a later date with better meteorological conditions will be limited. In addition to standard operating procedures implemented by QEP throughout the year, the following activities will be conducted in response to the declaration of an Ozone Action Day.

- **Vehicle Operations:**
  - Reduce idling of vehicles. Shut off all vehicle engines when activities would involve idling time greater than 5 minutes and would not put worker safety at risk.
  - Establish a traffic minimization program and implement specific activities in the field by delaying trips, combining tasks into one trip, carpooling, or bussing.
  - Reduce speed limits on the field and lease roads by 5 mph to reduce air pollution.

- Postpone/reschedule non-critical vehicle trips to locations by QEP employees and contractors.
- Refuel cars and trucks after dusk, when emissions are less likely to produce ozone.

- **Production Operations:**
  - Suspend and reschedule non-critical maintenance activities that would result in venting of gas.
  - Postpone/reschedule the blow down of wells that are needed for operational, maintenance or construction purposes where possible.
  - Turn down heat trace pumps to minimum temperatures with the result of lower VOC emissions during this period.
  - Increase surveillance of combustors, both in the control room and in the field, to ensure proper operation.
  - Shut-in uncontrolled facilities (e.g. single well facility with no control on the dehydrators) when environmentally and safely feasible.
- **Completion Operations:**
  - Postpone initiation of completion activities that lead to VOC or NOx emissions when safely feasible.
  - Minimize the use of or turn off engines (e.g. water pumps, light plants) during daylight hours.
- **Drilling Operations:**
  - Limit vehicle and ancillary equipment idle time.
  - Minimize the use of or turn off engines (e.g. water pumps, light plants) during daylight hours.
  - Refuel diesel tanks after dusk as possible, when emissions are less likely to produce ozone.
- **Field Services**
  - Postpone initiation of blow downs.
  - Delay line pigging.
  - Suspend site activities that result in venting of gas to atmosphere.
- **Other Control Measures:**
  - Where possible, perform maintenance activities that generate emissions later in the day when conditions are less favorable for the production of ozone.
  - Suspend and reschedule use of gasoline or diesel powered maintenance or construction equipment where possible.
  - Postpone non-essential construction.

Accelerated Activities

QEP has conducted the following accelerated activities to help reduce emissions of ozone forming pollutants:

- Installation of the Liquids Gathering System in late 2005 has eliminated over 209,001 tanker truck trips (as of 11/1/2013), allowed for the removal of 120 production tanks, and eliminated the need to install an additional 576 production tanks,
- Replaced all winter drilling Tier 0 and Tier I rig engines with Tier II engines by November 2006 – over 1 year early compared to February 1, 2008 deadline in QEP's 2004 Year-Round Drilling EA (50% rig engine NOx reduction),
- Installed Tier II rig engines on all Pinedale summer drilling rigs since May 2007 (50% rig engine NOx reduction); not required,
- Converted all rig boilers from diesel to natural gas in winter 2006-07 (40% winter diesel fuel reduction); not required,
- Began utilizing Ultra Low Sulfur Diesel (ULSD) on all drilling rigs in 2006; not required until 2009,
- Replaced mechanical rigs with silicon controlled rectifier rigs for more efficient engine utilization,
- Bussing company swapped out diesel busses for cleaner gasoline-powered vehicles and swapped to smaller busses for crew change (2007); not required,
- Built onsite mud plants to reduce trucking distances for transport of drilling fluids; not required,
- Converted all six frac pumps to Tier II engines in June 2008, not required; 50% NOx reduction,
- Converted all six frac pumps to Tier IV engines in 2013, not required:
- Replaced completions' sand trucks with solar powered sand castles, eliminating a diesel generator,
- Perform flareless completions over 99% of the time for all workover and completion operations (90% is required),
- Performed 24-hour frac operations since 2005 which reduces trucking and emissions; not required,
- Replaced all continuous liquid level dump valve controllers with non-bleed controllers,
- Began installing solar-powered methanol injection pumps on all new wells in 2009,
- Began testing Selective Catalytic Reduction emission controls on one Tier II rig engine June 2008; not required,
- Installed Selective Catalytic Reduction emission controls on three Tier II rig engines as of August 2010,
- Installed Selective Catalytic Reduction emission controls on six additional Tier II rig engines as of December 1, 2011,
- All drill rigs are equipped with Tier II engines with Selective Catalytic Reduction emissions controls as of December 31, 2011,
- Converted 4 rig engines to bi-fuel system (Averaging 50% natural gas substitution rate)

- Replacing retired fleet vehicles with cleaner burning compressed natural gas (CNG) vehicles, 11 CNG vehicles currently in the Pinedale fleet,

- Began controlling emissions from all new pneumatic heat trace pumps in 2007,

- Began replacing pneumatic methanol injection pumps with solar-powered pumps in August 2010,

- Began controlling pneumatic wellhead flow controllers in August 2010,

- Continued production emission control equipment surveillance and improvements,

- Proactively conduct FLIR camera inspection prior to new facilities being put into production,

- Conduct annual FLIR camera inspections of facilities on all pads, not required,

- Upgraded emission controls to meet current BACT requirements, on wells grandfathered under previous air quality standards,

- Reduced transportation related emissions, and

- Electrified certain locations within the field.

Activities Considered; But Not implemented

QEP has also reviewed whether to shut-in producing wells and/or shutdown drilling operations during an Ozone Action Day. QEP's concerns with these activities are discussed in detail below.

- Shut–in production field wide: Field wide shut-in of production equipment during cold weather conditions would require that all equipment (piping, separators, dehydration units, etc) be de-pressured. De-pressuring production equipment would result in the release of a substantial quantity of methane and VOC emissions to atmosphere, which would ultimately increase the possibility of ozone formation. After an extended shut-in of production, well pressures increase to higher than normal operating pressure which increases the possibility of hydrate formation (freezing) within piping and equipment. In order to manage hydrate formation during start up of production, additional emission releases would be required. As such, QEP will concentrate its efforts on assuring that the emission control equipment installed on its facilities are operating within the WDEQ control efficiency requirements.

- Complete shutdown of drilling rigs: Complete shutdown of a rig (including heaters and boiler) would result in freezing of critical rig components, including well control equipment. This would eliminate a layer of well control redundancy required by Onshore Order 2. Rig shutdown also could lead to a well control situation because the inability to agitate drilling mud could result in an artificially low mud weight. Shutting down while drilling would require the rig to trip out of hole to prevent sticking pipe. Tripping pipe is a high horsepower operation which would generate more emissions at a point when emission reduction is the goal. QEP will instead concentrate its efforts on assuring that emission controls are properly functioning on rig engines.

- Partial shutdown of drilling rigs: Partial shutdown of a rig would shutdown the action of drilling and running casing but the rig engine, boiler, and rig heater would remain running to supply heat and power to the rig. There are different operational and safety risks related to partial shutdown dependent on the actual operation (directional drilling, running casing, logging, etc.) at the time of an Ozone Action Day. If an Action Day occurs while a rig is in the intermediate hole section, the main concern is sticking pipe (drill string or casing). To prevent sticking pipe, the drill rig would need to trip out of the hole, increasing emissions as discussed in the previous section. The primary concern in the production hole is a well control situation. If the well begins to flow, operations must be resumed and

would likely result in flaring, adding additional emissions when emission reduction is the goal. QEP will concentrate its efforts on assuring that emission controls are properly functioning on rig engines.

Recordkeeping

Hard-copy records (and electronic records where available) associated with this Ozone Contingency Plan will be maintained by QEP staff in its Pinedale, WY office. Electronic copies of all records will be available in QEP's Denver, CO office. An internal audit of these records and recordkeeping practices will be conducted on an annual basis. A list of these records is as follows:

- Documentation of QEP's communication to its personnel of declaration of an Ozone Action Day,
- Annual awareness training presentations and sign-in sheets,
- Leak detection surveillance records, including:
    - Equipment leak repairs performed on an Ozone Action Day,
    - Tank hatch gasket and tank vent inspections on an Ozone Action Day;
- Production operations surveillance records, including:
    - Records of VOC and BTEX combustor inspections, and
    - Any other inspections of field equipment for proper operation;
- Documentation of the initial test of the notification system for the Ozone Contingency Plan.

A daily record of all control measures that are conducted during an Ozone Action Day will be documented using the Standardized Ozone Contingency Plan Event Summary checklist (Appendix E) developed by WDEQ.

Periodic Evaluation

BLM's ROD requires an annual review of the Ozone Contingency Plan (for adequacy of the actions being implemented). Evaluation of the effectiveness of the Ozone Contingency Plan includes several key strategies to ensure a robust plan. Strategies include: review of the effectiveness/appropriateness of ongoing control strategies, consideration of new/additional control options, discussions with WDEQ and other operators in the PAPA (i.e., Shell, Ultra) regarding Ozone Contingency Plan updates and protocols, review of the established emission inventory and identification of new emission sources, review of the Ozone Action Day protocol and notification records, etc.

QEP will review the effectiveness of its Ozone Contingency Plan and modify it, as necessary, each year that the BLM requires an Ozone Contingency Plan be submitted.

Appendix A

Letter to Local Officials from John Corra, Director, WDEQ
Letter to Governor Matt Mead from USEPA

February 26, 2008

Mayor Steve Smith
Town of Pinedale

Commissioners Joel Bousman, William Cramer and John Linn
Sublette County Commission

Gentlemen:

I'm writing to give you a heads up to an air quality alert which may generate inquiries to your offices. I wanted you to have some background on this matter before you may be contacted by your constituents.

The Air Quality Division of Wyoming's Department of Environmental Quality is issuing an air pollution advisory beginning Wednesday, February 27, for the Upper Green River Basin, in Sublette County. The advisory is for ozone, which is an air pollutant that can cause respiratory health impacts especially to children, the elderly and people with existing respiratory conditions. People in these sensitive groups should limit strenuous or extended outdoor activities, especially in the afternoon. This advisory is expected to be in effect for several days, and DEQ will issue another advisory when conditions change and ozone levels return to normal.

DEQ is currently studying wintertime ozone formation in the Basin, and believes that the following conditions can lead to higher than normal ozone formation: strong temperature inversions, coupled with periods of low wind speeds, snow-covered ground and bright sunlight. These conditions are expected to occur beginning Wednesday, February 27, and to continue for several days. Predictions of elevated ozone are based on evaluation of weather forecasts, and are therefore only as reliable as those forecasts. We encourage individuals who have concerns about current conditions to consult the Air Quality Division's air monitoring web site, www.wyvisnet.com. This web site displays current ozone levels at the Daniel, Boulder and Jonah air monitor stations, and contains information about health effects of ozone.

Ozone is formed in the atmosphere through chemical reactions of volatile organic compounds and oxides of nitrogen, in the presence of sunlight. Both of these air pollutants are emitted from natural gas drilling and production activities, and there is some smaller contribution of these pollutants from community activities like operating motor vehicles and heating buildings. Ozone is normally found in larger cities during the summertime, and its formation in those areas is primarily caused by tailpipe emissions from cars and trucks. DEQ first detected moderately elevated ozone levels at its Sublette County monitors primarily during February in both 2005 and 2006. Since elevated ozone concentrations are unexpected during the winter, DEQ began a formal study to determine the causes of these conditions in the Basin. Although the study is not yet complete, monitor data from the past three years suggest that elevated winter ozone levels are limited to times when the specific weather conditions (inversions, low winds, snow cover, and bright sunlight) are all present, and do not persist once those conditions change.

Ozone is measured in DEQ's monitors once every 15 minutes, and we display both an hourly average value, and an eight-hour average value on our web site. Eight-hour values on the Division's web site that are less than 85 parts per billion (ppb) are generally considered safe. EPA has reevaluated ozone health effects data, however, and has proposed to lower the ozone standard to a new limit between 70 and 80 ppb. For your reference, EPA suggests that states issue health advisories to "sensitive groups" when eight hour ozone values are 85 ppb or higher, and to the general public when values are 105 ppb or higher. Data from the Division's monitors show several instances during the last two weeks where the Jonah and Boulder monitors exceeded 85 ppb for an eight hour average, and two days where the Boulder monitor exceeded 105 ppb (the highest eight hour value recorded at Boulder was 122 ppb on February 21). I must caution that these recent monitor values are subject to change after the Division completes its quality assurance checks on the data.

Since natural gas drilling and production activities contribute to ozone-forming pollution in Sublette County, DEQ is considering options to limit emissions from this industry sector to reduce public exposure to elevated levels of ozone.

If you have any questions or concerns, please feel free to contact me at 777-7937, or Dave Finley, Administrator of the Air Quality Division, at 777-7391.

Sincerely,

John C. Corra
Director
Wyoming Department of Environmental Quality

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

APR 30 2012

THE ADMINISTRATOR

The Honorable Matt Mead
Governor of Wyoming
State Capitol, 200 West 24th Street
Cheyenne, Wyoming 82002

Dear Governor Mead:

The U.S. Environmental Protection Agency today is taking the next step to address ozone air quality by issuing final area designations for the 2008 National Ambient Air Quality Standards for ozone. This action, required under the Clean Air Act, lets communities know if their outdoor air is meeting the national standards for ground-level ozone and which areas are violating, or contributing to violations of, the national standards.

The EPA strengthened the ozone standards on March 12, 2008, to increase protection of public health and the environment. Breathing air containing high levels of ozone, a key ingredient in smog, can reduce lung function, trigger respiratory symptoms, and worsen asthma or other respiratory conditions. Ozone exposure also can contribute to premature death, especially in people with heart and lung disease. The new standards, which also protect against damage to sensitive vegetation and forested ecosystems, are a key part of the EPA's commitment to a clean, healthy environment. As we have done for more than 40 years, the EPA will work with you to improve air quality and continue to protect the health of our citizens.

As part of the designations process, the EPA worked closely with states, tribes and local governments to identify areas in the nation that meet the standards and those that need to take steps to reduce ozone pollution. After reviewing the most recent certified ozone air quality data and evaluating factors to assess contribution to nearby levels of ozone, I have determined that some areas in Wyoming violate the 2008 ozone standards or contribute to violations of the standards in a nearby area. As a result, the EPA is designating portions of Wyoming "nonattainment." The remaining areas in the state, do not violate the standards or contribute to a violation of the standards in a nearby area and will be designated "unclassifiable/attainment." I appreciate the information that Wyoming shared with the EPA throughout this process to assess ozone air quality.

Under the Clean Air Act, ozone nonattainment areas are also classified at the time of designation according to severity of their ozone air quality problem. The EPA finalized a rule today that establishes the air quality thresholds for the different classification categories for the 2008 ozone standards and areas have been classified according to that rule.

The enclosed table identifies the designation and classification for areas within Wyoming Areas designated as nonattainment are subject to planning and emission reduction requirements as specified in the Clean Air Act. Requirements vary according to an area's classification. The EPA will be proposing an ozone implementation rule soon to assist states with nonattainment areas in the development of state implementation plans for attaining the ozone standards.

History shows that cleaner air, better health and economic growth go hand-in-hand. Areas designated "nonattainment" will need to take actions to improve ozone air quality expeditiously, as required by the Clean Air Act. For areas designated "unclassifiable/attainment," the challenge is to maintain clean air. Working closely with the states and tribes, the EPA is implementing the 2008 ozone standards using a common sense approach that protects air quality, maximizes flexibility and minimizes burden on state, tribal and local governments.

I recognize that the EPA shares the responsibility with the states and tribes for managing ozone air pollution. I also recognize that air pollution crossing state boundaries can contribute to downwind violations of the standards. Current and upcoming federal standards and safeguards, including pollution reduction rules for power plants, industrial facilities, vehicles and fuels, will ensure steady progress to reduce smog-forming pollution and will protect public health in communities across America.

The EPA will be assisting state, tribal and local air agencies by identifying currently available emission reduction measures as well as relevant information concerning their efficiency and cost-effectiveness. State, local and tribal agencies will be able to use this information in developing emission reduction strategies, plans and programs to attain and maintain cleaner air.

I look forward to continuing to work with you and your staff as we strive to advance our shared goal of clean air. Additional technical information on the ozone designations can be found at www.epa.gov/ozonedesignations. If you have questions, please contact me, or your staff may call Sarah Hospodor-Pallone, Deputy Associate Administrator for Intergovernmental Relations, at 202-564-7178.

Sincerely,

Lisa P. Jackson

Enclosure

Enclosure

2008 Ozone National Ambient Air Quality Standards*
Initial Designations and Classifications for Areas in Wyoming

Area Name	County Name	Designation	Classification
Upper Green River Basin Area, WY	Lincoln County (p) Sublette County Sweetwater County (p)	Nonattainment	Marginal
Rest of State - Unclassifiable/Attainment			

* The primary and secondary ozone National Ambient Ozone Air Quality Standards are identical. Designations apply for both standards.
(p) - partial county

Appendix B

Ozone Alert Health Information
(Fact Sheet from Wyoming Department of Health)

From the Wyoming Department of Health

OZONE FACT SHEET

WHAT IS OZONE?

- The ozone layer, miles above the surface of the earth, protects us from cancer-causing solar ultraviolet radiation.
- Ground level ozone is formed through a complex chemical reaction involving hydrocarbons, nitrogen oxides and sunlight when weather conditions are optimal.
- Increased ground level ozone may cause shortness of breath, coughing, wheezing, and eye, nose and throat irritation. It is especially dangerous to older adults, children, asthmatics and persons with other chronic respiratory ailments.

WHO IS AT RISK?

- When ozone levels are significantly elevated everyone who works, plays or spends time outdoors may feel some symptoms. However, these effects are increased for children, the elderly, and people with asthma and chronic respiratory ailments.
- Some healthy people may be more sensitive to the effects of ozone than the average person.

ASTHMATICS

- Ozone can aggravate asthma, causing more asthma attacks, increased use of medication, more medical treatment and more visits to hospital emergency rooms.

CHILDREN

- Pound for pound, children breathe more air (and ozone) than adults.
- Children may spend more time outdoors playing than adults.
- Children's respiratory systems are still developing, and children are more likely to have asthma.

ELDERLY

- Ozone presents an increased risk to the elderly because it can aggravate pre-existing respiratory diseases.
- The elderly may experience reduced sensitivity to symptoms of ozone; therefore, early warning signs of the harmful effects of ozone may be ignored.

PROTECT YOURSELF

- Your chances of being affected by ozone increase the longer you are active outdoors and the more strenuous your activity.
- Individuals with asthma, other respiratory diseases, and persons particularly sensitive to ozone, should be aware that on high ozone days they are more likely to experience shortness of breath, coughing, wheezing, and eye, nose and throat irritation.
- Air pollution advisories may be called when weather forecasters predict weather conditions likely to cause high ozone.
- People at risk should try to limit their time outdoors and limit strenuous activity on high-ozone days.
- Those experiencing symptoms such as tightness in the chest, coughing, wheezing and shortness of breath should consult a medical professional.

For more information visit these related websites:

http://www.epa.gov/Ozone/ and http://deq.state.wy.us/

US EPA Color Codes Corresponding to Ground Level Ozone Concentrations (US EPA 1999b with modifications).
Adapted from the North Carolina Department of Health and Human Services, Division of Public Health

AIR QUALITY CATEGORY	**0ZONE 8 –HR (ppm)**	**Air Quality Index (AQI)**	**COLOR CODE**	**HEALTH EFFECTS AND ADVICE**
GOOD	0.00-0.064	0-50	GREEN	No adverse health effects expected
MODERATE	0.065-0.084	51-100	YELLOW	Unusually sensitive groups -possible cough and painful breathing -consider limiting prolonged outdoor exertion
UNHEALTHY FOR SENSITIVE GROUPS	0.085-0.104	101-150	ORANGE	Sensitive groups (i.e, children, adults active outdoors, people with respiratory disease, people unusually susceptible) -possible cough, painful breathing, and decreased lung function -should limit prolonged outdoor exertion
UNHEALTHY	0.105-0.124	151-200	RED	Sensitive groups -probable cough, painful breathing, and decreased lung function -avoid prolonged outdoor exertion Healthy population -possible cough, painful breathing, and decreased lung function -limit prolonged outdoor exertion
VERY UNHEALTHY	0.125	201-300	PURPLE	Sensitive and healthy individuals likely to experience moderate to severe effects like cough, painful and impaired breathing, and decreased lung function Sensitive groups -avoid outdoor exertion Healthy population -limit outdoor exertion

Appendix C

Winter Ozone Update Example from WDEQ

Wyoming Department of Environmental Quality

Page | Safety | Tools

Home | About Us | Public Info/News | Hot Topics | Divisions | Calendar | Report Spills | FAQ | Send Comment

Search DEQ:

Search

Air Quality Administrator

Steven A. Dietrich

(307) 777-7391

Air Quality Program Links

- Announcements
- Sublette County Ozone Information
- Contacts
- Standards and Regulations
- Proposed Rules
- Regional Haze
- Open Burning and Smoke Management
- Actual Emission Inventories
- Modeling Studies
- Visibility
- Monitoring Program Information
- Natural Events Action Plan
- Title V Operating Permit Program
- Kaizen
- Advisory Board Members
- Employment Opportunities

Forms and Guidance Documents

- New Source Construction Permits
- Oil and Gas
- Coal Bed Methane
- Operating Permits
- Emission Inventory Forms
- Asbestos
- Miscellaneous

WINTER OZONE UPDATE

Monday (January 9):

Mostly sunny and dry today. Warming air aloft has allowed basin inversions to develop, however without the reinforcing cold created by abundant snow cover, elevated ozone concentrations are not expected. As a result of forecasted weather conditions elevated 8-hour ozone concentrations are not expected on Monday (January 9).

Radio Forecast MP3

What current Ozone levels mean to your health and daily activities

(EPA Pollutant Breakpoint Chart of Ozone)

Current Ozone Data

Monday, January 9, 2012; Ozone Action Day=No

Tuesday (January 10):

A mix of sunshine and clouds will accompany mostly dry weather on Tuesday. Afternoon winds may be brisk at times. There is a storm system approaching the state from the northwest, however, its final path is expected to fall east of the Divide taking the best chance of snow with it. As a result of forecasted weather conditions elevated 8-hour ozone concentrations are not expected on Tuesday (January 10).

Radio Forecast MP3

What current Ozone Levels mean to your health daily activities

(EPA Pollutant Breakpoint Chart of Ozone)

Current Ozone Data

Tuesday, January 10, 2012; Ozone Action Day=No

Winter Ozone Update

Updated Daily

Ozone Action Day

Issued 24-hours in Advance

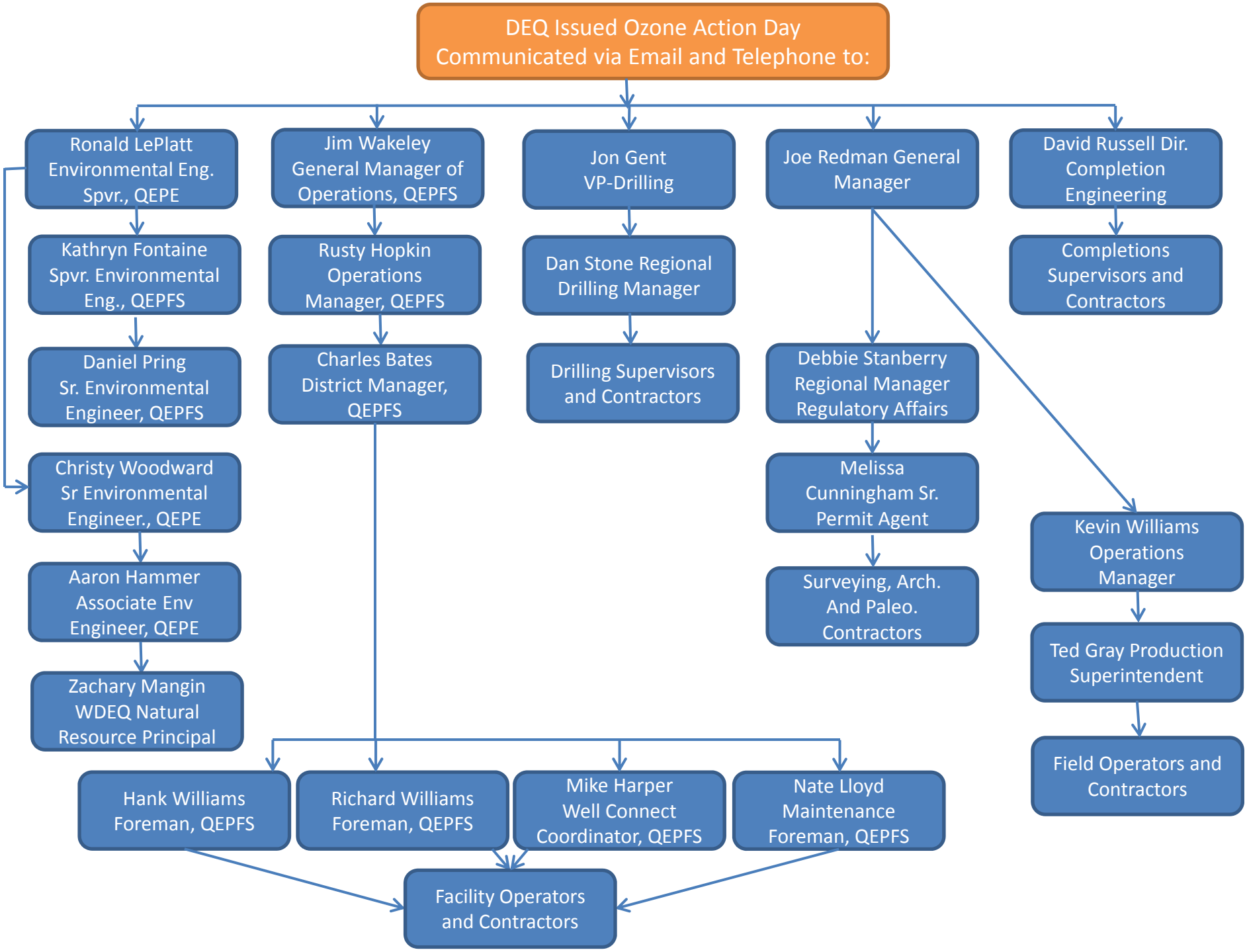
Jan. 9 Issued on Jan. 8

Jan. 10 Issued on Jan. 9

Internet | 100%

Appendix D

Notification Process Flow Diagram


DEQ Issued Ozone Action Day Communicated via Email and Telephone to:
Ronald LePlatt Environmental Eng. Spvr., QEPE
Jim Wakeley General Manager of Operations, QEPFS
Jon Gent VP-Drilling
Joe Redman General Manager
David Russell Dir. Completion Engineering
Kathryn Fontaine Spvr. Environmental Eng., QEPFS
Rusty Hopkin Operations Manager, QEPFS
Dan Stone Regional Drilling Manager
Completions Supervisors and Contractors
Daniel Pring Sr. Environmental Engineer, QEPFS
Charles Bates District Manager, QEPFS
Drilling Supervisors and Contractors
Debbie Stanberry Regional Manager Regulatory Affairs
Christy Woodward Sr Environmental Engineer., QEPE
Melissa Cunningham Sr. Permit Agent
Kevin Williams Operations Manager
Aaron Hammer Associate Env Engineer, QEPE
Surveying, Arch. And Paleo. Contractors
Ted Gray Production Superintendent
Zachary Mangin WDEQ Natural Resource Principal
Field Operators and Contractors
Hank Williams Foreman, QEPFS
Richard Williams Foreman, QEPFS
Mike Harper Well Connect Coordinator, QEPFS
Nate Lloyd Maintenance Foreman, QEPFS
Facility Operators and Contractors

Appendix E

Letter to Ozone Contingency Plan Participants
Ozone Contingency Plan Instruction Memorandum
Annual OCP Checklist

Department of Environmental Quality

To protect, conserve and enhance the quality of Wyoming's environment for the benefit of current and future generations.

Matthew H. Mead, Governor

Todd Parfitt, Director

September 30, 2014

Dear Ozone Contingency Plan Participants,

Starting with the winter of 2009, the Wyoming Department of Environmental Quality (WDEQ), Air Quality Division (AQD) has asked that oil and gas operators develop short-term emission reduction contingency plans that can be implemented with one day notice from the AQD of an impending elevated ozone forecast. The Pinedale Anticline Record of Decision (ROD) requires operators to annually develop individual contingency plans to address avoidance of wintertime ozone exceedances.

One of the ten final recommendations from the Upper Green River Basin (UGRB) Air Quality Citizens Advisory Task Force to WDEQ was to "Require contingency plan development and implementation for all oil and gas operators throughout the non-attainment area. Promote expanding contingency plans to other commercial and government entities as practicable." The WDEQ-AQD considered the Task Force recommendations and many other elements in the development of an *UGRB Ozone Strategy* to describe WDEQ's overall ozone reduction strategy. One element in the *Ozone Strategy* dated April 22, 2014 is specific to ozone contingency plans, "Continue to promote the development and implementation of ozone contingency plans, to utilize short-term emissions reduction measures on ozone action days, for all stakeholders throughout the nonattainment area."

Ozone Contingency Plans (OCPs) were received last year from four (4) governmental agencies/entities and 32 companies within the UGRB. The OCPs identified activities that would reduce emissions that could be implemented upon one-day notice from the AQD of an impending Ozone Action Day (OAD). Examples of ways to reduce emissions on OADs include deferring non-essential construction and maintenance activities, delaying the refueling of vehicles and equipment, and eliminating vehicle idling when possible. I would like to encourage you to seek additional, innovative solutions to incorporate into this year's OCP.

The AQD will again be initiating in-house weather forecasting. Forecasting by the AQD's meteorologists will consist of evaluating the possibility of a strong temperature inversion in conjunction with snow cover, clear skies, and low winds. This is the combination of factors which, when combined with ozone forming emissions, appear to result in elevated ozone levels. If it is determined that conditions are favorable for the formation of elevated ozone, DEQ will issue an OAD for the UGRB for the following day.

The AQD will continue to utilize the auto-call voice messaging and e-mail systems to notify your company of the potential of the meteorological conditions conducive for elevated ozone and an OAD. Please ensure that the contact information for the individual(s) from your company that you would like to receive this notification are current and up to date, including name, phone number, and e-mail

address. If you would like any of your subcontractors to receive this information, please make sure that we have their contact information as well. The WDEQ website, http://deq.state.wy.us will carry daily winter ozone updates (updated at noon everyday) in addition to stating whether an OAD has been issued for the following day. WDEQ will continue to notify media outlets in Sublette County.

The WDEQ will again conduct a test-run of our OAD notification mechanisms including the auto-call voice messaging and e-mail systems. A date for the test-run has not yet been established, but I will include more information about the test run of the notification system at the end of October.

As part of your OCP, you should utilize the standardized checklist during an OAD to identify control measures that were used, when they were initiated, for how long, and the responsible party. These standardized checklists will need to be sent in within ten days following each OAD, and will become part of the summary of 2015 winter OAD activities and responses.

At the end of October I will send out the Wyoming Air Quality Division: Standardized Annual Ozone Contingency Plan form with instructions and ask that you fill them out as your 2015 OCP and return them as well as updated contact information to the AQD by December 1, 2014. Please do not hesitate to contact me at (307)777-6282 or zachary.mangin@wyo.gov if you have any questions about the upcoming 2015 winter ozone season. I look forward to working with everyone in the upcoming months.

Sincerely,

Zachary Mangin

Natural Resources Program Principal

WDEQ-AQD Planning Section

Department of Environmental Quality

To protect, conserve and enhance the quality of Wyoming's environment for the benefit of current and future generations.

Matthew H. Mead, Governor

Todd Parfitt, Director

October 27, 2014

RE: Information Concerning the 2015 Ozone Action Days/OCP Implementation

Dear Ozone Contingency Plan Participants,

The Wyoming Department of Environmental Quality, Air Quality Division (AQD) has asked that Ozone Contingency Plan (OCP) Participants develop short-term emission reduction contingency plans that can be implemented with one day notice from the AQD of an impending Ozone Action Day (OAD). Upon issuance of a 24-hour advance notification from the AQD, participants are to implement as many measures as possible indicated on the standardized Ozone Contingency Plan (OCP) checklist. AQD plans to utilize the same standardized checklists as last year to track and monitor emission reduction practices throughout the non-attainment area.

The start date of the winter ozone forecasting season is January 2, 2015 with a tentative end date adjusted to March 31, 2014. However, depending on conditions in the area at that time, AQD may extend the forecasting program beyond that date, which may result in additional Ozone Action Days. Should that happen, I encourage you to continue to implement your plan.

AQD forecasters will continue to notify OCP participants of Ozone Action Day status 24 hours in advance through email and an auto-call voice messaging system. To ensure timely notification of Ozone Action Day statuses, updated contact information should be included with your "Annual OCP" submission, which is due by **Monday, December 1, 2014.** There will be a test of the auto-call and email systems on **Wednesday, December 17** to make sure that the AQD has the proper contact information for all 2015 OCP participants.

The completion of these checklists will allow the AQD to track and monitor which emission reduction activities are exercised by operators during Ozone Action Days. I would like to advocate that all possible measures be implemented with the declaration of any Ozone Action Day, though I recognize that not all measures can be implemented for each event. If an Ozone Action Day is issued, participants will have **10 days** to submit a completed Event Summary Checklist indicating which OCP measures they implemented. Consistent and timely completion of standardized checklists will bring greater insight and planning capabilities to AQD by helping illustrate how contingency plan activities may be mitigating ozone levels on Ozone Action Days.

I strongly encourage you to implement certain activities daily despite Ozone Action Day status. Several of the options (i.e. minimize vehicle and/or engine idling) are not only helpful in achieving daily emissions reductions, but are cost efficient. We appreciate the willingness of participants to voluntarily implement long-term measures to reduce ozone precursor emissions, and welcome information and feedback about those reductions. Should you determine that you are able to implement additional measures not included on the checklist, please be sure to include them on the bottom of the form.

The template "Annual OCP" checklist will be provided by e-mail and can be also be obtained online at http://deq.state.wy.us/aqd/Ozone%20Contingency%20Plans.asp. The template "Event Summary" checklist will be sent out in December, and can also be found on this website.

Please do not hesitate to contact me if you have any immediate concerns or inquires. I look forward to working with everyone in the upcoming months.

Sincerely,

Zachary Mangin

Natural Resources Program Principal
WDEQ-AQD Planning Section
zachary.mangin@wyo.gov
307-777-6282

MEMORANDUM

TO: Ozone Contingency Plan Participants

FROM: Zachary Mangin, Natural Resources Program Principal, AQD Planning Section

SUBJECT: Instructions for Completing the Standardized Ozone Contingency Plan Checklist

DATE: October 27, 2014

During previous winter seasons, the Wyoming Department of Environmental Quality, Air Quality Division requested that oil and gas operators in the Upper Green River Basin participate in an Ozone Contingency Plan (OCP) program. The aim of the OCP program was to reduce the amount of ozone precursor emissions released to ambient air on days when weather conditions were forecasted to be conducive to elevated ozone formation. Consistent completion of standardized checklists was anticipated to bring greater insight and planning capabilities to the Air Quality Department (AQD) by helping to illustrate how contingency plan activities may be mitigating ozone levels.

The AQD would like to thank all those who have participated in the OCP program in the past for their ozone precursor emission reduction activities and disclosure of those measures to the AQD. For the upcoming 2015 winter ozone season, the AQD is promoting the development and implementation of OCPs for all stakeholders throughout the ozone nonattainment area. The AQD would like to encourage OCP participants to be as specific as possible in the disclosure of ozone precursor emission reduction activities on the "Annual OCP" and "Event Summary" documents. Increased knowledge of how ozone precursor emissions are mitigated in the Upper Green River Basin will lead to effective planning by the AQD.

Similar to the last several years, the Ozone Contingency Plan checklists are standardized with the "Annual OCP" and "Event Summary" checklist differing from each other. The "Annual OCP" will indicate measures *anticipated to be completed* should an Ozone Action Day be issued by the AQD and is requested to be submitted with updated contact information to the AQD by **Monday December 1, 2014**. There will be a test of the auto-call and e-mail systems on **Wednesday, December 17** to make sure that the AQD has the proper contact information for all 2015 OCP participants. An Ozone Action Day will be issued by the AQD when weather conditions are forecasted to be conducive to the formation of elevated ozone. Should an Ozone Action Day be issued by the AQD, the Division requests that OCP participants fill out "Event Summary" checklists indicating the emission reduction activities that *were employed on that specific Ozone Action Day*. "Event Summary" checklists are to be submitted to the AQD within **10 days** of the Ozone Action Day.

ANNUAL OCP:

The "Annual OCP" format is the same as last year. Figure 1 shows the header of the "Annual OCP":

ANNUAL OCP		
Annual OCP due date:	COMPANY NAME:	
December 1, 2014	COMPANY REPRESENTATIVE:	
	DATE OF SUBMISSION:	

Figure 1. Example of "Annual OCP" form header.

The AQD requests that OCP participants submit a completed "Annual OCP" to the AQD by **Monday December 1, 2014**. The information provided to the AQD on the "Annual OCP" represents actions *anticipated to be completed* during or prior to the 2015 winter season. It is the expectation of the AQD that the majority of emissions reduction actions indicated will be completed upon the declaration of an Ozone Action Day. However, the AQD is aware that not all OCP participants may be able to initiate all measures indicated on their submitted "Annual OCP".

The format of the "Annual OCP" is to help OCP participants describe their emission reduction actions in greater detail. Figure 2 shows an example of how an OCP participant planning on implementing an emission reduction action listed on the "Annual OCP" can give the AQD greater detail about their emission reduction practices.

ACTIONS: *WDEQ-AQD is cognizant that not all companies can or will initiate all measures listed.*	**YES**	**NO**	**N / A**	**Comment Boxes:**
12. Will your company and affiliated service companies commit to defer/postpone liquid hauling into and out of the field?	X			If this action was not considered, please discuss why. Likely activity in Sector 9 where we still haul liquids via trucks. Our company should be able to defer at least 6 if not all 12 daily hauls given 24 hrs. notice by Wyoming DEQ-AQD that the next day will be an Ozone Action Day. We will document all hauls postponed due to the Ozone Action Day in the appropriate "Event Summary".
12a. On average, how many liquid hauling trips occur per day in relation to your operations? ***If this question is **not applicable (N/A)** to your company or operations, please explain why in the comment section provided to the right.	12			

Figure 2. Example of a detailed response to an item in the "Annual OCP."

Figure 3 shows an example of how an OCP participant not planning on implementing an emission reduction action can give the AQD greater insight on why they may be limited in the ability to implement the action.

ACTIONS: *WDEQ-AQD is cognizant that not all companies can or will initiate all measures listed.*	**YES**	**NO**	**N / A**	**Comment Boxes:**
5. Will your company and affiliated service companies commit to defer truck & equipment refueling to evening hours? ***If this question is **not applicable (N/A)** to your company or operations, please explain why in the comment section provided to the right.		X		If this action was not considered, please discuss why. Company A must refuel vehicles at all times of day because there are not enough fuel pumps to refuel all vehicles during evening hours. Therefore, Company A will not defer truck and equipment refueling to evening hours.

Figure 3. Non-implementation example response to an item in the "Annual OCP."

The AQD understands that each OCP participant is unique and some items may not be applicable. Figure 4 shows an example of how an emission reduction action that is not applicable and can give the AQD greater insight on why the action is not applicable.

ACTIONS: *WDEQ-AQD is cognizant that not all companies can or will initiate all measures listed.*	**YES**	**NO**	**N / A**	**Comment Boxes:**
23. Will your company and affiliated service companies commit to delay the charging of desiccant dehydration untis? ***If this question is **not applicable (N/A)** to your company or operations, please explain why in the comment section provided to the right.			X	If this action was not considered, please discuss why. Our Company does not operate desiccant dehydration units.

Figure 4. Not applicable example response to an item in the "Annual OCP."

The AQD understands that each OCP participant operates in a unique fashion. The items listed on the "Annual OCP" may not fully describe your emissions reduction practices. To accommodate this, comment boxes have been provided next to all of the items on the "Annual OCP" to allow description in greater detail the nature of their specific emissions reducing actions. An example of this is shown in Figure 5.

ACTIONS: *WDEQ-AQD is cognizant that not all companies can or will initiate all measures listed.*	**YES**	**NO**	**N / A**	**Comment Boxes:**
11. Will your company and affiliated service companies commit to utilizing various leak detection techniques to prevent/fix the venting of gas? 11a. List the type of activity that will be used to detect equipment leaks and timetables for inspection. ***If this question is **not applicable (N/A)** to your company or operations, please explain why in the comment section provided to the right.	X			If this action was not considered, please discuss why. Company B performs FLIR camera leak detection on all equipment at every production site once a year. On a daily basis, Company B employees perform an audio and visual check of equipment for leaks and other problems.

Figure 5. Example of how comment boxes in the "Annual OCP" can be utilized to further describe the emission reducing efforts implemented.

EVENT SUMMARY:

During the winter months (January – March) of 2015 the AQD may notify OCP participants that the 24 hour weather forecast is conducive to the formation of elevated ozone and will issue an Ozone Action Day for the following day. On these days, the AQD requests that OCP participants put their OCPs into action. The header of the "Event Summary" checklist is shown below in Figure 6.

Wyoming air Quality Divison: STANDARDIZED OZONE CONTINGENCY PLAN (OCP)		
EVENT SUMMARY	COMPANY NAME:	
Include DATE of OZONE ACTION DAY for Event Summary	COMPANY REPRESENTATIVE:	
	DATE OF SUBMISSION:	

Figure 6. Heading of the "Event Summary" form to be filled out on **Ozone Action Days**.

The information you provide to the AQD on the "Event Summary" represents activities you *completed on a specific Ozone Action Day*. Please submit an individual "Event Summary" checklist for each and all Ozone Action Days that occur. The AQD requests that each OCP participant fill out and submit an "Event Summary" to the AQD within **10 days** following the Ozone Action Day.

The format of the "Event Summary" checklist is to help OCP participants communicate greater specificity when describing Ozone Action Day emission reduction activities. Please note that several items on the "Event Summary" form require a response with regard to "all aspects of energy recovery and production." This includes: drilling, completion, production, construction, maintenance, and general activities. An example of this type is shown below in Figure 7.

EVENT SUMMARY for

ACTIONS: *WDEQ-AQD is cognizant that not all companies can or will initiate all measures listed.*	YES	NO	N/A	ACTION IMPLEMENTATION	COMMENTS	
20. Did your company and affiliated service companies postpone blowdown actions tied to all aspects of energy recovery and production?	X			Use the comment box to **LIST** the number of blowdowns postponed.	If this activity was not implemented, please discuss why.	
					General Activities:	Company G postponed 2 of 4 planned blowdowns on this day.
					Drilling:	Company G does not perform any Drilling operations.
***If this question is **not applicable (N/A)** to your company or operations, please explain why in the comment section provided to the right.					Completion:	Company G does not perform any Completions.
					Production:	Company G planned no Production blowdowns on this day.
					Construction:	Company G did not perform any Construction on this day.
					Maintenance:	Company G postponed 2 of 4 Maintenance blowdowns on this day.

Figure 7. Example response to an item regarding "all aspects of energy recovery and production" on the "Event Summary."

The AQD recognizes that each OCP participant operates in a unique fashion that may vary from day to day. To assist OCP participants in adequately describing Ozone Action Day emissions reducing activities, the AQD has supplied a comment box next to each emission reduction measure listed on the "Event Summary". An example of this is shown in Figure 8.

EVENT SUMMARY for

ACTIONS: *WDEQ-AQD is cognizant that not all companies can or will initiate all measures listed.*	YES	NO	N/A	ACTION IMPLEMENTATION	COMMENTS
10. Did your company and affiliated service companies minimize vehicle traffic and miles traveled? ***If this question is **not applicable (N/A)** to your company or operations, please explain why in the comment section provided to the right.	X			Use comment box to **LIST**: 1. How much vehicle traffic was minimized. 2. Total number of less miles traveled.	If this activity was not implemented, please discuss why. Company F planned 53 light duty vehicle trips and 12 heavy duty vehicle trips on this day. All 12 heavy duty vehicle trips were postponed amounting to 115 less miles traveled by heavy duty vehicles. 30 light duty vehicle trips were postponed amounting to 600 less miles traveled on this day. 432 miles were traveled by light duty vehicles on this day.

Figure 8. Example of a detailed response to an item on the "Event Summary."

Comment boxes should also be used to address why or why not an Ozone Action Day activity indicated for implementation on the "Annual OCP" may or may not have been completed and included on an "Event Summary" checklist. An example of this is displayed in Figure 9.

EVENT SUMMARY for

ACTIONS: *WDEQ-AQD is cognizant that not all companies can or will initiate all measures listed.*	YES	NO	N/A	ACTION IMPLEMENTATION	COMMENTS
22. Did your company and affiliated service companies delay line pigging? ***If this question is **not applicable (N/A)** to your company or operations, please explain why in the comment section provided to the right.		X		Use the comment box to LIST the number of planned lines to be pigged for the date of the Ozone Action Day and the number delayed.	If this activity was not implemented, please discuss why. Though Pipeline H Co. committed to delaying line pigging in its "Annual OCP", Pipeline H Co. had to pig 1 to 4 planned lines on this Ozone Action Day. The 1 pigged line was pigged because that particular pipeline was deemed a safety hazard until pigged.

Figure 9. Example response to item in the "Event Summary" that was not initiated on an Ozone Action Day though it was indicated for implementation on the "Annual OCP."

The "N/A" (not applicable) column and comment box should be used to address why an activity may not be applicable on a specific Ozone Action Day. Figure 10 shows an example of a not applicable response in the "Event Summary" checklist.

EVENT SUMMARY for

ACTIONS: *WDEQ-AQD is cognizant that not all companies can or will initiate all measures listed.*	YES	NO	N/A	ACTION IMPLEMENTATION	COMMENTS
23. Did your company and affiliated service companies delay the charging of desiccant dehydration units? ***If this question is **not applicable (N/A)** to your company or operations, please explain why in the comment section provided to the right.			X	Use the comment box to **LIST** the number of desiccant dehydration units in operation and the amount included in reduction action.	If this activity was not implemented, please discuss why. Our Company does not operate desiccant dehydration units. See Annual OCP.

Figure 10. Not applicable example response to an item in the "Event Summary".

ADDITIONAL OZONE PRECURSOR EMISSIONS REDUCTION ACTIVITIES:

The AQD recognizes that the lists of emissions reducing activities in the "Annual OCP" and "Event Summary" checklists are by no means exhaustive. If you would like to add an emissions reducing activity to either of the documents, please do so using the boxes provided at the end of the "Annual OCP" and "Event Summary". Figure 11 shows an example of how to add an emission reducing activities to the "Annual OCP" and Figure 12 shows an example of how to do so on the "Event Summary."

29. List any year-round emission reduction activities your company employs:
Company C busses all employees to work sites every day in order to reduce emissions from vehicle traffic.

30. List any "winter season" emission reduction activities implemented regardless of Ozone Action Day status: *(include listed and unlisted activities)*
Company D plans to decrease the glycol circulation in dehydration units by half during the winter months.

31. List anticipated future emission reduction activities or ideas: *(i.e., operational procedures & equipment changes that help minimize emissions)*
Company E plans to replace all diesel generators with solar power and wind turbines. 10% of diesel generators will be replaced by January 2012, 50% by January 2015, and 100% by January 2020.

WDEQ-AQD is cognizant that not all companies can or will initiate all measures listed.

Figure 11. Example of how to add an ozone precursor emissions reducing activity to the "Annual OCP."

29. List Ozone Action Day specific emission reduction activities not listed.
(List any and all emission reduction activities your company and associated service companies do that are not listed)
Company I postponed 2 condensate hot oil jobs.

WDEQ-AQD is cognizant that not all companies can or will initiate all measures listed.

Figure 12. Example of how to add an ozone precursor emissions reducing activity to the "Event Summary."

Individual template forms of the "Annual OCP" and "Event Summary" documents will be provided by and can be obtained from the AQD as well as online at:
http://deq.state.wy.us/aqd/Ozone%20Contingency%20Plans.asp

Thank you once again for your cooperation with the Ozone Contingency Plan program. If you have any more questions concerning these two documents please do not hesitate to contact Zachary Mangin.

Zachary Mangin

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WDEQ-AQD Planning Section
122 West 25th Street
Herschler Building, 2 East
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Wyoming air Quality Division: STANDARDIZED OZONE CONTINGENCY PLAN (OCP)

ANNUAL OCP		
Annual OCP due date:	COMPANY NAME:	QEP Resources, Inc.
December 1, 2014	COMPANY REPRESENTATIVE:	Aaron Hammer
	DATE OF SUBMISSION:	25-Nov-14

*Annual OCP submissions represent measures ANTICIPATED to be completed on an Ozone Action Day.

NOTES:
References to "all aspects of energy recovery and production" apply to Drilling, Completion, Production, Construction, Maintenance and other general activities.
Comment Boxes: Use to answer and expand upon any activity question or individual process.
The ANNUAL OCP checklist is a SEPARATE form from the Event Summary checklist. Both can be found online @ http://deq.state.wy.us/aqd/Ozone%20Contingency%20Plans.asp
Submit via email to: zachary.mangin@wyo.gov

ACTIONS: ***WDEQ-AQD is cognizant that not all companies can or will initiate all measures listed.***	**YES**	**NO**	**N/A**	**Comment Boxes:**
A. **Annual OCP submittal only:** Most current contact information for company representative(s) with regard to all wintertime ozone actions/literature.	X			Please See QEP's attached contact notification list.
B. **Annual OCP submittal only:** Submit as an attachment to WDEQ-AQD a comprehensive list of contractors/sub-contractors and service companies under contract with your company and role in ozone contingency plan implementation. zachary.mangin@wyo.gov ***If this question is **not applicable (N/A)** to your company or operations, please explain why in the comment section provided to the right.	X			QEP believes that it is the operator's responsibility to train and notify contractors for ozone contingency plan implementation. QEP commits to training and notification of it contractos and will document all training and notifications, as in previous years. QEP's contractor list is attached.
C. **Annual OCP submittal only:** Will your company commit to providing PRE-SEASON ozone contingency plan (OCP) awareness training for company personnel and all associated service company personnel? ***If this question is **not applicable (N/A)** to your company or operations, please explain why in the comment section	X			Completion date: Company personnel training is scheduled for December 2014
D. Does your company plan on utilizing Best Management Practices (BMPs)? ***If this question is **not applicable (N/A)** to your company or operations, please explain why in the comment section provided to the right.	X			If utilization of BMPs is not considered, please discuss why.
E. **Annual OCP submittal only:** Will your company and affiliated service companies commit to the suspension/shut-in of ALL energy recovery and production operations during the winter months? (Jan. 2 - Mar. 31)		X		It is not feasible from an operational or safety standpoint to shut a field in for this extended period of time.

Annual OCP for: QEP Resources, Inc.

ACTIONS: ***WDEQ-AQD is cognizant that not all companies can or will initiate all measures listed.***	**YES**	**NO**	**N / A**	**Comment Boxes:**
1. Will your company commit to providing a pre-shift awareness update regarding Ozone Action Day status/Contingency Plan implementation for all immediate staff and contracted employees? ***If this question is **not applicable (N/A)** to your company or operations, please explain why in the comment section provided to the right.	X			If this action was not considered, please discuss why.
2. Will staff and affiliated service company employees be notified of an impending Ozone Action Day? 2a. How will this be achieved? (Attach a separate sheet of the notification process if necessary.) ***If this question is **not applicable (N/A)** to your company or operations, please explain why in the comment section provided to the right.	X			If this action was not considered, please discuss why. QEP will notify all necessary personnel following QEP's Notification Process Flow diagram attached. QEP will document notification of personnel and contractors, as in previous years.
3. Will your company and affiliated service companies commit to not overfilling gas tanks, and tighten fuel caps on vehicles associated with all aspects of energy recovery and production? (i.e., trucks, engines, snowcats, etc.) ***If this question is **not applicable (N/A)** to your company or operations, please explain why in the comment section provided to the right.	X			If this action was not considered, please discuss why.
4. Will your company and affiliated service companies commit to minimize the idling of vehicles & engines associated with all aspects of energy recovery and production? (i.e., trucks, engines, construction equipment, etc.) ***If this question is **not applicable (N/A)** to your company or operations, please explain why in the comment section provided to the right.	X			If this action was not considered, please discuss why.
5. Will your company and affiliated service companies commit to defer truck & equipment refueling to evening hours? ***If this question is **not applicable (N/A)** to your company or operations, please explain why in the comment section provided to the right.	X			If this action was not considered, please discuss why.

Annual OCP for: QEP Resources, Inc.

ACTIONS: ***WDEQ-AQD is cognizant that not all companies can or will initiate all measures listed.***	**YES**	**NO**	**N / A**	**Comment Boxes:**
6. Will your company and affiliated service companies commit to keeping vehicles tuned up and tires properly inflated? ***If this question is **not applicable (N/A)** to your company or operations, please explain why in the comment section provided to the right.	X			If this action was not considered, please discuss why.
7. Will your company and affiliated service companies commit to using environmentally safe paints, cleaning products & chemicals? (i.e., non-aerosol, low VOC paints) ***If this question is **not applicable (N/A)** to your company or operations, please explain why in the comment section provided to the right.	X			If this action was not considered, please discuss why.
8. Will your company and affiliated service companies commit to reducing driving speed by 5 mph? ***If this question is **not applicable (N/A)** to your company or operations, please explain why in the comment section provided to the right.	X			If this action was not considered, please discuss why.
9. Will your company and affiliated service companies commit to minimize the use of ancillary equipment with respect to all aspects of energy recovery and production? (i.e., light plants, portable generators, pumps, etc.) ***If this question is **not applicable (N/A)** to your company or operations, please explain why in the comment section provided to the right.	X			If this action was not considered, please discuss why.
10. Will your company and affiliated service companies commit to minimize vehicle traffic and miles traveled? (consolidate trips, car-pool, postpone travel etc.) ***If this question is **not applicable (N/A)** to your company or operations, please explain why in the comment section provided to the right.	X			If this action was not considered, please discuss why.
11. Will your company and affiliated service companies commit to utilizing various leak detection techniques to prevent/fix the venting of gas? 11a. List the type of activity that will be used to detect equipment leaks and timetables for inspection. ***If this question is **not applicable (N/A)** to your company or operations, please explain why in the comment section provided to the right.	X			If this action was not considered, please discuss why. Leak detection is conducted on an a semi-annual schedule utilizing forward looking infrared cameras and gas leak detection instruments QEP personnel conduct daily visual and auditory inspections of equipment for leaks and other problems.
12. Will your company and affiliated service companies commit to defer/postpone liquid hauling into and out of the field? 12a. On average, how many liquid hauling trips occur per day in relation to your operations? ***If this question is **not applicable (N/A)** to your company or operations, please explain why in the comment section provided to the right.	X 1			If this action was not considered, please discuss why.
13. Will your company and affiliated service companies commit to suspend and/ or reschedule the use of diesel and, or gasoline powered equipment associated with all aspects of energy recovery and production? (i.e., generators, engines, vehicles, etc.) ***If this question is **not applicable (N/A)** to your company or operations, please explain why in the comment section provided to the right.	X			If this action was not considered, please discuss why. When safely feasible
14. Will your company and affiliated service companies commit to postpone construction activities associated with all aspects of energy recovery and production? ***If this question is **not applicable (N/A)** to your company or operations, please explain why in the comment section provided to the right.	X			If this action was not considered, please discuss why. QEP will commit to postpone nonesssential construction activities
15. Will your company and affiliated service companies commit to postpone maintenance activities associated with all aspects of energy recovery and production? ***If this question is **not applicable (N/A)** to your company or operations, please explain why in the comment section provided to the right.	X			If this action was not considered, please discuss why. QEP will commit to postpone nonesssential maintenance

Annual OCP for: QEP Resources, Inc.

ACTIONS: ***WDEQ-AQD is cognizant that not all companies can or will initiate all measures listed.***	**YES**	**NO**	**N / A**	**Comment Boxes:**
16. Will your company and affiliated service companies commit to limit, and or suspend drilling operations on Ozone Action Days?		X		If this action was not considered, please discuss why. Complete shut down of a rig would likely result in freezing of critical rig components, including well control equipment. This would eliminate a layer of well control redundancy required by Onshore Order 2. Rig shutdown also could lead to a well control situation because the inability to agitate drilling mud could result in an artificially low mud weight. Shutting down while drilling would require the rig to trip out of hole to prevent sticking pipe. Tripping pipe is a high horsepower operation which would generate more emissions at a point when emission reduction is the goal.There are different operational and safety risks related to partial shutdown dependent on the actual operation at the time of an OAD. If an OAD occurs while a rig is in the intermediate hole section, the main concern is sticking pipe. To prevent sticking pipe, the drill rig would need to trip out of the hole, increasing emissions. The primary concern in the production hole is a well control situation. If the well begins to flow, operations must be resumed and would likely result in flaring, adding additional emissions when emission reduction is the
16a. Will your company and affiliated service companies commit to limit, and or suspend drilling operations throughout the entire winter ozone season? (Jan. 2 - Mar. 31) ***If this question is **not applicable (N/A)** to your company or operations, please explain why in the comment section provided to the right.		X		
17. Will your company and affiliated service companies commit to postpone fracking operations on Ozone Action Days?	X			If this action was not considered, please discuss why. When feasible
17a. Will your company and affiliated service companies commit to postpone fracking operations for the entire winter season? (Jan. 2 - Mar. 31)		X		
17b. How many engines does your company/service companies use per frac? Include number of controlled engines in use on typical frac. (i.e., 6 engines used, 3 controlled) ***If this question is **not applicable (N/A)** to your company or operations, please explain why in the comment section provided to the right.	6 Tier IV Frac Engines			
18. Will your company and affiliated service companies commit to postpone the initiation of new completion actions on Ozone Action Days?	X			If this action was not considered, please discuss why. When feasible
18a. Will your company and affiliated service companies commit to postpone the initiation of new completion actions for the entire winter season? (Jan. 2 - Mar. 31) ***If this question is **not applicable (N/A)** to your company or operations, please explain why in the comment section provided to the right.		X		
19. Will your company and affiliated service companies commit to postpone the initiation of re-completion/work over actions on Ozone Action Days?	X			If this action was not considered, please discuss why. When feasible
19a. Will your company and affiliated service companies commit to postpone the initiation of re-completion/work over actions for the entire winter season? (Jan. 2 - Mar. 31) ***If this question is **not applicable (N/A)** to your company or operations, please explain why in the comment section provided to the right.		X		
20. Will your company and affiliated service companies commit to postpone blowdown actions tied to all aspects of energy recovery and production? ***If this question is **not applicable (N/A)** to your company or operations, please explain why in the comment section provided to the right.	X			If this action was not considered, please discuss why. When feasible
21. Will your company and affiliated service companies commit to turn down or control uncontrolled pneumatic heat trace pumps? ***If this question is **not applicable (N/A)** to your company or operations, please explain why in the comment section provided to the right.	X			If this action was not considered, please discuss why. Most of QEP's pneumatic heat trace pumps are controlled. For the few that are uncontrolled, QEP will commit to turn down the pumps.
22. Will your company and affiliated service companies commit to delay line pigging? ***If this question is **not applicable (N/A)** to your company or operations, please explain why in the comment section provided to the right.	X			If this action was not considered, please discuss why. When Feasible
23. Will your company and affiliated service companies commit to delay the charging of desiccant dehydration units? ***If this question is **not applicable (N/A)** to your company or operations, please explain why in the comment section provided to the right.			X	If this action was not considered, please discuss why. QEP does not utilize dessicant dehyrdation units
24. Will your company and affiliated service companies commit to short-term glycol dehydration unit shut down? ***If this question is **not applicable (N/A)** to your company or operations, please explain why in the comment section provided to the right.		X		If this action was not considered, please discuss why. Field wide shut-in of production equipment during cold weather conditions would require that all equipment be de-pressured. De-pressuring production equipment would result in the release of a substantial quantity of methane and VOC emissions to atmosphere, which would ultimately increase the possibility of ozone formation. After an extended shut-in of production, well pressures increase to higher than normal operating pressure which increases the possibility of hydrate formation (freezing) within piping and equipment. In order to manage hydrate formation during start up of production, additional emission releases would be required. As such, QEP will concentrate its efforts on assuring that the emission control equipment installed on its facilities are operating within the WDEQ control efficiency requirements.

Annual OCP for: QEP Resources, Inc.

ACTIONS: ***WDEQ-AQD is cognizant that not all companies can or will initiate all measures listed.***	**YES**	**NO**	**N / A**	**Comment Boxes:**
25. Will your company and affiliated service companies commit to reducing glycol dehydration circulation rates on an Ozone Action Day?		X		If this action was not considered, please discuss why. Circulation rates are set to achieve pipeline contract dewpoint and volume of gas produced.
25a. Will your company and affiliated service companies commit to reducing glycol dehydration circulation rates for the entire winter season? (Jan. 2 - Mar. 31) 25b. List actions/controls already in place that reduce glycol dehydrator emissions. ***If this question is **not applicable (N/A)** to your company or operations, please explain why in the comment section provided to the right.		X		
26. Will your company and affiliated service companies commit to shutting down uncontrolled equipment associated with all aspects of energy recovery and production? (i.e., dehydration units, engines, pneumatic pumps?) 26a. List equipment likely to be targeted for this action. ***If this question is **not applicable (N/A)** to your company or operations, please explain why in the comment section provided to the right.		X		If this action was not considered, please discuss why. QEP will commit to shutting in single well facilities with no control on the dehydrators, when safely feasible.
27. Will your company and affiliated service companies commit to controlling uncontrolled equipment associated with all aspects of energy recovery and production? 27a. List percentage of currently controlled equipment. Include date that 100% of equipment is anticipated to be controlled. ***If this question is **not applicable (N/A)** to your company or operations, please explain why in the comment section provided to the right.		X		If this action was not considered, please discuss why. QEP will control its remaining uncontrolled sources as each pad is modified. Drill Rigs: 100% controlled Dehys: 96% controlled, Condensate tanks: 100% controlled Heat trace pumps: 99% controlled Liquid level controller: 100% replaced with low bleed dump valve controllers Other pneumatics (methanol injection pumps, pneumatic wellhead flow controllers): 60% controlled
28. Will your company and affiliated service companies commit to the suspension/shut-in of all energy recovery & production operations during a specific WDEQ-AQD declared Ozone Action Day? (short-term) ***If this question is **not applicable (N/A)** to your company or operations, please explain why in the comment section provided to the right.		X		If this action was not considered, please discuss why. Field wide shut-in of production equipment during cold weather conditions would require that all equipment be de-pressured. De-pressuring production equipment would result in the release of a substantial quantity of methane and VOC emissions to atmosphere, which would ultimately increase the possibility of ozone formation. After an extended shut-in of production, well pressures increase to higher than normal operating pressure which increases the possibility of hydrate formation (freezing) within piping and equipment. In order to manage hydrate formation during start up of production, additional emission releases would be required. As such, QEP will concentrate its efforts on assuring that the emission control equipment installed on its facilities are operating within the WDEQ control efficiency requirements.

29. List any year-round emission reduction activities your company employs:

As part of its standard operating procedures, QEP implements the following year round good housekeeping measures: keep vehicles tuned up and tires well inflated to increase mileage and reduce the need for refueling, do not overfill fuel tanks when re-fueling, tighten fuel caps, use environmentally safe products, properly use and seal cleaners, paints, and other chemicals, and share best management practices with other operators.
In addition to these standard procedures, liquids and condensate from QEP's Pinedale lease operations have been transported via its Liquids Gathering System since late 2005.
Selective Catalytic Reduction emission controls are installed on all of QEP's drill rig engines operating in the Pinedale Field. In late 2013, all drill rig engines operating in the Pinedale Field were converted to a bi-fuel system (average 50% natural gas substitution rate).
QEP utilizes onsite mud plants to reduce trucking distances for transport of drilling fluids. QEP performs flareless completions over 99% of the time.
QEP has added 11 CNG vehicles to its Pinedale fleet. QEP conducts semi-annual FLIR camera inspections on facilities on all pads in the Pinedale field and conducts FLIR camera inspection prior to new facilities being put into production.
Drill Rigs: 100% controlled, Liquid level controller: 100% replaced with low bleed dump valve controllers, Heat trace pumps: 99% controlled, Dehys: 96% controlled, Condensate tanks: 100% controlled, Other pneumatics (methanol injection pumps, pneumatic wellhead flow controllers): 60% controlled

30. List any "winter season" emission reduction activities implemented regardless of Ozone Action Day status: *(include listed and unlisted activities)*

Throughout the winter season, QEP reduces idling of vehicles, busses crews to drill rigs and frac operations, minimizes use of or turns off engines (e.g. water pumps, light plants) during daylight hours, and limits vehicle and ancillary equipment idle time.
Additionally, for the 2014/2015 winter season QEP will postpone completion activities during the months of December and January, beginning operations in February.

31. List anticipated future emission reduction activities or ideas: *(i.e., operational procedures & equipment changes that help minimize emissions)*

As QEP expands its drilling program onto existing pads, QEP will upgrade emission controls for wells on those pads grandfathered under previous air quality standards.
As QEP Pinedale fleet vehicles are retired, they will be replaced with cleaner burning CNG vehicles.

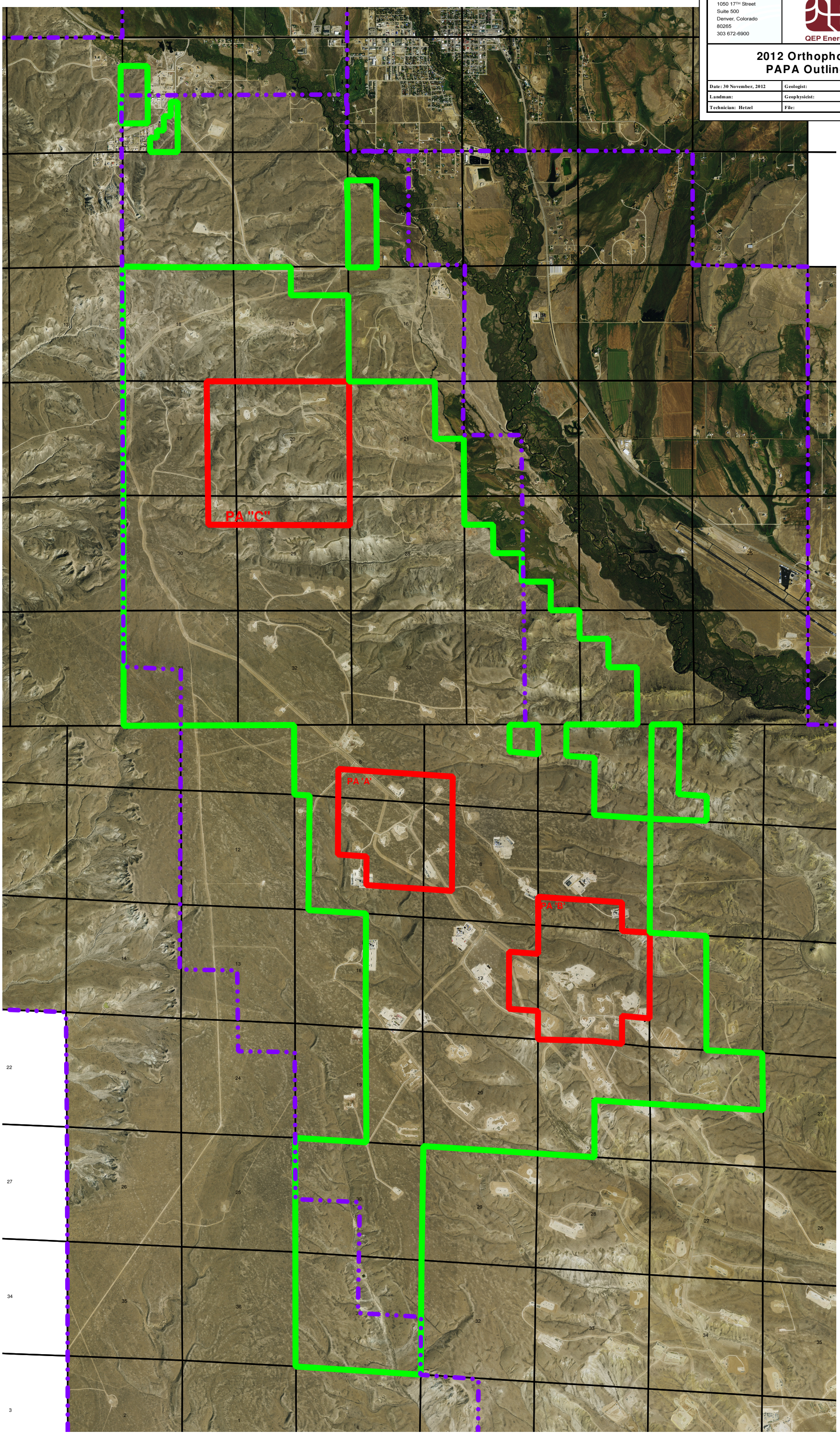
WDEQ-AQD is cognizant that not all companies can or will initiate all measures listed.

Figure 1

QEP Well Pad/Lease Locations

1050 17TH Street
Suite 500
Denver, Colorado
80265
303 672-6900

QEP Energy Company

2012 Orthophoto
PAPA Outline

Date: 30 November, 2012	Geologist:
Landman:	Geophysicist:
Technician: Hetzel	File: