



State of Utah

Department of
Environmental Quality

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Executive Director

DIVISION OF AIR QUALITY
Richard W. Sprott
Director

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FILE COPY

DAQE-AN3031001-05

January 6, 2005

Tom Cameron
Summit Vineyard LLC
6682 W. Greenfield Ave, Suite 109
West Allis, WI 53214

Dear Mr. Cameron:

Re: Approval Order: Approval for Lake Side Power Plant, Utah County, CDS A; NA; NSPS,
NESHAPS, HAPs, TITLE V MAJOR, PSD MAJOR, NAA/NSR MAJOR
Project Code: N3031-001

The attached document is the Approval Order (AO) for the above-referenced project.

Future correspondence on this Approval Order should include the engineer's name as well as the DAQE number as shown on the upper right-hand corner of this letter. Please direct any technical questions you may have on this project to Mr. John D. Jenks. He may be reached at (801) 536-4459.

Sincerely,

Richard W. Sprott, Executive Secretary
Utah Air Quality Board

RWS:JJ:jc

cc: Utah County Health Department

Mike Owens, EPA Region VIII

STATE OF UTAH

Department of Environmental Quality

Division of Air Quality

APPROVAL ORDER: Approval for Lake Side Power Plant

Prepared By: John D. Jenks, Engineer
(801) 536-4459
Email: jjenks@utah.gov

APPROVAL ORDER NUMBER

DAQE-AN3031001-05

Date: January 6, 2005

Summit Vineyard LLC
Source Contact
Tom Cameron
(414) 475-2015

Richard W. Sprott
Executive Secretary
Utah Air Quality Board

Abstract

Summit Vineyard LLC, has submitted a Notice of Intent (NOI) to install and operate a 560 MW electric generation plant in Utah County. The plant would be located on the site of the old Geneva Steel facility, and would consist of two (2) combustion turbine and heat recovery steam generator (HRSG) arrangements and a single steam turbine generator. The combustion turbines and HRSG units will be equipped with CO catalysts, SCR, and combustion controls featuring dry-low NO_x burners. This source is major under both the Prevention of Significant Deterioration (PSD) and Non-attainment Area New Source Review (NAA/NSR) regulations. Utah County is a Non-attainment area of the National Ambient Air Quality Standards (NAAQS) for PM₁₀. New Source Performance Standards (NSPS) A, Db, Dc, and Gg regulations apply to this source. The Acid Rain Program (Title IV) of the Clean Air Act applies to this source. Title V of the 1990 Clean Air Act applies to this source, with the requirement that the source submit a Title V Operating Permit application within one year of beginning operations.

The emissions, in tons per year, will be as follows: PM₁₀ 95.8, NO_x 138.3, SO₂ 26.5, CO 547.1, VOC 72.8, HAPs (Formaldehyde) 6.2.

Offsets requirements of 260.6 x 1.2 = 312.72 tons, of which PM₁₀ = 114.96, SO₂ = 31.8, NO_x = 165.96. This is referenced in DAQE-040-05.

The project has been evaluated and found to be consistent with the requirements of the Utah Administrative Code Rule 307 (UAC R307). A public comment period was held in accordance with UAC R307-401-4 and comments were received. The comments were evaluated and no comment was found to be adverse to the proposed AO. This air quality Approval Order (AO) authorizes the project with the following conditions, and failure to comply with any of the conditions may constitute a violation of this order.

General Conditions:

1. This Approval Order (AO) applies to the following company:

<u>Site Office</u>	<u>Corporate Office Location</u>
Summit Vineyard LLC	Summit Vineyard LLC
1825 North Pioneer Lane	C/O PEC, Suite 109
Vineyard, UT 84058	6682 W. Greenfield Ave
	West Allis, WI 53214
Phone Number	(414) 475-2015
Fax Number	(414) 475-4552

The equipment listed in this AO shall be operated at the following location:

1825 North Pioneer Lane, the project is located on the south side of 200 South Road, between North Pioneer Lane and 250 West (Proctor) Road.

Universal Transverse Mercator (UTM) Coordinate System: UTM Datum NAD27
4,464.5 kilometers Northing, 436.0 kilometers Easting, Zone 12

2. All definitions, terms, abbreviations, and references used in this AO conform to those used in the Utah Administrative Code (UAC) Rule 307 (R307) and Title 40 of the Code of Federal Regulations (40 CFR). Unless noted otherwise, references cited in these AO conditions refer to those rules.
3. The limits set forth in this AO shall not be exceeded without prior approval in accordance with R307-401.
4. Modifications to the equipment or processes approved by this AO that could affect the emissions covered by this AO must be reviewed and approved in accordance with R307-401-1.
5. All records referenced in this AO or in applicable NSPS standards, which are required to be kept by the owner/operator, shall be made available to the Executive Secretary or Executive Secretary's representative upon request, and the records shall include the two-year period prior to the date of the request. Records shall be kept for the following minimum periods:
 - A. Emission inventories Five years from the due date of each emission statement or until the next inventory is due, whichever is longer.
 - B. All other records Five years
6. Summit Vineyard LLC (Summit) shall install and operate the Lake Side Power Plant and shall conduct its operations of the same in accordance with the terms and conditions of this AO, which was written pursuant to Summit's Notice of Intent submitted to the Division of Air Quality (DAQ) on May 24, 2004.
7. The approved installations shall consist of the following equipment or equivalent*:
 - A. Two (2) Siemens-Westinghouse* 501F natural gas-fired dry low-NO_x, combined cycle turbines, each with 130 foot stack (as measured from the base of the stack)
 - B. Two (2) heat recovery steam generators (HRSGs), equipped with low NO_x duct burners (184 MMBtu/hr each)
 - C. Two (2) CO catalysts, one for each turbine/HRSG set
 - D. Two (2) Selective Catalytic Reduction (SCR) systems with ammonia injection, one for each turbine/HRSG set
 - E. One (1) steam turbine**
 - F. One (1) natural gas-fired 49 MMBtu/hr auxiliary boiler with 40 ft. boiler stack (as measured from the base of the stack)
 - G. One (1) 1,490 hp diesel-fired emergency generator
 - H. One (1) 290 hp diesel-fired fire pump

- I. One (1) 3.67 MMBtu/hr fuel dew point heater
- J. One (1) 10 Cell mechanical draft evaporative cooling tower with drift elimination
- K. Water treatment and storage facilities**
- L. Aqueous ammonia storage and handling equipment**

* Equivalency shall be determined by the Executive Secretary.

** This equipment is listed for informational purposes only. There are no emissions from this equipment.

- 8. Summit shall notify the Executive Secretary in writing when the installation of the equipment listed in Condition #7 has been completed and is operational, as an initial compliance inspection is required. To insure proper credit when notifying the Executive Secretary, send your correspondence to the Executive Secretary, attn: Compliance Section.

If construction and/or installation has not been completed within eighteen months from the date of this AO, the Executive Secretary shall be notified in writing on the status of the construction and/or installation. At that time, the Executive Secretary shall require documentation of the continuous construction and/or installation of the operation and may revoke the AO in accordance with R307-401-11.

Limitations and Tests Procedures

- 9. Emissions to the atmosphere from the indicated emission point(s) shall not exceed the following rates and concentrations:

Source: Auxiliary Boiler

<u>Pollutant</u>	<u>Limitations at 15% O₂</u>	<u>Averaging Period</u>
PM ₁₀	0.01 lb/MMBtu	3-hour
NO _x	0.017 lb/MMBtu	3-hour
CO	0.037 lb/MMBtu	3-hour

Source: Each Turbine/HRSG Stack

<u>Pollutant</u>	<u>Limitations at 15% O₂</u>	<u>Averaging Period</u>
PM ₁₀	10.8 lb/hour (0.01 lb/MMBtu)	24-hour**
NO _x	2.0 ppmvd (14.9 lb/hr)*	3-hour
CO	3.0 ppmvd (14.1 lb/hr)*	3-hour

* Under steady state operation.

** Based on a 24-hour test run or any method approved by the Executive Secretary, which will provide 24-hour data

Source: Each Turbine/HRSG Stack

<u>Pollutant</u>	<u>Emission Limit at 15% O₂</u>	<u>Averaging Period</u>
NO _x	744.0 lb/24 hour period	24-hour
CO	3,182 lb/8 hour period	8-hour

Source: Each Turbine (NSPS Subpart GG Limitation)

<u>Pollutant</u>	<u>Limitation at 15% O₂</u>	<u>Averaging Period</u>
NO _x	112.0 ppmvd	***

*** NSPS Subpart GG Limitation (see Condition #18)

10. Stack testing to show compliance with the emission limitations stated in the above condition shall be performed as specified below:

A.

<u>Emissions Point</u>	<u>Pollutant</u>	<u>Testing Status</u>	<u>Test Frequency</u>
HRSG Stack(s)	PM ₁₀	*	\$
	NO _x	*	#
	CO	*	#
Auxiliary Boiler	PM ₁₀	*	%
	NO _x	*	%
	CO	*	%

- B. Testing Status (To be applied to the source listed above)

- * Initial compliance testing is required. The initial test date shall be performed as soon as possible and in no case later than 180 days after the start up of a new emission source, an existing source without an AO, or the granting of an AO to an existing emission source that has not had an initial compliance test performed. If an existing source is modified, a compliance test is required on the modified emission point that has an emission rate limit.
- \$ Test every year or testing may be replaced with parametric monitoring if approved by the Executive Secretary
- % Test every five (5) years or testing may be replaced with parametric monitoring if approved by the Executive Secretary
- # Compliance shall be demonstrated through use of a Continuous Emissions Monitoring System (CEM) as outlined in Conditions #14.A and #20 below. The Executive Secretary may require testing at any time.

C. Notification

The Executive Secretary shall be notified at least 30 days prior to conducting any required emission testing. A source test protocol shall be submitted to DAQ when the testing notification is submitted to the Executive Secretary.

The source test protocol shall be approved by the Executive Secretary prior to performing the test(s). The source test protocol shall outline the proposed test methodologies, stack to be tested, and procedures to be used. A pretest conference shall be held, if directed by the Executive Secretary.

D. Sample Location

The emission point shall be designed to conform to the requirements of 40 CFR 60, Appendix A, Method 1, or other methods as approved by the Administrator. An Occupational Safety and Health Administration (OSHA) or Mine Safety and Health Administration (MSHA) approved access shall be provided to the test location.

E. Volumetric Flow Rate

40 CFR 60, Appendix A, Method 2 or EPA Test Method No. 19 "SO₂ Removal & PM, SO₂, NO_x Rates from Electric Utility Steam Generators" or other testing methods approved by the Administrator.

F. PM₁₀

For stacks in which no liquid drops are present, the following methods shall be used: 40 CFR 51, Appendix M, Methods 201, 201a and 202, or other testing methods approved by the Administrator. All particulate captured shall be considered PM₁₀. The back half condensibles shall be used for compliance demonstration as well as for inventory purposes.

For stacks in which liquid drops are present, methods to eliminate the liquid drops should be explored. If no reasonable method to eliminate the drops exists, then the following methods shall be used: 40 CFR 60, Appendix A, Method 5, 5a, 5d, or 5e as appropriate, or other testing methods approved by the Administrator. The back half condensibles shall also be tested using the method specified by the Administrator. The portion of the front half of the catch considered PM₁₀ shall be based on information in Appendix B of the fifth edition of the EPA document, AP-42, or other data acceptable to the Administrator.

G. Nitrogen Oxides (NO_x)

40 CFR 60, Appendix A, Method 7, 7A, 7B, 7C, 7D, 7E, or other testing methods approved by the Administrator.

H. Carbon Monoxide (CO)

40 CFR 60, Appendix A, Method 10, or other testing methods approved by the Administrator.

I. Calculations

To determine mass emission rates (lb/hr, etc.) the pollutant concentration as determined by the appropriate methods above shall be multiplied by the volumetric flow rate and any necessary conversion factors determined by the Executive Secretary, to give the results in the specified units of the emission limitation.

11. Compliance with the 3-hour NO_x and CO emission limitations specified in Condition #9 shall not be required during short-term excursions, limited to a cumulative total of 160 hours annually. Short-term excursions are defined as 15-minute periods designated by the Owner/Operator that are the direct result of transient load conditions, not to exceed four consecutive 15-minute periods, when the 15-minute average NO_x and CO concentrations exceed 2.0 ppmv and 3.0 ppmv, dry @ 15% O₂, respectively. Transient load conditions include the following:

- (1) Initiation/shutdown of combustion turbine inlet air-cooling
- (2) Rapid combustion turbine load changes
- (3) Initiation/shutdown of HRSG duct burners
- (4) Provision of Ancillary Services and Automatic Generation Control

During periods of transient load conditions, the NO_x concentration shall not exceed 25 ppmv and the CO concentration shall not exceed 50 ppmv, dry @ 15% O₂. All NO_x and CO emissions during these events shall be included in all calculations of annual mass emissions as required by this permit.

12. Steady state operation means all periods of combustion turbine operation, except for periods of startup and shutdown as defined below, and periods of transient load conditions as defined in condition 11. Startup is defined as the period beginning with turbine initial firing until the unit meets the ppmvd emission limits in the first table of Condition #9 for steady state operation. Shutdown is defined as the period beginning with the initiation of turbine shutdown sequence and ending with the cessation of firing of the gas turbine engine. Startup and shutdown events shall not exceed 613.5 hours per turbine per calendar year and are counted toward the applicable annual emission limitations.

The total startup and shutdown period shall not exceed 14-hours in any one calendar day, commencing at midnight. Emissions during startup and shutdown periods must be counted toward the applicable annual emission limitations.

13. Visible emissions from the following emission points shall not exceed the following values:
- A. All natural gas combustion exhaust stacks - 10% opacity
 - B. All other points - 20% opacity

Opacity observations of emissions from stationary sources shall be conducted according to 40 CFR 60, Appendix A, Method 9.

14. The following limits shall not be exceeded:

Combined emissions of $PM_{10} + NO_x + SO_2$ shall not be greater than 260.6 tons per calendar year (from the plant-gas turbines, the duct burners, fire pump, auxiliary boiler, cooling tower and emergency generator)

Compliance with the above emission limitation for required offsets shall be determined as follows:

- A. NO_x from the gas turbine and the duct burner shall be obtained from CEMS recorded data
- B. PM_{10} from the gas turbine and the duct burner shall be obtained from the latest emission test record data
- C. SO_2 from the gas turbine and the duct burner shall be from the latest emission test or if testing is not required by the other alternative method as approved by the Executive Secretary or Administrator.
- D. NO_x , PM_{10} and SO_2 for auxiliary boiler, emergency generator, cooling tower and fire pump shall be obtained from the U.S. EPA's compilation of air pollutants emission factors, AP-42.

To determine compliance with the combined annual limit the owner/operator shall calculate average hourly rate (using CEMS recorded data as outlined in Condition #21, test results and AP-42 calculations) and sum them over calendar year.

15. Emergency generators shall be used for electricity producing operation only during the periods when electric power from the public utilities is interrupted, and for regular maintenance and testing. Records documenting generator usage shall be kept in a log and they shall show the date the generator was used, the duration in hours of the generator usage, and the reason for each generator usage.

Fuels

16. The owner/operator shall use natural gas as fuel in the combustion turbines, duct burners and auxiliary boiler.
17. The owner/operator shall use a combination of #2 fuel oil or diesel fuel in the emergency generators and fire pump.

The sulfur content of any #2 fuel oil or diesel fuel burned shall not exceed 0.05 percent by weight. Sulfur content shall be determined by ASTM Method D-4294-89, or approved equivalent. Certification of fuels shall be either by the owner/operator's own testing or test reports from the fuel marketer. For purposes of demonstrating compliance with this limitation, the owner/operator may obtain the above specifications by testing each

purchase of fuel in accordance with the required methods; by inspection of the specifications provided by the vendor for each purchase of fuel; or by inspection of summary documentation of the fuel sulfur content from the vendor; provided that the above specifications are available from the vendor for each purchase if requested.

Federal Limitations and Requirements

18. In addition to the requirements of this AO, all applicable provisions of 40 CFR 60, New Source Performance Standards (NSPS) Subpart A, 40 CFR 60.1 to 60.18; Subpart GG, 40 CFR 60.330 to 60.334 (Standards of Performance for Stationary Gas Turbines); Subpart Db, 40 CFR 60.40b to 60.49b (Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units); and Subpart Dc, 40 CFR 60.40c to 60.49c (Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units) – apply to this installation as follows:

Subpart Db: Heat Recovery Steam Generators (HRSGs)
Subpart Dc: Auxiliary Boiler
Subpart GG: Combustion Turbines

19. In addition to the requirements of this AO, all applicable provisions of 40 CFR Part 72, 73, 75, 76, 77 and 78, Federal Regulations for the Acid Rain Program under Clean Air Act Title IV apply to this installation.

Monitoring - Continuous Emissions Monitoring

20. The owner/operator shall install, calibrate, maintain, and operate a continuous emissions monitoring system on each of the HRSG stacks. The owner/operator shall record the output of the system, for measuring the NO_x and CO emissions. The monitoring system shall comply with all applicable sections of R307-170; 40 CFR 13; and 40 CFR 60, Appendix B.

All continuous emissions monitoring devices as required in federal regulations and state rules shall be installed and operational prior to placing the affected source in operation. Except for system breakdown, repairs, calibration checks, and zero and span adjustments required under paragraph (d) 40 CFR 60.13, the owner/operator of an affected source shall continuously operate all required continuous monitoring systems and shall meet minimum frequency of operation requirements as outlined in 40 CFR 60.13 and Section R307-170.

Records & Miscellaneous

21. At all times, including periods of startup, shutdown, and malfunction, owners and operators shall, to the extent practicable, maintain and operate any equipment approved under this Approval Order including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Executive Secretary which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source. All maintenance performed on equipment authorized by this AO shall be recorded.

- 22. The owner/operator shall comply with R307-150 Series. Inventories, Testing and Monitoring.

The Executive Secretary shall be notified in writing if the company is sold or changes its name.

Under R307-150-1, the Executive Secretary may require a source to submit an emission inventory for any full or partial year on reasonable notice.

This AO in no way releases the owner or operator from any liability for compliance with all other applicable federal, state, and local regulations including R307.

A copy of the rules, regulations and/or attachments addressed in this AO may be obtained by contacting the Division of Air Quality. The Utah Administrative Code R307 rules used by DAQ, the Notice of Intent (NOI) guide, and other air quality documents and forms may also be obtained on the Internet at the following web site:

<http://www.airquality.utah.gov/>

The annual emissions estimations below are for the purpose of determining the applicability of Prevention of Significant Deterioration, non-attainment area, maintenance area, and Title V source requirements of the R307.

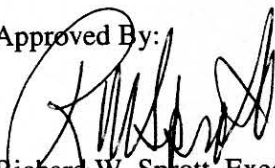
They are not to be used for determining compliance.

The Potential To Emit (PTE) emissions for this source are currently calculated at the following values:

	<u>Pollutant</u>	<u>Tons/yr</u>
A.	PM ₁₀	95.8
B.	SO ₂	26.5
C.	NO _x	138.3
D.	CO	547.1
E.	VOC	72.8
F.	HAPs	
	Formaldehyde	6.2

Offsets requirements of $260.6 \times 1.2 = 312.72$ tons, of which PM₁₀ = 114.96, SO₂ = 31.8, NO_x = 165.96

Approved By:



Richard W. Sprott, Executive Secretary
Utah Air Quality Board