



Eastern Kern

Air Pollution Control District

Gary Ray, Jr.
Air Pollution Control Officer

May 13, 2024

Curt Hildebrand
VP Comm. Affairs
Willow Rock Energy Storage Center
1125 17th Street, Suite 700
Denver, CO 80202

SUBJECT: Notice of Final Determination of Compliance (FDOC)
Project No.: 240308 - Willow Rock Energy Storage Center (21-AFC-02)

Dear Mr. Hildebrand:

Enclosed is the District's Final Determination of Compliance (FDOC) for the installation of Four (4) Emergency Diesel Fueled Piston Engines as part of your Advance Compressed Air Energy Storage (A-CAES) facility located near Rosamond.

The notice of preliminary decision for this project was published on April 08, 2024. No comments were received during the public comment period. The FDOC is expected to be published on May 20, 2024 or the next newspaper publication date.

Pursuant to EKAPCD Rule 303, Section II, prior to issuance of an Authority to Construct, an Engineering Analysis Fee is required in the amount of \$110 per hour of time required to process the application. Additionally, pursuant to Rule 301, Section II, permit fees for the first year of operation as well as publication fees are due as shown on the included invoice. The enclosed invoice shows total fees due. Attached to the invoice is a copy of our engineering time accounting.

Thank you for your cooperation in this matter. Should you have any questions, please telephone Miguel Sandoval of our office at (661) 862-5250.

Sincerely,

A handwritten signature in blue ink that reads "Gary Ray, Jr." in a cursive style.

Gary Ray, Jr.
Air Pollution Control Officer

GR:MS:cb

**NOTICE OF FINAL DECISION FOR THE ISSUANCE OF
DETERMINATION OF COMPLIANCE**

NOTICE IS HEREBY GIVEN that the Eastern Kern Air Pollution Control District has issued a Final Determination of Compliance (DOC) to GEM A CAES LLC for the installation of Four (4) Emergency Diesel Fueled Piston Engines as part of their Advanced Compressed Air Energy Storage (A-CAES) facility located at SE Section 33, T10N, R12W near Rosamond, CA. No comments were received during the comment period.

The California Energy Commission (CEC) is the lead agency for this project, therefore, construction for this project can commence only after approval by the CEC. For further information on this project please contact Leonida Payne Project Manager for the CEC or visit the CEC website at: <https://www.energy.ca.gov/powerplant/caes/willow-rock-energy-storage-center>. The DOC review for this project (Project # 240308) and application number 0570001-004, is available for public inspection at the District office (2700 "M" Street, Suite #302, Bakersfield, CA 93301) and at the District website www.kernair.org. For DOC information please contact Miguel Sandoval of the District at 661-862-5250.

AUTHORITY TO CONSTRUCT ENGINEERING EVALUATION

Reviewed by: _____
Title: APCO EKAPCD
Date: _____

Applicant: **Willow Rock Energy Storage Center**

Mailing Address: 1125 17th Street, Suite 700
Denver, CO 80202

Contact Name: Curt Hildebrand, VP Comm. Affairs
Phone Number: 925-872-3791

Fax Number: curt.hildebrand@hydrostor.ca

Application No.: **0570001-004**

Project #: 240308

Location: 0.4 mi West of SR14 on Dawn Rd., Rosamond QS/T/R: SE33/T10N/R12W
Latitude: 34.91209 Longitude: -118.15657

Project Title: Four (4) Emergency Diesel Fueled Piston Engines

App. Rec.: 3/8/2024
180 Days: 9/21/2024

Deemed Complete: 3/25/2024
Submittal Date: 4/1/2024

Evaluation By: Miguel Sandoval

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I. PROPOSAL:

GEM A-CAES LLC (applicant) is proposing to construct a new compressed air energy storage facility under the name Willow Rock Energy Storage Center (WRESC). WRESC will be a nominal 520-megawatt (MW) gross facility using Hydrostor, proprietary, advanced compressed air energy storage (A-CAES) technology. The facility will utilize non-peak power produced from nearby solar facilities to compress air. The compressed air will be stored in a 2,000-ft underground cavern displacing water into a surface storage reservoir. During peak energy demand the compressed air will be expanded through turbines generating dispatchable power. The only permitted emission sources at the facility will consist of four (4) Emergency Diesel Piston Engines. The power plant project is required to undergo certification by the California Energy Commission. Therefore, as part of the certification process the District will issue a determination of compliance (DOC) in lieu of ATCs. The DOC is functionally equivalent to an ATC. The proposed engines consist of three (3), 2,500-kW emergency generators driven by 3,621 diesel fueled piston engines and one emergency fire pump driven by 460-bhp diesel

piston engines. The Diesel engines will be new to the District (EKAPCD); therefore, project will be evaluated for Best Available Control Technology (BACT), in accordance with Rule 210.1 and subject to the Airborne Toxics Control Measures (ATCM) of the Title 17 California Code of Federal Regulations (CCR) Section 93115-93115.15. Diesel engine exhaust is a source of HAP emissions; therefore, a screening health risk assessment will be conducted to determine if a more refined risk assessment is required. There are no kindergarten through 12-grade schools within 1000-feet of the diesel engine site; therefore, a school notice in accordance with California Health and Safety Code Section 42301.6 is not required.

II. APPLICABLE RULES and REGULATIONS:

- A. Rule 201 - Permits Required (Amended 05/02/96)
Any person building, altering, or replacing any equipment, the use of which may cause the issuance of air contaminants or the use of which may eliminate or reduce or control the issuance of air contaminants, shall first obtain authorization for such construction from the APCO. An Authority to Construct (ATC) shall remain in effect until the permit to operate the equipment for which the application was filed is granted, denied, or canceled.
- B. Rule 208.2 – Criteria for finding of No Significant Environmental Impact [California Environmental Quality Act (CEQA)] (Amended 05/02/96)
Establishes criteria by which a project under review by EKAPCD can be found to have no potential for causing a significant environmental impact, and, thus, be granted a general rule exemption pursuant to Section 15061 (b)(3) of the State CEQA Guidelines.
- C. Rule 210.1 - New and Modified Stationary Source Review (Amended 07/11/96)
1) Provide for pre-construction review of new and modified stationary sources of affected pollutants to insure emissions will not interfere with the attainment of ambient air quality standards.
2) Insure that appropriate new and modified sources of affected pollutants are constructed with Best Available Control Technology, and
3) Provide for no significant net increase in emissions from new and modified stationary sources for all non-attainment pollutants and their precursors.
- D. Rule 401 - Visible Emissions (Amended 11/29/93)
A person shall not discharge into the atmosphere emissions as dark as or darker than Ringelmann 1 or 20% opacity for more than 3 minutes in any one hour.
- E. Rule 404.1 - Particulate Matter Concentration (Amended 01/24/07)
A person shall not discharge particulate matter in excess of 0.1 grains per cubic foot of gas at standard condition from any single source operation.
- F. Rule 407 - Sulfur Compounds (Adopted 04/18/72)
A person shall not discharge into the atmosphere sulfur compounds, which would exist as a liquid or gas at standard conditions, exceeding in concentration at the point of discharge: 0.2 percent by volume calculated as sulfur dioxide (SO₂).
- G. Rule 419 - Nuisance (Adopted 4/18/72 Renumbered 5/89) and California Health and Safety Code (CH&SC) 41700
A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health or safety of any such persons or the public or which cause or have a natural tendency to cause injury or damage to business or property.

- H. Rule 423 – National Emissions Standards for Hazardous Air Pollutants (40 CFR 63 Subpart ZZZZ: National Emissions Standards for Reciprocating Internal Combustion Engines) (Amended 01/13/11)
Establishes national emission and operating limitations for hazardous air pollutants (HAP) emitted from stationary reciprocating internal combustion engines (RICE) located at a major and area sources of HAP emissions. Requirements to demonstrate initial and continuous compliance with limitations are also established.
- I. Rule 427 – Stationary Piston Engine (Amended 11/01/01)
The purpose of this Rule is to limit oxides of nitrogen from stationary piston engine to levels consistent with Reasonable Available Control Technology (RACT) to satisfy California Health & Safety Code (CH&SC) Section 40918 (b)
- J. California Code of Regulation (CCR), Title 17, Section 93115
Airborne Toxic Control Measure (ATCM) for stationary stand-by compression engine.

III. **EQUIPMENT SCHEMATIC:**

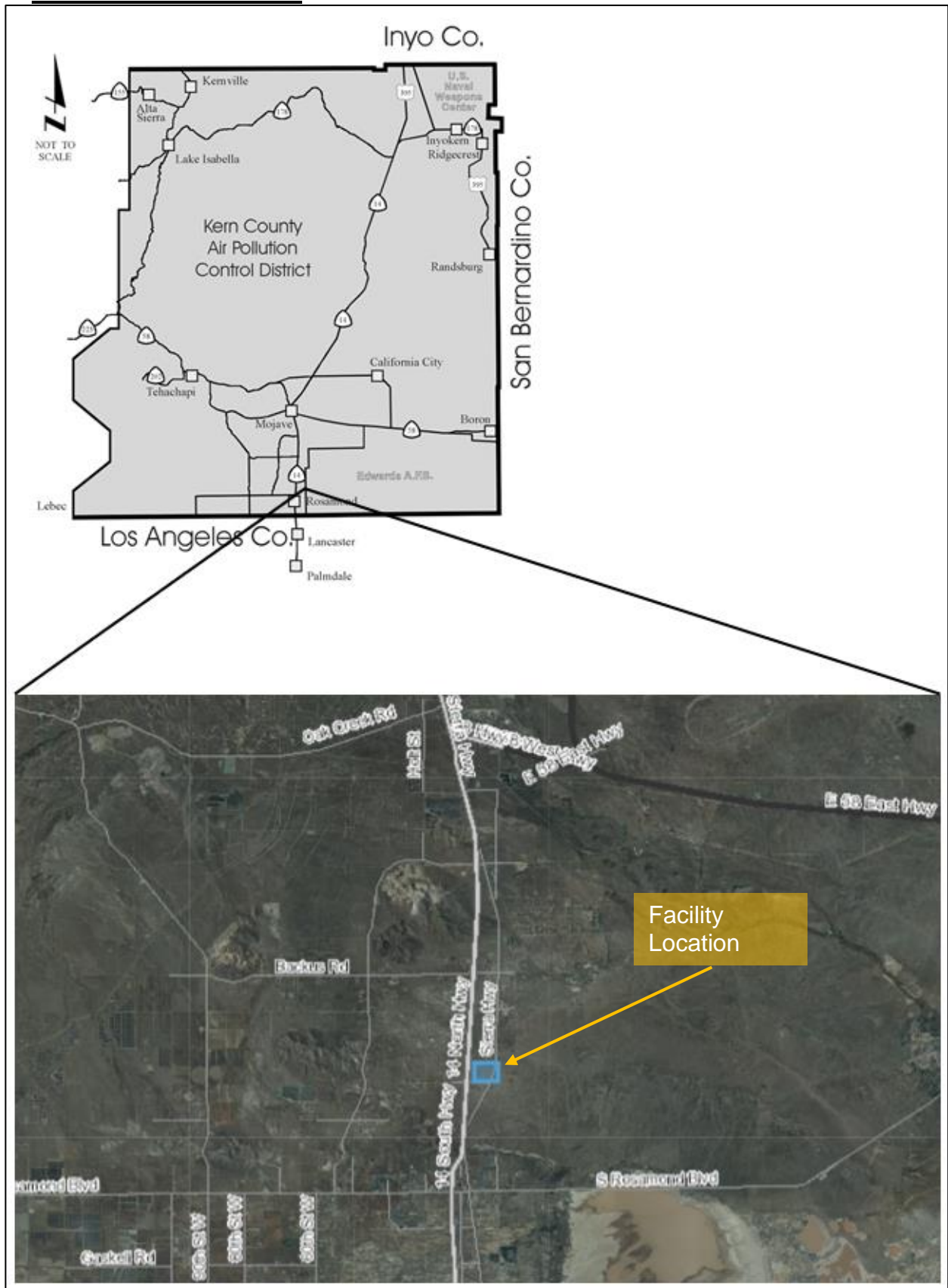


Figure 1: General Vicinity of WRESA

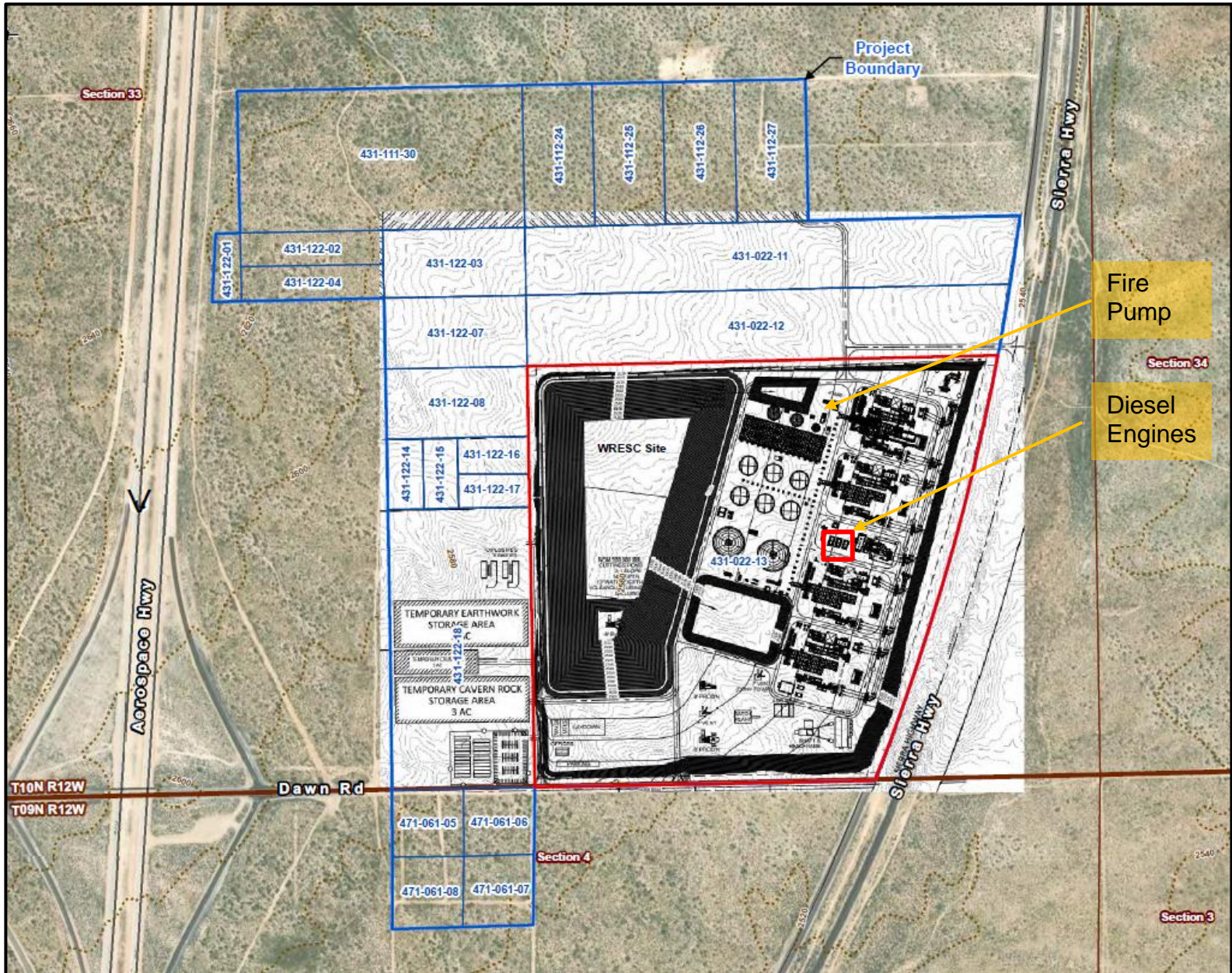


Figure 2: General Location of Engines

IV. EQUIPMENT LISTING: Four (4) Emergency Diesel Fueled Piston Engines, including the following equipment and design specifications:

0570001-003:

2,500-kW Kohler emergency generator set model KD2500, driven by 3,621-bhp Liebherr Machines Bulle Model KD62V12-6CNS, EPA Certified (Tier 4) diesel fueled piston engine with turbocharger, after cooler, and Selective Catalytic Reduction (SCR). (EPA family PLHAL103.ESP and S/N TBD).

0570004:

Emergency fire pump, driven by 460-bhp Cummins Model QSX15, EPA Certified (Tier 3) diesel fueled piston engine with turbocharger and after cooler. (EPA family RCEXL015.AAH and S/N TBD).

V. ENGINEERING ANALYSIS:

0570001-004:

Combustion of diesel fuel generates criteria air pollutants: particulate matter of 10 microns or less (PM₁₀), volatile organic compounds (VOC), carbon monoxide (CO), oxides of sulfur (SO_x) and oxides of nitrogen (NO_x). PM₁₀, VOC, NO_x, and CO emissions will be calculated using Airborne Toxic Control Measure (ATCM) emission limits for proposed engine category. SO_x emissions would be obtained by performing a mass balance calculation using engine average fuel use and sulfur concentration.

A. Toxic Emission Screening Health Risk Assessment:

Combustion of diesel fuel generates toxic air contaminants. Applicant completed a Health Risk Assessment (HRA) for the proposed emergency engines. The latest version (version 23132) of the AERMOD dispersion model was used (U.S. EPA 2021a). AERMOD is appropriate for use in estimating ground-level short-term ambient air concentrations resulting from non-reactive buoyant emissions from sources located in simple, intermediate, and complex terrain. Five years of surface meteorological data (2018 to 2022) from the Lancaster/Fox Field Airport (approximately 19 km south of the WRESC Site) were combined with concurrent upper air data from Harry Reid International Airport in Las Vegas, Nevada. The latest version of AERMAP (version 18081) was used to determine receptor elevations and hill-slope factors utilizing the U.S. Geological Survey's 1-degree square NED (U.S. EPA 2018).

For the full impact analyses, a nested grid was developed to fully represent the initial location and extent of significance area(s) and maximum impact area(s). The nested grid was composed of receptors placed along the proposed WRESC ambient boundary fence lines (both the architectural berm and no-architectural berm options) with 20-meter spacing.

1. HRA Results (Cancer Risk):

Table 5.9-7: Health Risk Assessment Summary for the Operations Phase

Architectural berm Option							
Type of Risk	Receptor Type	Exposure Duration	Risk ^{a,b}	Above Significance Thresholds?	Receptor ID	UTM E (meters)	UTM N (meters)
Cancer	PMI	30 Years	3.16	No	61	394,832.36	3,863,973.48
	MEIR		0.0177	No	4,494	393,510.00	3,865,110.00
	MEIS		0.00884	No	1,911	393,160.00	3,858,860.00
	MEIW	25 Years	5.20E-09	No	4,494	393,510.00	3,865,110.00

Type of Risk	Receptor Type	Exposure Duration	Risk ^{a,b}	Above Significance Thresholds?	Receptor ID	UTM E (meters)	UTM N (meters)
Chronic HI	PMI	Annual	7.14E-04	No	61	394,832.36	3,863,973.48
	MEIR		4.00E-06	No	4,494	393,510.00	3,865,060.00
	MEIS		2.00E-06	No	1,911	393,160.00	3,858,860.00
	MEIW		4.00E-06	No	4494	393,510.00	3,865,110.00

^a Cancer risk values are expressed in in chances per 1 million to allow direct comparison with EKAPCD public notification and significant risk levels. For example, 3.16 in a 1 million risk at the PMI receptor is less than the public notification threshold of 10 in 1 million and less than the significant risk threshold of 100 in 1 million. Values less than 0.001 in 1 million are expressed in scientific notation. For example, 5.20E-09 is equivalent to 0.0000000052

^bChronic HI values are expressed in scientific notation, since all values are less than 0.001 and well below the EKAPCD significance threshold of 1.

MEIR = maximum exposed individual residential; MEIS = maximum exposed individual sensitive; MEIW = maximum exposed individual worker; PMI = point of maximum impact; UTM = Universal Transverse Mercator

Table 5.9-8: Health Risk Assessment Summary for the Operations Phase

No-Architectural berm Option							
Type of Risk	Receptor Type	Exposure Duration	Risk ^{a,b}	Above Significance Thresholds?	Receptor ID	UTM E (meters)	UTM N (meters)
Cancer	PMI	30 Years	3.16	No	40	394,833.27	3,863,977.23
	MEIR		0.0177	No	4,388	393,480.00	3,865,110.00
	MEIS		0.00884	No	1,848	393,160.00	3,858,860.00
	MEIW	25 Years	5.20E-09	No	4,388	393,480.00	3,865,110.00
Chronic HI	PMI	Annual	7.14E-04	No	40	394,833.27	3,863,977.23
	MEIR		4.00E-06	No	4,388	393,480.00	3,865,110.00
	MEIS		2.00E-06	No	1,848	393,160.00	3,858,860.00
	MEIW		4.00E-06	No	4,388	393,480.00	3,865,110.00

According to the HRA, offsite residents or workers will not be exposed to a cancer risk greater than 1 in a million. The maximum cancer risk to a resident or offsite worker is 0.0177 in a million. Therefore, emissions from the proposed engines are not expected to pose a significant risk to the community at large.

2. Chronic and Acute Hazard Index:

The PMI (for both scenarios) for chronic risk is predicted to occur on the fence line receptors 61 and 40, at the east side of the property boundary. This risk assumes 30 years of continuous exposure. The pathway for maximum exposure and contribution is inhalation. The MEIR (for both scenarios) for chronic risk is predicted to occur at receptors 4494 and 4388. This risk assumes 30 years of continuous exposure. The pathway for maximum exposure and contribution is inhalation. The chronic and acute hazard impacts do not exceed district significance thresholds. Therefore, emissions from the proposed engines are not expected to pose a significant risk to the community at large.

B. Airborne Toxic Control Measure for Stationary Compression Ignition Engine (ATCM)

0570001-003:

Applicant is proposing to operate engine strictly as Emergency use and under the District’s threshold of 200 hrs per year, therefore engines will be required to meet Emergency emission standards and recordkeeping requirements listed in Title 17, California Code of Regulations section 93115.

In accordance with Title 17, California Code of Regulations section 93115, non-road stationary

diesel engine must comply the following:

- 1) CARB diesel fuel or alternative diesel fuel that has been verified for use
- 2) Tier 3 Non-Road Engine Certification Standard for a 2008+ model year engine greater than 750-bhp

2008+ model year engines greater than 750-bhp are required not to exceed the following emissions limits:

PM	0.15	g/bhp-hr
NO _x + NMHC	4.8	g/bhp-hr
CO	2.6	g/bhp-hr

Proposed engine model (Tier 4) has been certified according to **EPA certificate** PLHAL103.ESP-002, certification data is summarized below:

PM	0.02	g/bhp-hr
NO _x + NMHC	0.64	g/bhp-hr
CO	2.60	g/bhp-hr

Based on the certification data above, the proposed 3,621-bhp diesel engines meet Federal and State requirements. Additional requirements for an emergency use engine shall be incorporated into the Authority to Construct (ATC).

0570004:

Applicant is proposing to operate engine strictly as Emergency use and under the District's threshold of 200 hrs per year, therefore engine will be required to meet Emergency emission standards and recordkeeping requirements listed in Title 17, California Code of Regulations section 93115.

In accordance with Title 17, California Code of Regulations section 93115, non-road stationary direct-drive fire pump diesel engines must comply with the following:

- 1) CARB diesel fuel or alternative diesel fuel that has been verified for use
- 2) Tier 3 Non-Road Engine Certification Standard for a 2008+ model year engine greater than or equal to 300-bhp but less than 600-bhp
- 3) 2008+ model year engines with direct-driven fire pumps greater than or equal to 300-bhp but less than 600-bhp are required not to exceed the following emissions limits:

PM	0.15	g/bhp-hr
NO _x + NMHC	3.0	g/bhp-hr
CO	2.6	g/bhp-hr

Proposed engine model (Tier 4) has been certified according to **EPA certificate** RCEXL015.AAH-054, certification data is summarized below:

PM	0.08	g/bhp-hr
NO _x + NMHC	2.91	g/bhp-hr
CO	0.45	g/bhp-hr

Based on the certification data above, the proposed 460-bhp diesel engine meet Federal and State requirements. Additional requirements for an emergency use engine shall be incorporated into the Authority to Construct (ATC).

C. Offset requirements:

In accordance with Rule 210.1.III.B.3 offsets for emergency engines are not required. The proposed units will be permitted as an emergency use unit, hence, exempt from offset requirements.

VI. BACT DETERMINATION:

0570001-003:

BACT (Best Available Control Technology) is required for new stationary emergency-use Diesel-fueled engine in accordance with Rule 210.1, Section III.A. BACT for a emergency-use diesel fueled engine shall be the following:

Pollutant	Control Technology
PM₁₀	Visible emissions no greater than Ringelmann ¼ or 5% opacity once normal operating temperature is achieved. Maximum PM emissions not to exceed 0.15 g/bhp-hr
SOx	Fuel satisfying CARB reformulated diesel specifications
NOx	Maximum NOx emissions not to exceed 4.56 g/bhp-hr
VOC	Crankcase ventilation exhausting to engine air inlet, or 90% efficient control device for crankcase VOC emissions; VOC emissions not to exceed 0.24 g/bhp-hr
CO	Not required

The proposed equipment meets BACT for emergency use engines as proposed.

0570004:

BACT (Best Available Control Technology) is required for new stationary emergency-use Diesel-fueled engine in accordance with Rule 210.1, Section III.A. BACT for a emergency-use diesel fueled engine shall be the following:

Pollutant	Control Technology
PM₁₀	Visible emissions no greater than Ringelmann ¼ or 5% opacity once normal operating temperature is achieved. Maximum PM emissions not to exceed 0.15 g/bhp-hr
SOx	Fuel satisfying CARB reformulated diesel specifications
NOx	Maximum NOx emissions not to exceed 2.85 g/bhp-hr
VOC	Crankcase ventilation exhausting to engine air inlet, or 90% efficient control device for crankcase VOC emissions; VOC emissions not to exceed 0.15 g/bhp-hr
CO	Not required

The proposed equipment meets BACT for emergency use engines as proposed.

VII. CEQA DETERMINATION:

**EASTERN KERN APCD PERMITS - CEQA COMPLIANCE
Instructions for Checklist**

This form is designed to be used by the permit application processing engineer in implementing requirements of the California Environmental Quality Act (CEQA) for District permitting activities when the District is the lead or responsible agency under CEQA. The District is generally a responsible agency for portions of development projects requiring District permits. The District is a commenting agency for other parts of a project, such as, indirect source emissions and vehicle trips. Most District permits are considered exempt from CEQA (see District List of Exempt Projects). In most cases the environmental document prepared by the lead agency is adequate for the District permitting action. Certain District permit modifications may require supplemental CEQA documents.

CEQA compliance for a project subject to District permit requirements includes two steps:

- A. Determining what CEQA-related information, if any, is required from the applicant to deem the application complete (this may also be identified at the pre-application stage, if there is one¹).
- B. Determining and documenting CEQA compliance for each permit application prior to granting a permit by completing the attached form.

The following instructions correspond to the questions on the form:

- B.2. Projects subject to District permits often also require a land use or other permit from other agencies. The permit engineer should check the application or request from the applicant information regarding what other agencies will be requiring permits for the project and who the "Lead Agency" will be. District permit processing should begin as soon as adequate information is available to deem the application complete, even if the lead agency has not completed the environmental document (Govt. Code ' 65941 (b), amended 1993), and if the applicant so requests (Govt. Code ' 65951, amended 1993).
- B.3. For District permits that do not fall under the preceding case, the engineer shall receive from the applicant a signed and dated environmental questionnaire (Initial Study checklist).
- C.2. As a "responsible agency" under CEQA, the Control Officer shall consider information contained in the lead agency's final EIR or ND prior to granting the District permit. Acting on behalf of the Control Officer, the engineer shall review the ND or EIR and adopt any mitigation measures for air quality impacts or project alternatives over which the District has regulatory discretion.
- C.3. If any component of the project is not listed, and if exceptions to these exemptions provided in the form are true, then the project cannot be considered exempt. In making a recommendation to issue the District permit, the permit engineer shall review the environmental questionnaire provided by the applicant to establish the project has no potential for resulting in a significant adverse environmental impact to any environmental media (see Initial Study form). The study shall also demonstrate the project will not contribute to significant cumulative impacts and will not have significant impact itself. Although no further action is required under CEQA, the applicant may request a Notice of Exemption to be filed, to reduce the statute of limitations from 180 days to 30 days, on challenges to the decision the project is exempt from CEQA.

¹ *Preapplication under PRC ' 21080.1(b) amended 1993-at the request of the applicant the lead agency must provide for pre-application consultation on the environmental document.*

EASTERN KERN APCD PERMITS -- CEQA COMPLIANCE CHECKLIST

Completeness Review Form

This form shall be completed by the permit application engineer for all Authority to Construct permit applications. The completed form shall be included in the Engineering Evaluation File.

A. General Information

Application Number: 0570001-004
Applicant Name: Willow Rock Energy Storage Center
Project Description: Four (4) Emergency Diesel Fueled Piston Engines

B. Determination of Completeness

Check the corresponding action to be taken to determine the application is complete for CEQA purposes and fill in blanks where appropriate.

1. Ministerial Exemption

This permit application is not subject to CEQA because the evaluation is a ministerial action conducted using fixed standards and objective measurements. No discretion or judgment is required in granting of this permit.

2. Project Was Exempted by or is Subject to Negative Declaration or EIR by Another Agency

This permit application was exempted by or is subject to a ND or EIR prepared (or under preparation) by another agency. The District has received the necessary information indicating another agency is acting as the Lead Agency. Therefore, the application shall be deemed complete for CEQA purposes.

3. All Other Permits

The District has received from the applicant, a completed, signed and dated environmental questionnaire and any other information necessary for preparing a negative declaration or EIR, if required (see Form Instructions B.3.). Therefore, the application shall be deemed complete for CEQA purposes.

C. Final Action

Check the appropriate action taken by the APCO prior to issuing the final permit.

1. Ministerial Action

This permit application is exempt from CEQA because the permit evaluation is a ministerial action. CEQA does not apply to ministerial actions. No further action is necessary.

2. Project Was Exempted by or is Subject to Negative Declaration or EIR by Another Agency

X This permit application was exempted by or was subject to an EIR or Negative Declaration by another agency. The final action on the District permit was taken only after review and consideration of information in the certified CEQA document by the Control Officer, or authorized District representative of the Control Officer. The California Energy Commission (CEC) is the lead agency for this project for the requirements of the California Quality (CEQA).

3. Exemption

___ This permit application is exempt from CEQA because the project, as a whole, is listed in the District List of Exempt Projects AND because the project has no potential for causing a significant adverse environmental impact. A General Exemption under CEQA Section 15061 (b)(3) applies if the project is not listed in the District Exemption List AND it can be seen with certainty the project will not have a significant adverse effect on the environment. In making this determination,

- a. a review of information submitted by the applicant has been conducted indicating there is no potential for a significant adverse environmental impact on any environmental media from the project;
- b. emissions offsets were not required by EKAPCD Rule 210.1, Subsection III.B.;
- c. recognized Best Available Control Technology (BACT) was proposed; and
- d. no unusual circumstances such as location, or cumulative impacts from successive projects of the same type in the same place over time, were determined to result in significant adverse environmental impacts.

4. Permit is Not Exempt from CEQA

___ This permit was found not to be exempt from CEQA and no other agency will be conducting a CEQA review for the project. The District has prepared and adopted a Negative Declaration/Addendum or certified an EIR for the project. The final action by the District was taken only after information contained in the final EIR or ND was considered and any significant adverse environmental effects were mitigated to the maximum extent feasible.

VIII. EMISSION CALCULATIONS:

A. Assumptions:

1. Maximum operating hours: 200 hours per year
2. Maximum daily use: 24 hours
3. Maximum weekly use: 7 days per week
4. Density of fuel: 52.2 lb/ft³
5. Sulfur Content: 0.0015% (15 ppm) (CARB, EPA Fuel Requirement)
6. NMHC + NOx distribution: 95% NOx, 5% NMHC (Bay Area AQMD Policy)
7. Fuel use (maximum: 100% load):
 - 0570001-003:** 174.5 gal/hr (Mfr. Specs)
 - 0570004:** 24.7 gal/hr (Mfr. Specs)
8. 1kW= 1.34102 bhp
9. Conversion factors:
 - 7.48052 gal/ft³
 - 453.59 g/lb

B. Emission Factors:

g/bhp-hr					
	PM10	SOx	NOx	VOC	CO
ATC No.	ATCM Standard	Mass Balance	ATCM Standard	ATCM Standard	ATCM Standard
0570001-003	0.15	See SOx Cal. Below	4.56	0.24	2.6
0570004	0.02		0.50	0.14	2.6

C. Emission Calculations (sample equations)

PM₁₀:

$$\frac{g \cdot PM_{10}}{hp-hr} \times \frac{1}{453.59} \frac{lb}{g} \times hp = \frac{lb}{hr}$$

$$\frac{lb}{hr} \times 24 \frac{hr}{day} = \frac{lb}{day}$$

$$\frac{lb}{hr} \times 200 \frac{hr}{year} \times \frac{1}{2000} \frac{tons}{lb} = \frac{tons}{year}$$

SO_x:

$$\frac{gal(fuel)}{hr} \times \frac{1}{7.48052} \frac{ft^3}{gal} \times 52.2 \frac{lb}{ft^3} \times \frac{0.0015(S-fuel.content)}{100} \times 2 \left(\frac{SO_2}{S} \right) = \frac{lb}{hr}$$

$$\frac{lb}{hr} \times 24 \frac{hr}{day} = \frac{lb}{day}$$

$$\frac{lb}{hr} \times 200 \frac{hr}{year} \times \frac{1}{2000} \frac{tons}{lb} = \frac{tons}{year}$$

NO_x:

$$\frac{g \cdot NOx}{hp-hr} \times \frac{1}{453.59} \frac{lb}{g} \times hp = \frac{lb}{hr}$$

$$\frac{lb}{hr} \times 24 \frac{hr}{day} = \frac{lb}{day}$$

$$\frac{lb}{hr} \times 200 \frac{hr}{year} \times \frac{1}{2000} \frac{tons}{lb} = \frac{tons}{year}$$

VOC: $\frac{g \cdot VOC}{hp-hr} \times \frac{1}{453.59} \frac{lb}{g} \times hp = \frac{lb}{hr}$

$$\frac{lb}{hr} \times 24 \frac{hr}{day} = \frac{lb}{day}$$

$$\frac{lb}{hr} \times 200 \frac{hr}{year} \times \frac{1}{2000} \frac{tons}{lb} = \frac{tons}{year}$$

CO: $\frac{g \cdot CO}{hp-hr} \times \frac{1}{453.59} \frac{lb}{g} \times hp = \frac{lb}{hr}$

$$\frac{lb}{hr} \times 24 \frac{hr}{day} = \frac{lb}{day}$$

$$\frac{lb}{hr} \times 200 \frac{hr}{year} \times \frac{1}{2000} \frac{tons}{lb} = \frac{tons}{year}$$

Single Engine Emissions Summary:

0570001:

	PM₁₀	SOx	NOx	VOC	CO
lb/hr	0.160	0.037	3.991	1.118	20.756
lb/day	3.832	0.877	95.796	26.823	498.138
tons/year	0.016	0.004	0.399	0.112	2.076

0570001-004:

	PM₁₀	SOx	NOx	VOC	CO
lb/hr	0.152	0.005	2.890	0.152	2.637
lb/day	3.651	0.124	69.367	3.651	63.282
tons/year	0.015	0.001	0.289	0.015	0.264

Emissions to be Added to NSR Balance:

Calculations for New Source Review Balances (NSRB) and Stationary Source Potential to Emit (SSPE) are not required for emergency equipment not operated more than 200 hours per year (excluding routine maintenance/service startups). All four units will be permitted as standby emergency units. (Rule 210.1)

	PM₁₀	SOx	NOx	VOC	CO
lb/day:	0.00	0.00	0.00	0.00	0.00
tons/yr	0.00	0.00	0.00	0.00	0.00

IX. EMISSION CHANGES:

Emissions change for the emission unit is shown on below:

A. Project Emission Change:

Sum of emissions changes for all emissions units to be included in the NSRB Balances (NSRB) and the Stationary Source Potentials to Emit (SSPE).

	PM₁₀	SO_x	NO_x	VOC	CO
lb/day	0.00	0.00	0.00	0.00	0.00
tons/year	0.00	0.00	0.00	0.00	0.00

B. Pre-Project NSRB Balances and SSPE:

	NSRB	NSRB	SSPE	SSPE	NSRB
Pollutant	PM₁₀	SO_x	NO_x	VOC	CO
lb/day	0.00	0.00	0.00	0.00	0.00
tons/year	0.00	0.00	0.00	0.00	0.00

C. Post-Project NSRB Balances and SSPE:

Pre-Project NSRB Balance/SSPE + Projects Emissions Change

	NSRB	NSRB	SSPE	SSPE	NSRB
Pollutant	PM₁₀	SO_x	NO_x	VOC	CO
lb/day	0.00	0.00	0.00	0.00	0.00
tons/year	0.00	0.00	0.00	0.00	0.00

X. CONCLUSIONS:

A. Rule 210.1 (conclusions based on worst case):

- Satisfies requirements of Subsection III.A. (BACT)
- Project not subject to Subsection, III.B. (offsets), NSRB balance for SO_x < 27 tons/yr and PM₁₀ < 15 tons/yr and SSPE for VOC and NO_x < 25 tons/yr,.
- Project subject to Subsection III.B. (offsets),
- Project not subject to NSR requirements Sec

B. Rule 302:

0570001-003:

Fee for the emergency generator driven by 3,621-bhp diesel piston engine, was determined in accordance with Rule 302 Schedule 8. According to Rule 302 Schedule 8, a diesel piston engine with a designed horsepower output greater than 1,000-bhp but less than 5,000-bhp shall be assessed a fee of \$2,785 for the first year of operation and annually thereafter. A total \$8,355 for all three engines.

0570004:

Fee for the emergency generator driven by 460-bhp diesel piston engine, was determined in accordance with Rule 302 Schedule 8. According to Rule 302 Schedule 8, a diesel piston engine with a designed horsepower output greater than 300-bhp but less than 600-bhp shall be assessed a fee of \$530 for the first year of operation and annually thereafter.

C. Rule 401: Engines are diesel fueled. In accordance with BACT requirements, visible emissions shall be limited to 5% opacity. Visible emissions of 20% opacity are not expected. Compliance with Rule 401 is expected.

D. Rule 404.1: Particulate matter emission rate (gr/scf) from the diesel piston engine is calculated using the sample equations and assumptions listed below:

	PM emission rate (lb/hr)	Exhaust gas flow rate (acfm)	Exhaust temperature (°F)
0570001-003:	0.16	9,734	914
0570004:	0.16	2,881	1,025

1lb= 7000 grains (gr)

$$\frac{lb}{hr} \times \frac{1}{60} \frac{hr}{min} \times 7000 \frac{grains}{lb} = \frac{grains}{min}$$

$$\frac{ft^3}{min} \times \left(\frac{68^{\circ}F + 459.67}{E.Temp^{\circ}F + 459.67} \right) = scfm$$

$$\frac{grains}{min} \times \frac{1}{scf} \frac{min}{scf} = \frac{grains}{scf}$$

This results in an exhaust gas flow rate per unit volume of 0.02 gr/scf which is less than the required 0.1 grains per cubic foot of gas at standard conditions. Compliance with Rule 404.1 is expected.

- E. Rule 407: Sulfur content of diesel fuel shall not exceed 0.0015% (15 ppmv). Given known combustion principles, SO₂ emission rate shall be less than 0.2% by volume. Compliance with Rule 407 is expected.
- F. Rule 419: A screening health risk assessment was completed for toxic air contaminant emissions from the combustion of diesel fuel. Prioritization scores for carcinogenic and non-carcinogenic (acute and chronic health effects) from diesel engine emissions showed low priority; therefore, a more refined health risk assessment (HRA) was not required. Compliance with Rule 419 is expected.
- G. Rule 423 (40 CFR Part 63, Subpart ZZZZ): By meeting ATCM emission requirements, the engines comply with the requirements of 40 CFR Part 60 Subpart IIII, which satisfies the requirements of 40 CFR 63 Subpart ZZZZ. Compliance with Rule 423 is expected.
- H. Rule 427: Emergency generators driven by the 3,621-bhp and 460-bhp diesel engines will be permitted to operate 200 hours per year. Therefore, owner/operator of the engines is not required to comply with Rule 427.
- I. CH&SC 41700: Diesel IC engine will not pose a significant health risk to community at large based on prioritization scores completed. Compliance with CH&SC 41700 is expected.
- J. California Code of Regulation (CCR), Title 17, and Section 93115: ATCM for stationary compression ignition engine requires new engine to comply with current Tier 3 standards for 2008+ model year. Proposed engine is EPA certified Tier 3 engine and additional requirement for Emergency-use engine will be incorporated into ATC. Therefore, proposed engine will comply with ATCM for Stationary Diesel-Fueled Engine.

XI. RECOMMENDATIONS:

Issue Authority to Construct No. 0570001-004 with the following conditions:

0570001-003:

EQUIPMENT LISTING: Emergency Generator Set Driven by a 3,621-bhp Diesel Piston Engine, including the following equipment and design specifications:

2,500-kW Kohler emergency generator set model KD2500, driven by 3,621-bhp Liebherr Machines Bulle Model KD62V12-6CNS, EPA Certified (Tier 4) diesel fueled piston engine with turbocharger, after cooler, and Selective Catalytic Reduction (SCR). (EPA family PLHAL103.ESP and S/N TBD).

DESIGN CONDITIONS:

- a. Engine shall be equipped with turbocharger and charge air cooler. (Rule 210.1 BACT Requirement)
- b. Elapsed time meter shall be installed and maintained indicating cumulative hours of engine operating time. (Rule 210.1)
- c. Engine shall be equipped with a permanently affixed placard readily available for inspection with the following engine information: brake horsepower, make, model, serial number, and Tier number. (Rule 210.1)

OPERATIONAL CONDITIONS:

1. Total hours of operation (excluding maintenance and testing) shall not exceed 200 hours per year without prior District approval. (Rule 210.1)
2. Engine visible emissions shall be less than 5% opacity or Ringelmann No. ¼ during normal operation, except for not more than 3 minutes in any one hour. (Rule 210.1 BACT Requirement)
3. Fuel for diesel piston engine shall conform to California Air Resources Board standards for reformulated diesel fuel (low sulfur content, 0.0015% by weight). (Rule 210.1 BACT Requirement)
4. Exhaust gas particulate matter concentration shall not exceed 0.1 grains/ft³ of gas at standard conditions. (Rule 404.1)
5. Equipment shall be maintained according to manufacturer's specifications to ensure compliance with emission limitations. (Rules 209 and 210.1)
6. Operation of this equipment shall be conducted in compliance with all data and specifications submitted with application under which this permit is issued. (Rule 210.1)
7. Engine shall comply with the requirements of California Code of Regulations (CCR), Title 17, Section 93115 (Airborne Toxic Control Measure for Stationary Compression Ignition (CI) Engine). (CCR Title 17, Sections 93115 – 93115.15)
8. Maintenance and testing shall be limited to no greater than 50 hours per year. (CCR Section 93115)
9. Compliance with all operational conditions shall be verified by appropriate recordkeeping, including records of operational data needed to demonstrate compliance. Such records shall be kept on site in readily available format. (Rule 210.1)
10. Operating record of this equipment shall be maintained in format approved in writing by District kept for a minimum of three years, and made available upon request of District personnel. Record shall include, at minimum, days and hours of operation, amount of fuel oil supplied to this engine, date(s) fuel was supplied, and engine maintenance check(s) including: air filters, fuel filters, oil filters, engine oil, exhaust system, coolant, and spark plugs (if so equipped), hours of operation for emergency use, hours of operation for maintenance and testing, hours of operation for all uses other than those specified in sections 93115.10(f)(1)(A) through (D), and the fuel used. (CCR Section 93115 and Rule 210.1).
11. No emission resulting from use of this equipment shall cause injury, detriment, nuisance, annoyance to or endanger comfort, repose, health or safety of any considerable number of persons or public. (Rule 419 and CH&SC, Sec 41700)

STATE OF CALIFORNIA AIR TOXICS HOT SPOTS REQUIREMENTS:

Facility shall comply with California Health and Safety Code Sections 44300 through 44384. (Rule 208.1)

COMPLIANCE TESTING REQUIREMENTS:

Should inspection reveal conditions indicative of non-compliance, compliance with any emission limitations shall be verified within 60 days of District request. Test results shall be submitted to the District within 30 days after test completion. (Rule 108.1 and 209)

EMISSION LIMITS:

Maximum emissions rate of each air contaminant from this emission unit shall not exceed following limits:

<u>Particulate Matter (PM₁₀):</u>	0.02 gm/bhp-hr
	0.16 lb/hr
	3.83 lb/day
	0.02 ton/yr
<u>Sulfur Oxides (SO_x as SO₂):</u>	0.04 lb/hr
	0.88 lb/day
	4E-3 ton/yr
<u>Oxides of Nitrogen (NO_x as NO₂):</u>	0.50 gm/bhp-hr
	3.99 lb/hr
	95.80 lb/day
	0.40 ton/yr
<u>Volatile Organic Compounds (VOC):</u> (as defined in Rule 210.1)	0.14 gm/bhp-hr
	1.12 lb/hr
	26.82 lb/day
	0.11 ton/yr
<u>Carbon Monoxide:</u>	2.6 gm/bhp-hr
	20.76 lb/hr
	498.14 lb/day
	2.08 ton/yr

(Emissions limits established pursuant to Rule 210.1 unless otherwise noted)

Compliance with maximum daily emission limits shall be verified by source operator (with appropriate operational data and recordkeeping to document maximum daily emission rate) each day source is operated and such documentation of compliance shall be retained and made readily available to District for period of three years. (Rule 210.1)

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0570004:

EQUIPMENT LISTING: Emergency Fire Pump Driven by a Diesel Piston Engine, including the following equipment and design specifications:

Emergency fire pump, driven by 460-bhp Cummins Model QSX15, EPA Certified (Tier 3) diesel fueled piston engine with turbocharger and after cooler. (EPA family RCEXL015.AAH and S/N TBD).

DESIGN CONDITIONS:

- a. Engine shall be equipped with turbocharger and charge air cooler. (Rule 210.1 BACT Requirement)
- b. Elapsed time meter shall be installed and maintained indicating cumulative hours of engine operating time. (Rule 210.1)
- c. Engine shall be equipped with a permanently affixed placard readily available for inspection with the following engine information: brake horsepower, make, model, serial number, and Tier number. (Rule 210.1)

OPERATIONAL CONDITIONS:

1. Total hours of operation (excluding maintenance and testing) shall not exceed 200 hours per year without prior District approval. (Rule 210.1)
2. Engine visible emissions shall be less than 5% opacity or Ringelmann No. ¼ during normal operation, except for not more than 3 minutes in any one hour. (Rule 210.1 BACT Requirement)
3. Fuel for diesel piston engine shall conform to California Air Resources Board standards for reformulated diesel fuel (low sulfur content, 0.0015% by weight). (Rule 210.1 BACT Requirement)
4. Exhaust gas particulate matter concentration shall not exceed 0.1 grains/ft³ of gas at standard conditions. (Rule 404.1)
5. Equipment shall be maintained according to manufacturer's specifications to ensure compliance with emission limitations. (Rules 209 and 210.1)
6. Operation of this equipment shall be conducted in compliance with all data and specifications submitted with application under which this permit is issued. (Rule 210.1)
7. Engine shall comply with the requirements of California Code of Regulations (CCR), Title 17, Section 93115 (Airborne Toxic Control Measure for Stationary Compression Ignition (CI) Engine). (CCR Title 17, Sections 93115 – 93115.15)
8. Maintenance and testing shall be limited to no greater than 50 hours per year. (CCR Section 93115)
9. Compliance with all operational conditions shall be verified by appropriate recordkeeping, including records of operational data needed to demonstrate compliance. Such records shall be kept on site in readily available format. (Rule 210.1)
10. Operating record of this equipment shall be maintained in format approved in writing by District kept for a minimum of three years, and made available upon request of District personnel. Record shall include, at minimum, days and hours of operation, amount of fuel oil supplied to this engine, date(s) fuel was supplied, and engine maintenance check(s) including: air filters, fuel filters, oil filters, engine oil, exhaust system, coolant, and spark plugs (if so equipped), hours of operation for emergency use, hours of operation for maintenance and testing, hours of operation for all uses other than those specified in sections 93115.10(f)(1)(A) through (D), and the fuel used. (CCR Section 93115 and Rule 210.1).
11. No emission resulting from use of this equipment shall cause injury, detriment, nuisance,

annoyance to or endanger comfort, repose, health or safety of any considerable number of persons or public. (Rule 419 and CH&SC, Sec 41700)

STATE OF CALIFORNIA AIR TOXICS HOT SPOTS REQUIREMENTS:

Facility shall comply with California Health and Safety Code Sections 44300 through 44384. (Rule 208.1)

COMPLIANCE TESTING REQUIREMENTS:

Should inspection reveal conditions indicative of non-compliance, compliance with any emission limitations shall be verified within 60 days of District request. Test results shall be submitted to the District within 30 days after test completion. (Rule 108.1 and 209)

EMISSION LIMITS:

Maximum emissions rate of each air contaminant from this emission unit shall not exceed following limits:

<u>Particulate Matter (PM₁₀):</u>	0.15 gm/bhp-hr (ATCM Standard)
	0.15 lb/hr
	3.65 lb/day
	0.02 ton/yr
<u>Sulfur Oxides (SO_x as SO₂):</u>	0.01 lb/hr
	0.12 lb/day
	1E-3 ton/yr
<u>Oxides of Nitrogen (NO_x as NO₂):</u>	2.85 gm/bhp-hr (ATCM Standard)
	2.89 lb/hr
	69.37 lb/day
	0.29 ton/yr
<u>Volatile Organic Compounds (VOC):</u> (as defined in Rule 210.1)	0.15 gm/bhp-hr (ATCM Standard)
	0.15 lb/hr
	3.65 lb/day
	0.02 ton/yr
<u>Carbon Monoxide:</u>	2.6 gm/bhp-hr (ATCM Standard)
	2.64 lb/hr
	63.28 lb/day
	0.26 ton/yr

(Emissions limits established pursuant to Rule 210.1 unless otherwise noted)

Compliance with maximum daily emission limits shall be verified by source operator (with appropriate operational data and recordkeeping to document maximum daily emission rate) each day source is operated and such documentation of compliance shall be retained and made readily available to District for period of three years. (Rule 210.1)

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PRELIMINARY DETERMINATION OF COMPLIANCE

EASTERN KERN AIR POLLUTION CONTROL DISTRICT

Administrative Office: 2700 "M" Street Suite 302, Bakersfield, CA 93301
Phone: (661) 862-5250 • Fax: (661) 862-5251 • ekapcd@kerncounty.com
Tehachapi Field Office: Phone: (661) 823-9264 • Fax: (661) 823-0167

ISSUE DATE: XXXX XX, 2024	APPLICATION NO.:	0570001
EXPIRATION: XXXX XX, 2026	DATE:	MARCH 08, 2024

DETERMINATION OF COMPLIANCE IS HEREBY GRANTED TO:

WILLOW ROCK ENERGY STORAGE CENTER

DETERMINATION OF COMPLIANCE IS HEREBY GRANTED FOR:

2,500-kW Emergency Generator Set Driven by 3,621-bhp Diesel Fueled Piston Engine

(See attached sheets for equipment description and conditions)

S SE33	T 10N	R 12W	Location: 0.4 mi. West of SR14 on Dawn Rd., Rosamond	Startup Inspection
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This document serves as a temporary Permit to Operate only as provided by Rule 201 of the District's Rules and Regulations. For issuance of a Permit to Operate, Rule 208 requires equipment authorized by this Determination of Compliance be installed and operated in accordance with conditions of approval. Changes to these conditions must be made by application and must be approved before such changes are made. This document does not authorize emission of air contaminants in excess of New Source Review limits (Rule 210.1) or Regulation IV emission limits. Emission testing requirements set forth on this document must be satisfied before a Permit to Operate can be granted.

UPON COMPLETION OF CONSTRUCTION AND/OR INSTALLATION, PLEASE TELEPHONE DISTRICT

Validation Signature:

Glen E. Stephens, P.E.
Air Pollution Control Officer

CONDITIONS OF APPROVAL:

Pursuant to Rule 209, "conditional approval" is hereby granted. Please be aware compliance with all conditions of approval imposed by any applicable Determination of Compliance remain in effect for life of project, unless modified by application.

EQUIPMENT DESCRIPTION: Emergency Generator Set Driven by Diesel Fueled Piston Engine, including the following equipment and design specifications:

2,500-kW Kohler emergency generator set model KD2500, driven by 3,621-bhp Liebherr Machines Bulle Model KD62V12-6CNS, EPA Certified (Tier 4) diesel fueled piston engine with turbocharger, after cooler, and Selective Catalytic Reduction (SCR). (EPA family PLHAL103.ESP and S/N TBD).

NOTIFICATION REQUIREMENTS:

In accordance with District Rule 201.II (Permits Required), a person shall notify the Control Officer before operating or using equipment granted in this Determination of Compliance. This Determination of Compliance shall serve as a temporary Permit to Operate only after such notification. Such notification shall be completed in writing. Intent to Use Notification form is available at the District website:

http://www.kernair.org/Main_Pages/Subpages/Forms_Sub/Application_Forms.html. Form can be mailed to the District Administrative Office at: 2700 "M" Street Suite 302, Bakersfield, CA 93301, e-mailed to the District at the following address: ekapcd@kerncounty.com, or sent by FAX to the District at: (661) 862-5251.

DESIGN CONDITIONS:

- a. Engine shall be equipped with turbocharger and charge air cooler. (Rule 210.1 BACT Requirement)
- b. Elapsed time meter shall be installed and maintained indicating cumulative hours of engine operating time. (Rule 210.1)
- c. Engine shall be equipped with a permanently affixed placard readily available for inspection with the following engine information: brake horsepower, make, model, serial number, and Tier number. (Rule 210.1)

OPERATIONAL CONDITIONS:

1. Total hours of operation (excluding maintenance and testing) shall not exceed 200 hours per year without prior District approval. (Rule 210.1)
2. Engine visible emissions shall be less than 5% opacity or Ringelmann No. ¼ during normal operation, except for not more than 3 minutes in any one hour. (Rule 210.1 BACT Requirement)
3. Fuel for diesel piston engine shall conform to California Air Resources Board standards for reformulated diesel fuel (low sulfur content, 0.0015% by weight). (Rule 210.1 BACT Requirement)
4. Exhaust gas particulate matter concentration shall not exceed 0.1 grains/ft³ of gas at standard conditions. (Rule 404.1)
5. Equipment shall be maintained according to manufacturer's specifications to ensure compliance with emission limitations. (Rules 209 and 210.1)
6. Operation of this equipment shall be conducted in compliance with all data and specifications submitted with application under which this permit is issued. (Rule 210.1)
7. Engine shall comply with the requirements of California Code of Regulations (CCR), Title 17, Section 93115 (Airborne Toxic Control Measure for Stationary Compression Ignition (CI) Engine). (CCR Title 17, Sections 93115 – 93115.15)
8. Maintenance and testing shall be limited to no greater than 50 hours per year. (CCR Section 93115)
9. Compliance with all operational conditions shall be verified by appropriate recordkeeping, including records of operational data needed to demonstrate compliance. Such records shall be kept on site in readily available format for a minimum of three years. (Rule 210.1)
10. Operating record of this equipment shall be maintained in format approved in writing by District and made available

upon request of District personnel. Records shall include, at minimum, days and hours of operation, hours of operation for emergency use, hours of operation for maintenance/testing, amount of fuel oil supplied to this engine, date(s) fuel was supplied, and engine maintenance check(s) including: air filters, fuel filters, oil filters, engine oil, exhaust system, coolant, and spark plugs (if so equipped). (Rule 210.1 & CCR Section 93115).

11. No emission resulting from use of this equipment shall cause injury, detriment, nuisance, annoyance to or endanger comfort, repose, health or safety of any considerable number of persons or public. (Rule 419 and CH&SC, Sec 41700)

STATE OF CALIFORNIA AIR TOXICS HOT SPOTS REQUIREMENTS:

Facility shall comply with California Health and Safety Code Sections 44300 through 44384. (Rule 208.1)

COMPLIANCE TESTING REQUIREMENTS:

Should inspection reveal conditions indicative of non-compliance, compliance with any emission limitations shall be verified within 60 days of District request. Test results shall be submitted to the District within 30 days after test completion. (Rule 108.1 and 209)

EMISSION LIMITS:

Maximum emissions rate of each air contaminant from this operation shall not exceed following limits:

<u>Particulate Matter (PM₁₀):</u>	0.02 gm/bhp-hr
	0.16 lb/hr
	3.83 lb/day
	0.02 ton/yr

<u>Sulfur Oxides (SO_x as SO₂):</u>	0.04 lb/hr
	0.88 lb/day
	4E-3 ton/yr

<u>Oxides of Nitrogen (NO_x as NO₂):</u>	0.50 gm/bhp-hr
	3.99 lb/hr
	95.80 lb/day
	0.40 ton/yr

<u>Volatile Organic Compounds (VOC):</u> (as defined in Rule 210.1)	0.14 gm/bhp-hr
	1.12 lb/hr
	26.82 lb/day
	0.11 ton/yr

<u>Carbon Monoxide:</u>	2.6 gm/bhp-hr
	20.76 lb/hr
	498.14 lb/day
	2.08 ton/yr

(Emissions limits established pursuant to Rule 210.1 unless otherwise noted)

Compliance with maximum daily emission limits shall be verified by source operator (with appropriate operational data and record keeping to document maximum daily emission rate) each day source is operated and such documentation of compliance shall be retained and made readily available to District for period of three years. (Rule 210.1)



PRELIMINARY DETERMINATION OF COMPLIANCE

EASTERN KERN AIR POLLUTION CONTROL DISTRICT

Administrative Office: 2700 "M" Street Suite 302, Bakersfield, CA 93301
Phone: (661) 862-5250 • Fax: (661) 862-5251 • ekapcd@kerncounty.com
Tehachapi Field Office: Phone: (661) 823-9264 • Fax: (661) 823-0167

ISSUE DATE: XXXX XX, 2024	APPLICATION NO.:	0570002
EXPIRATION: XXXX XX, 2026	DATE:	MARCH 08, 2024

DETERMINATION OF COMPLIANCE IS HEREBY GRANTED TO:

WILLOW ROCK ENERGY STORAGE CENTER

DETERMINATION OF COMPLIANCE IS HEREBY GRANTED FOR:

2,500-kW Emergency Generator Set Driven by 3,621-bhp Diesel Fueled Piston Engine

(See attached sheets for equipment description and conditions)

S SE33	T 10N	R 12W	Location: 0.4 mi. West of SR14 on Dawn Rd., Rosamond	Startup Inspection
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UPON COMPLETION OF CONSTRUCTION AND/OR INSTALLATION, PLEASE TELEPHONE DISTRICT

Validation Signature:

Glen E. Stephens, P.E.
Air Pollution Control Officer

CONDITIONS OF APPROVAL:

Pursuant to Rule 209, "conditional approval" is hereby granted. Please be aware compliance with all conditions of approval imposed by any applicable Determination of Compliance remain in effect for life of project, unless modified by application.

EQUIPMENT DESCRIPTION: Emergency Generator Set Driven by Diesel Fueled Piston Engine, including the following equipment and design specifications:

2,500-kW Kohler emergency generator set model KD2500, driven by 3,621-bhp Liebherr Machines Bulle Model KD62V12-6CNS, EPA Certified (Tier 4) diesel fueled piston engine with turbocharger, after cooler, and Selective Catalytic Reduction (SCR). (EPA family PLHAL103.ESP and S/N TBD).

NOTIFICATION REQUIREMENTS:

In accordance with District Rule 201.II (Permits Required), a person shall notify the Control Officer before operating or using equipment granted in this Determination of Compliance. This Determination of Compliance shall serve as a temporary Permit to Operate only after such notification. Such notification shall be completed in writing. Intent to Use Notification form is available at the District website:

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DESIGN CONDITIONS:

- a. Engine shall be equipped with turbocharger and charge air cooler. (Rule 210.1 BACT Requirement)
- b. Elapsed time meter shall be installed and maintained indicating cumulative hours of engine operating time. (Rule 210.1)
- c. Engine shall be equipped with a permanently affixed placard readily available for inspection with the following engine information: brake horsepower, make, model, serial number, and Tier number. (Rule 210.1)

OPERATIONAL CONDITIONS:

1. Total hours of operation (excluding maintenance and testing) shall not exceed 200 hours per year without prior District approval. (Rule 210.1)
2. Engine visible emissions shall be less than 5% opacity or Ringelmann No. ¼ during normal operation, except for not more than 3 minutes in any one hour. (Rule 210.1 BACT Requirement)
3. Fuel for diesel piston engine shall conform to California Air Resources Board standards for reformulated diesel fuel (low sulfur content, 0.0015% by weight). (Rule 210.1 BACT Requirement)
4. Exhaust gas particulate matter concentration shall not exceed 0.1 grains/ft³ of gas at standard conditions. (Rule 404.1)
5. Equipment shall be maintained according to manufacturer's specifications to ensure compliance with emission limitations. (Rules 209 and 210.1)
6. Operation of this equipment shall be conducted in compliance with all data and specifications submitted with application under which this permit is issued. (Rule 210.1)
7. Engine shall comply with the requirements of California Code of Regulations (CCR), Title 17, Section 93115 (Airborne Toxic Control Measure for Stationary Compression Ignition (CI) Engine). (CCR Title 17, Sections 93115 – 93115.15)
8. Maintenance and testing shall be limited to no greater than 50 hours per year. (CCR Section 93115)
9. Compliance with all operational conditions shall be verified by appropriate recordkeeping, including records of operational data needed to demonstrate compliance. Such records shall be kept on site in readily available format for a minimum of three years. (Rule 210.1)
10. Operating record of this equipment shall be maintained in format approved in writing by District and made available

upon request of District personnel. Records shall include, at minimum, days and hours of operation, hours of operation for emergency use, hours of operation for maintenance/testing, amount of fuel oil supplied to this engine, date(s) fuel was supplied, and engine maintenance check(s) including: air filters, fuel filters, oil filters, engine oil, exhaust system, coolant, and spark plugs (if so equipped). (Rule 210.1 & CCR Section 93115).

11. No emission resulting from use of this equipment shall cause injury, detriment, nuisance, annoyance to or endanger comfort, repose, health or safety of any considerable number of persons or public. (Rule 419 and CH&SC, Sec 41700)

STATE OF CALIFORNIA AIR TOXICS HOT SPOTS REQUIREMENTS:

Facility shall comply with California Health and Safety Code Sections 44300 through 44384. (Rule 208.1)

COMPLIANCE TESTING REQUIREMENTS:

Should inspection reveal conditions indicative of non-compliance, compliance with any emission limitations shall be verified within 60 days of District request. Test results shall be submitted to the District within 30 days after test completion. (Rule 108.1 and 209)

EMISSION LIMITS:

Maximum emissions rate of each air contaminant from this operation shall not exceed following limits:

Particulate Matter (PM₁₀):
0.02 gm/bhp-hr
0.16 lb/hr
3.83 lb/day
0.02 ton/yr

Sulfur Oxides (SO_x as SO₂):
0.04 lb/hr
0.88 lb/day
4E-3 ton/yr

Oxides of Nitrogen (NO_x as NO₂):
0.50 gm/bhp-hr
3.99 lb/hr
95.80 lb/day
0.40 ton/yr

Volatile Organic Compounds (VOC):
(as defined in Rule 210.1)
0.14 gm/bhp-hr
1.12 lb/hr
26.82 lb/day
0.11 ton/yr

Carbon Monoxide:
2.6 gm/bhp-hr
20.76 lb/hr
498.14 lb/day
2.08 ton/yr

(Emissions limits established pursuant to Rule 210.1 unless otherwise noted)

Compliance with maximum daily emission limits shall be verified by source operator (with appropriate operational data and record keeping to document maximum daily emission rate) each day source is operated and such documentation of compliance shall be retained and made readily available to District for period of three years. (Rule 210.1)



PRELIMINARY DETERMINATION OF COMPLIANCE

EASTERN KERN AIR POLLUTION CONTROL DISTRICT

Administrative Office: 2700 "M" Street Suite 302, Bakersfield, CA 93301
Phone: (661) 862-5250 • Fax: (661) 862-5251 • ekapcd@kerncounty.com
Tehachapi Field Office: Phone: (661) 823-9264 • Fax: (661) 823-0167

ISSUE DATE: XXXX XX, 2024	APPLICATION NO.:	0570003
EXPIRATION: XXXX XX, 2026	DATE:	MARCH 08, 2024

DETERMINATION OF COMPLIANCE IS HEREBY GRANTED TO:

WILLOW ROCK ENERGY STORAGE CENTER

DETERMINATION OF COMPLIANCE IS HEREBY GRANTED FOR:

2,500-kW Emergency Generator Set Driven by 3,621-bhp Diesel Fueled Piston Engine

(See attached sheets for equipment description and conditions)

S SE33	T 10N	R 12W	Location: 0.4 mi. West of SR14 on Dawn Rd., Rosamond	Startup Inspection
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This document serves as a temporary Permit to Operate only as provided by Rule 201 of the District's Rules and Regulations. For issuance of a Permit to Operate, Rule 208 requires equipment authorized by this Determination of Compliance be installed and operated in accordance with conditions of approval. Changes to these conditions must be made by application and must be approved before such changes are made. This document does not authorize emission of air contaminants in excess of New Source Review limits (Rule 210.1) or Regulation IV emission limits. Emission testing requirements set forth on this document must be satisfied before a Permit to Operate can be granted.

UPON COMPLETION OF CONSTRUCTION AND/OR INSTALLATION, PLEASE TELEPHONE DISTRICT

Validation Signature:

Glen E. Stephens, P.E.
Air Pollution Control Officer

CONDITIONS OF APPROVAL:

Pursuant to Rule 209, "conditional approval" is hereby granted. Please be aware compliance with all conditions of approval imposed by any applicable Determination of Compliance remain in effect for life of project, unless modified by application.

EQUIPMENT DESCRIPTION: Emergency Generator Set Driven by Diesel Fueled Piston Engine, including the following equipment and design specifications:

2,500-kW Kohler emergency generator set model KD2500, driven by 3,621-bhp Liebherr Machines Bulle Model KD62V12-6CNS, EPA Certified (Tier 4) diesel fueled piston engine with turbocharger, after cooler, and Selective Catalytic Reduction (SCR). (EPA family PLHAL103.ESP and S/N TBD).

NOTIFICATION REQUIREMENTS:

In accordance with District Rule 201.II (Permits Required), a person shall notify the Control Officer before operating or using equipment granted in this Determination of Compliance. This Determination of Compliance shall serve as a temporary Permit to Operate only after such notification. Such notification shall be completed in writing. Intent to Use Notification form is available at the District website:

http://www.kernair.org/Main_Pages/Subpages/Forms_Sub/Application_Forms.html. Form can be mailed to the District Administrative Office at: 2700 "M" Street Suite 302, Bakersfield, CA 93301, e-mailed to the District at the following address: ekapcd@kerncounty.com, or sent by FAX to the District at: (661) 862-5251.

DESIGN CONDITIONS:

- a. Engine shall be equipped with turbocharger and charge air cooler. (Rule 210.1 BACT Requirement)
- b. Elapsed time meter shall be installed and maintained indicating cumulative hours of engine operating time. (Rule 210.1)
- c. Engine shall be equipped with a permanently affixed placard readily available for inspection with the following engine information: brake horsepower, make, model, serial number, and Tier number. (Rule 210.1)

OPERATIONAL CONDITIONS:

1. Total hours of operation (excluding maintenance and testing) shall not exceed 200 hours per year without prior District approval. (Rule 210.1)
2. Engine visible emissions shall be less than 5% opacity or Ringelmann No. ¼ during normal operation, except for not more than 3 minutes in any one hour. (Rule 210.1 BACT Requirement)
3. Fuel for diesel piston engine shall conform to California Air Resources Board standards for reformulated diesel fuel (low sulfur content, 0.0015% by weight). (Rule 210.1 BACT Requirement)
4. Exhaust gas particulate matter concentration shall not exceed 0.1 grains/ft³ of gas at standard conditions. (Rule 404.1)
5. Equipment shall be maintained according to manufacturer's specifications to ensure compliance with emission limitations. (Rules 209 and 210.1)
6. Operation of this equipment shall be conducted in compliance with all data and specifications submitted with application under which this permit is issued. (Rule 210.1)
7. Engine shall comply with the requirements of California Code of Regulations (CCR), Title 17, Section 93115 (Airborne Toxic Control Measure for Stationary Compression Ignition (CI) Engine). (CCR Title 17, Sections 93115 – 93115.15)
8. Maintenance and testing shall be limited to no greater than 50 hours per year. (CCR Section 93115)
9. Compliance with all operational conditions shall be verified by appropriate recordkeeping, including records of operational data needed to demonstrate compliance. Such records shall be kept on site in readily available format for a minimum of three years. (Rule 210.1)
10. Operating record of this equipment shall be maintained in format approved in writing by District and made available

upon request of District personnel. Records shall include, at minimum, days and hours of operation, hours of operation for emergency use, hours of operation for maintenance/testing, amount of fuel oil supplied to this engine, date(s) fuel was supplied, and engine maintenance check(s) including: air filters, fuel filters, oil filters, engine oil, exhaust system, coolant, and spark plugs (if so equipped). (Rule 210.1 & CCR Section 93115).

11. No emission resulting from use of this equipment shall cause injury, detriment, nuisance, annoyance to or endanger comfort, repose, health or safety of any considerable number of persons or public. (Rule 419 and CH&SC, Sec 41700)

STATE OF CALIFORNIA AIR TOXICS HOT SPOTS REQUIREMENTS:

Facility shall comply with California Health and Safety Code Sections 44300 through 44384. (Rule 208.1)

COMPLIANCE TESTING REQUIREMENTS:

Should inspection reveal conditions indicative of non-compliance, compliance with any emission limitations shall be verified within 60 days of District request. Test results shall be submitted to the District within 30 days after test completion. (Rule 108.1 and 209)

EMISSION LIMITS:

Maximum emissions rate of each air contaminant from this operation shall not exceed following limits:

Particulate Matter (PM₁₀):
0.02 gm/bhp-hr
0.16 lb/hr
3.83 lb/day
0.02 ton/yr

Sulfur Oxides (SO_x as SO₂):
0.04 lb/hr
0.88 lb/day
4E-3 ton/yr

Oxides of Nitrogen (NO_x as NO₂):
0.50 gm/bhp-hr
3.99 lb/hr
95.80 lb/day
0.40 ton/yr

Volatile Organic Compounds (VOC):
(as defined in Rule 210.1)
0.14 gm/bhp-hr
1.12 lb/hr
26.82 lb/day
0.11 ton/yr

Carbon Monoxide:
2.6 gm/bhp-hr
20.76 lb/hr
498.14 lb/day
2.08 ton/yr

(Emissions limits established pursuant to Rule 210.1 unless otherwise noted)

Compliance with maximum daily emission limits shall be verified by source operator (with appropriate operational data and record keeping to document maximum daily emission rate) each day source is operated and such documentation of compliance shall be retained and made readily available to District for period of three years. (Rule 210.1)



PRELIMINARY DETERMINATION OF COMPLIANCE

EASTERN KERN AIR POLLUTION CONTROL DISTRICT

Administrative Office: 2700 "M" Street Suite 302, Bakersfield, CA 93301
Phone: (661) 862-5250 • Fax: (661) 862-5251 • ekapcd@kerncounty.com
Tehachapi Field Office: Phone: (661) 823-9264 • Fax: (661) 823-0167

ISSUE DATE: XXXX XX, 2024	APPLICATION NO.:	0570004
EXPIRATION: XXXX XX, 2026	DATE:	MARCH 08, 2024

DETERMINATION OF COMPLIANCE IS HEREBY GRANTED TO:

WILLOW ROCK ENERGY STORAGE CENTER

DETERMINATION OF COMPLIANCE IS HEREBY GRANTED FOR:

Emergency Fire Pump Driven by 460-bhp Diesel Fueled Piston Engine

(See attached sheets for equipment description and conditions)

S SE33	T 10N	R 12W	Location: 0.4 mi. West of SR14 on Dawn Rd., Rosamond	Startup Inspection
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This document serves as a temporary Permit to Operate only as provided by Rule 201 of the District's Rules and Regulations. For issuance of a Permit to Operate, Rule 208 requires equipment authorized by this Determination of Compliance be installed and operated in accordance with conditions of approval. Changes to these conditions must be made by application and must be approved before such changes are made. This document does not authorize emission of air contaminants in excess of New Source Review limits (Rule 210.1) or Regulation IV emission limits. Emission testing requirements set forth on this document must be satisfied before a Permit to Operate can be granted.

UPON COMPLETION OF CONSTRUCTION AND/OR INSTALLATION, PLEASE TELEPHONE DISTRICT

Validation Signature:

Glen E. Stephens, P.E.
Air Pollution Control Officer

CONDITIONS OF APPROVAL:

Pursuant to Rule 209, "conditional approval" is hereby granted. Please be aware compliance with all conditions of approval imposed by any applicable Determination of Compliance remain in effect for life of project, unless modified by application.

EQUIPMENT DESCRIPTION: Emergency Fire Pump Driven by a Diesel Piston Engine, including the following equipment and design specifications:

Emergency fire pump, driven by 460-bhp Cummins Model QSX15, EPA Certified (Tier 3) diesel fueled piston engine with turbocharger and after cooler. (EPA family RCEXL015.AAH and S/N TBD).

NOTIFICATION REQUIREMENTS:

In accordance with District Rule 201.II (Permits Required), a person shall notify the Control Officer before operating or using equipment granted in this Determination of Compliance. This Determination of Compliance shall serve as a temporary Permit to Operate only after such notification. Such notification shall be completed in writing. Intent to Use Notification form is available at the District website:

http://www.kernair.org/Main_Pages/Subpages/Forms_Sub/Application_Forms.html. Form can be mailed to the District Administrative Office at: 2700 "M" Street Suite 302, Bakersfield, CA 93301, e-mailed to the District at the following address: ekapcd@kerncounty.com, or sent by FAX to the District at: (661) 862-5251.

DESIGN CONDITIONS:

- a. Engine shall be equipped with turbocharger and charge air cooler. (Rule 210.1 BACT Requirement)
- b. Elapsed time meter shall be installed and maintained indicating cumulative hours of engine operating time. (Rule 210.1)
- c. Engine shall be equipped with a permanently affixed placard readily available for inspection with the following engine information: brake horsepower, make, model, serial number, and Tier number. (Rule 210.1)

OPERATIONAL CONDITIONS:

1. Total hours of operation (excluding maintenance and testing) shall not exceed 200 hours per year without prior District approval. (Rule 210.1)
2. Engine visible emissions shall be less than 5% opacity or Ringelmann No. ¼ during normal operation, except for not more than 3 minutes in any one hour. (Rule 210.1 BACT Requirement)
3. Fuel for diesel piston engine shall conform to California Air Resources Board standards for reformulated diesel fuel (low sulfur content, 0.0015% by weight). (Rule 210.1 BACT Requirement)
4. Exhaust gas particulate matter concentration shall not exceed 0.1 grains/ft³ of gas at standard conditions. (Rule 404.1)
5. Equipment shall be maintained according to manufacturer's specifications to ensure compliance with emission limitations. (Rules 209 and 210.1)
6. Operation of this equipment shall be conducted in compliance with all data and specifications submitted with application under which this permit is issued. (Rule 210.1)
7. Engine shall comply with the requirements of California Code of Regulations (CCR), Title 17, Section 93115 (Airborne Toxic Control Measure for Stationary Compression Ignition (CI) Engine). (CCR Title 17, Sections 93115 – 93115.15)
8. Maintenance and testing shall be limited to no greater than 50 hours per year. (CCR Section 93115)
9. Compliance with all operational conditions shall be verified by appropriate recordkeeping, including records of operational data needed to demonstrate compliance. Such records shall be kept on site in readily available format for a minimum of three years. (Rule 210.1)
10. Operating record of this equipment shall be maintained in format approved in writing by District and made available upon request of District personnel. Records shall include, at minimum, days and hours of operation, hours of

operation for emergency use, hours of operation for maintenance/testing, amount of fuel oil supplied to this engine, date(s) fuel was supplied, and engine maintenance check(s) including: air filters, fuel filters, oil filters, engine oil, exhaust system, coolant, and spark plugs (if so equipped). (Rule 210.1 & CCR Section 93115).

11. No emission resulting from use of this equipment shall cause injury, detriment, nuisance, annoyance to or endanger comfort, repose, health or safety of any considerable number of persons or public. (Rule 419 and CH&SC, Sec 41700)

STATE OF CALIFORNIA AIR TOXICS HOT SPOTS REQUIREMENTS:

Facility shall comply with California Health and Safety Code Sections 44300 through 44384. (Rule 208.1)

COMPLIANCE TESTING REQUIREMENTS:

Should inspection reveal conditions indicative of non-compliance, compliance with any emission limitations shall be verified within 60 days of District request. Test results shall be submitted to the District within 30 days after test completion. (Rule 108.1 and 209)

EMISSION LIMITS:

Maximum emissions rate of each air contaminant from this operation shall not exceed following limits:

<u>Particulate Matter (PM₁₀):</u>	0.15 gm/bhp-hr (ATCM Standard)
	0.15 lb/hr
	3.65 lb/day
	0.02 ton/yr
<u>Sulfur Oxides (SO_x as SO₂):</u>	0.01 lb/hr
	0.12 lb/day
	1E-3 ton/yr
<u>Oxides of Nitrogen (NO_x as NO₂):</u>	2.85 gm/bhp-hr (ATCM Standard)
	2.89 lb/hr
	69.37 lb/day
	0.29 ton/yr
<u>Volatile Organic Compounds (VOC):</u> (as defined in Rule 210.1)	0.15 gm/bhp-hr (ATCM Standard)
	0.15 lb/hr
	3.65 lb/day
	0.02 ton/yr
<u>Carbon Monoxide:</u>	2.6 gm/bhp-hr (ATCM Standard)
	2.64 lb/hr
	63.28 lb/day
	0.26 ton/yr

(Emissions limits established pursuant to Rule 210.1 unless otherwise noted)

Compliance with maximum daily emission limits shall be verified by source operator (with appropriate operational data and record keeping to document maximum daily emission rate) each day source is operated and such documentation of compliance shall be retained and made readily available to District for period of three years. (Rule 210.1)