San Diego County Air Pollution Control District

STATEMENT OF PROCEEDINGS
SAN DIEGO COUNTY AIR POLLUTION CONTROL DISTRICT HEARING BOARD
Regular Meeting, Thursday, June 20, 2024
9:00 a.m.

ORDER OF BUSINESS

ROLL CALL

Members present: Steve Engleman, Alison Schlick, and Daniel Spencer

Members absent: Corrie Zupo

Staff present: William Jacques, SDAPCD Chief Departmental Operations; Mary Mahoney, SDAPCD Program Coordinator; Nicole Sheridan, SDAPCD Civil Actions Investigator; Nathan Gutzwiller, SDAPCD Senior Air Pollution Control Chemist; Emily Helms, Senior Deputy County Counsel SDAPCD, and Mia Ruffier, SDAPCD Clerk of the Hearing Board

SWORN OATH OF WITNESSES BY CLERK

All witnesses providing public testimony during the meeting were sworn-in by the Clerk of the SDAPCD Hearing Board.

ADMINISTRATIVE ITEM:

A. Public Communication

Purita Javier spoke to the Hearing Board regarding residential neighborhood air concerns.

Cesar Javier spoke to the Hearing Board regarding residential neighborhood air concerns.

B. Approval of Statement of Proceedings for May 23, 2024.

ACTION:
ON MOTION of Vice Chair Spencer, seconded by Chair Schlick, the San Diego County Air Pollution Control District Hearing Board approved the Statement of Proceedings for the meeting of May 23, 2024, as amended.

AYES: Engleman, Schlick, Spencer
ABSENT: Zupo

PETITION(S) BEFORE THE BOARD:

4540 SAN DIEGO COUNTY AIR POLLUTION CONTROL DISTRICT, COUNTY OF SAN DIEGO abatement order against respondent **ESCONDIDO BIOENERGY FACILITY, LLC** located at 1521 S. Hale Avenue, Escondido, CA 92029.

ACTION:
ON MOTION Chair Schlick, seconded by Vice Chair Spencer, the Air Pollution Control District Hearing Board accepted Respondent's presentation as Exhibit A.

AYES: Engleman, Schlick, Spencer
ABSENT: Zupo

ACTION:
ON MOTION Member Engleman, seconded by Vice Chair Spencer, the San Diego County Air Pollution Control District Hearing Board approved the Abatement Order between the San Diego County Air Pollution Control District, Petitioner, and Escondido Bioenergy Facility, LLC, Respondent.

AYES: Engleman, Schlick, Spencer
ABSENT: Zupo

ADJOURNMENT:
The SDAPCD Hearing Board adjourned the June 20, 2024 meeting at 10:32 a.m.

ASSISTANCE FOR THE DISABLED:
Agendas and records are available in alternative formats upon request. Contact the SDAPCD Hearing Board Clerk at 858-586-2600 with questions or to request a disability-related accommodation including sign language interpretation. To the extent reasonably possible, requests for accommodation or assistance should be submitted at least 72 hours in advance of the meeting so that arrangements may be made.

Pursuant to Government Code 54957.5, written materials distributed to the Hearing Board in connection with this agenda less than 72 hours before the meeting will be available to the public at the San Diego County Air Pollution Control District, 10124 Old Grove Road, San Diego, CA 92131.

The statements contained in this draft document are subject to change until they are approved in their final form by the San Diego County Air Pollution Control District Hearing Board at a subsequent public meeting.

San Diego County Air Pollution Control District

ADMINISTRATIVE ITEM:

A. Public Communication

ACTION:
Purita Javier spoke to the Hearing Board regarding residential neighborhood air concerns.
Cesar Javier spoke to the Hearing Board regarding residential neighborhood air concerns.

MIA RUFFIER
Clerk of the San Diego County Air Pollution Control District Hearing Board

Air Pollution Control District Hearing Board

DATE 22 June 20 Petition Number NA

SUBJECT Ceramics TOXICITY in Residential Zone

REQUEST TO SPEAK

PLEASE PRINT NAME LEGIBLY

Name [illegible]
First Last

Organization Name Community Volunteer

Please check below:

[ ] Officer or Authorized Employee for Petitioner

[ ] Agent or Legal Representation

PLEASE SEE GUIDE FOR SPEAKERS ON REVERSE

(FOR PETITIONER)

OTHER THAN APCD

03/22/2023

spoke

Air Pollution Control District Hearing Board

DATE 20 June 20 Petition Number N/A

SUBJECT Ceramics Toxicity in Residential Zone

REQUEST TO SPEAK

PLEASE PRINT NAME LEGIBLY

Name CESAR JAMEZ
First Last

Organization Name Community Volunteer

Please check below:

[ ] Officer or Authorized Employee for Petitioner

[ ] Agent or Legal Representation

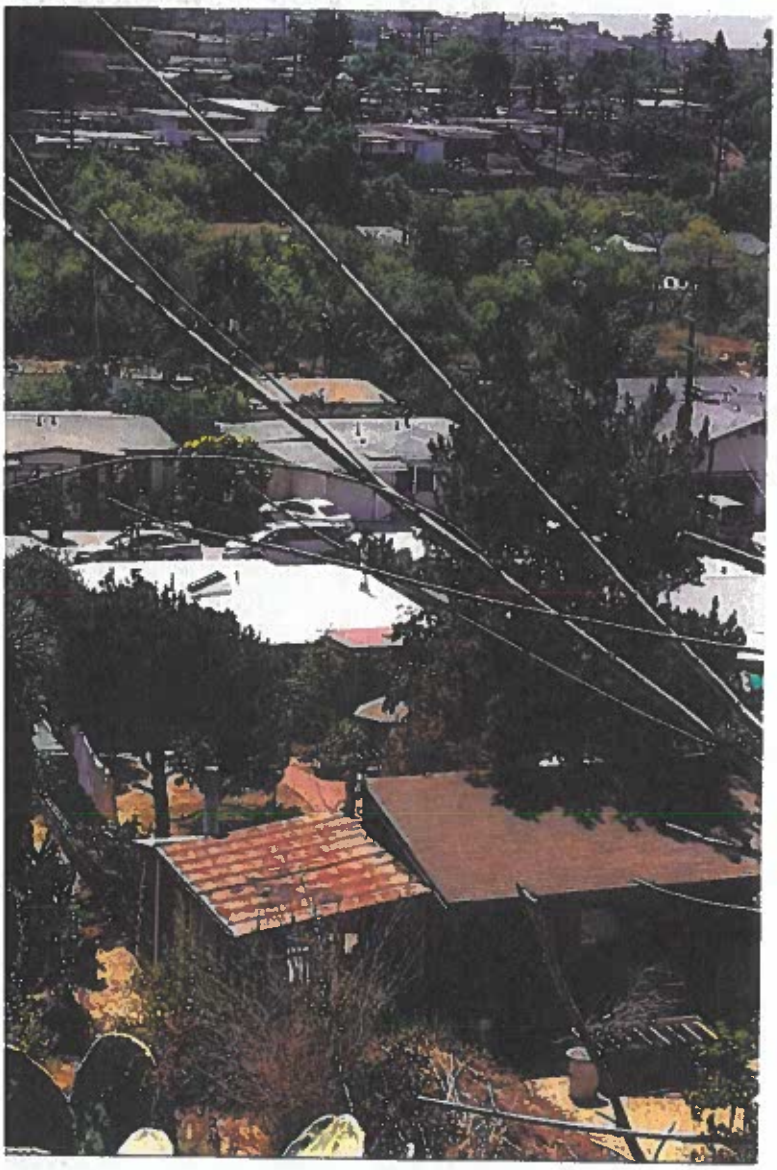
PLEASE SEE GUIDE FOR SPEAKERS ON REVERSE

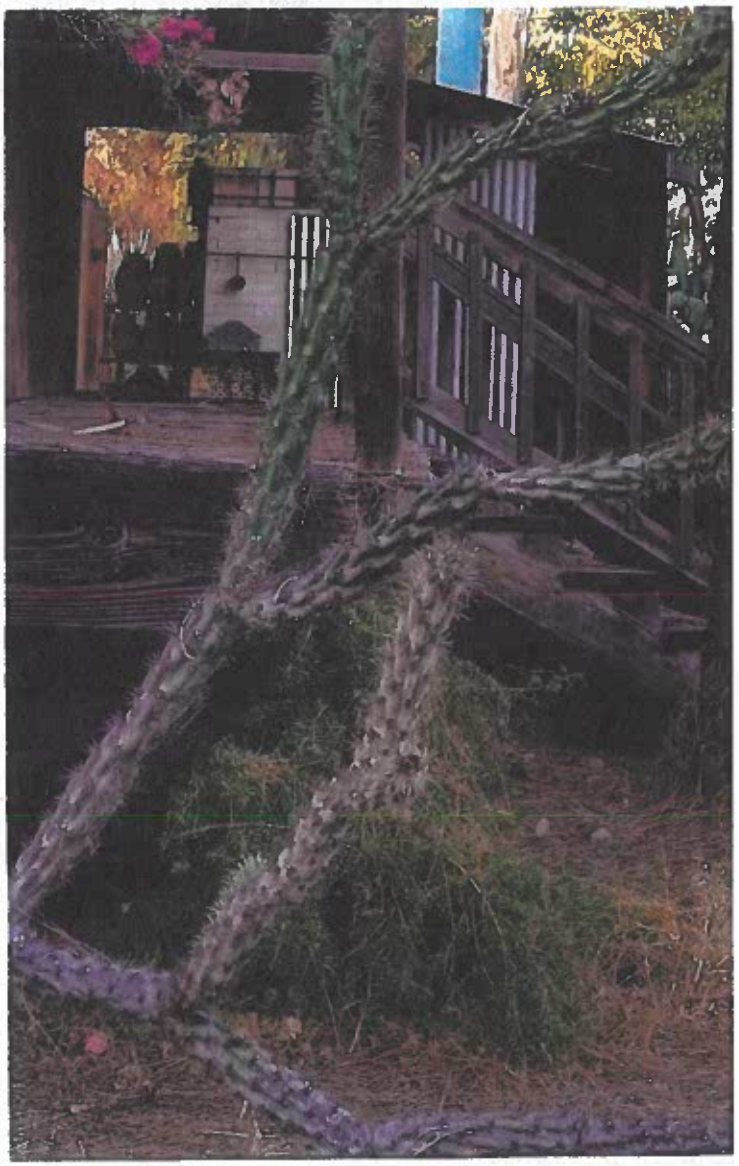
(FOR PETITIONER)

OTHER THAN APCD

03/22/2023

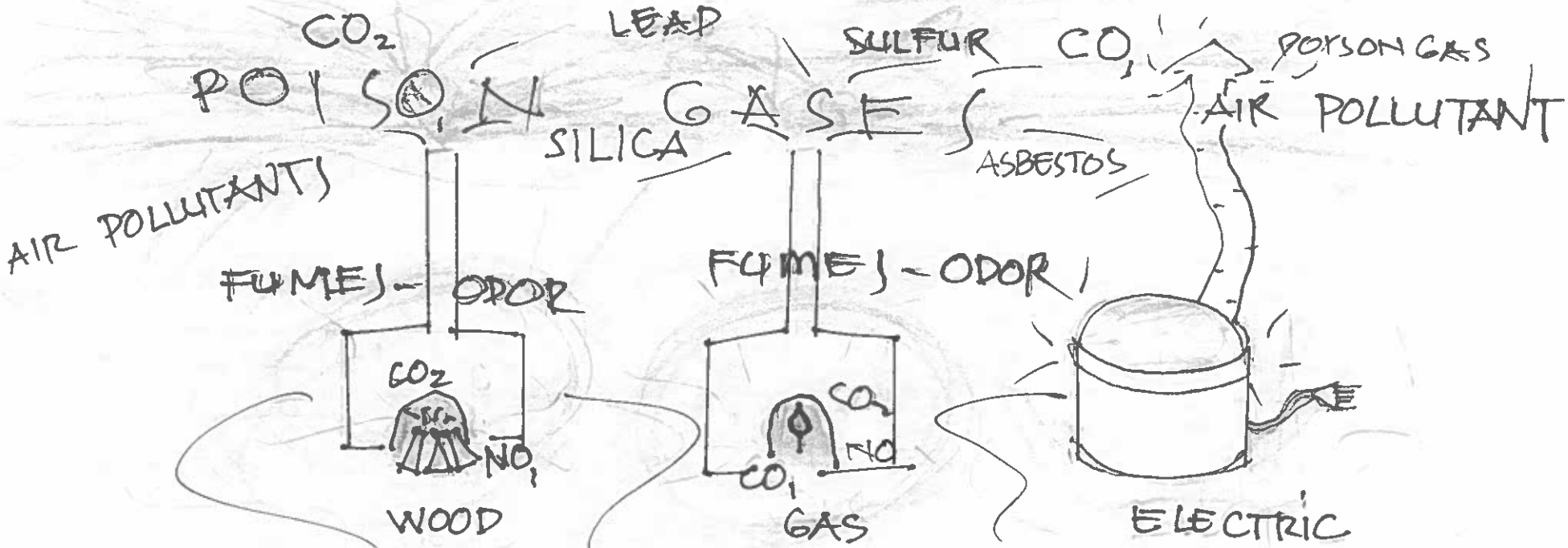
spoke





HAZARDS OF CERAMICS

Jan 24, 2023



TOXIC DUST & WASTE

* Heating... Baking.... Cooking Ceramics and mixed chemical materials, all emits / produces POISON GAS !

TOXIC DUST WASTE

CITY OF SAN DIEGO

04/03/2024

OFFICE OF THE CITY TREASURER
BUSINESS TAX PROGRAM
PO BOX 122289
SAN DIEGO CA 92112-2289
(619) 615-1500 8:00 a.m. - 5:00 p.m M-F

REQUEST FOR BUSINESS TAX INFORMATION FORM

Request Date:	04/03/2024
Business Tax Certificate #:	1984017665
Business Name:	DONALD FRASER
Business Owner Name:	FRASER DONALD
Ownership Type:	SOLE PROPRIETORSHIP
Business Start Date:	12/17/1984
Expiration Date:	12/31/2024
Account Status:	ACTIVE
Fee Status:	PAID
Primary Business Type:	NONMETALLIC MINERAL PRODUCT MFG
Secondary Business Type:	
Processing User Id:	RROSALES

Business Address

5238 STREAMVIEW DR
SAN DIEGO CA 92105-3204

Ownership Information

Name	Role
DONALD FRASER	OWNER

Pls. note that the business is actually Ceramics & kiln industrial economic activity. We inquired from the supervisor City Treasurer's office why they issued Business Tax (license, permit), Makam Rosales said..." They do not have regulatory authority which means they don't have to determine what the business is.

Mr Donald Fraser (& wife Evelyn Fraser) is paying $38.00 annually.. (to conduct some business poisoning our air we breath).. And what about the left over & trash disposal.

Since 1984 the damage had & has been done! Ba

We pray that the deaths have been coincidence(s) and not correlated to poison gassing!

Here are our diagnosis from KP and Sharp respective Doctors.

It is fear that lurks... nightmare.. stigma..

Purita's husband fell at our backyard, broke his hips..., rehabilitated ... and passed away at his home quickly with slight stroke stroke (from the Death Certificate)...

The county & city including Air Pollution Control District (also Federal EPA, State EPA ....) are are aware .. And our subject of petition since 2014...

We are informing all these concerns because:

1) You deserve to know what is happening as guardian of peace and as a father

2) We believe we can do something collectively.

Our handicapped Asian Americans, mostly are not engaged on this particular issue on air quality we all need.

3) Our home.. your home ought to be (hard earned property - source of joy and fulfillment) is at stake.

Prayerfully, this effort of ours (diplomatic, peaceful, ...) will put an end to our sufferings.

CESAR & Purita, your vulnerable neighbors - taxpayers.

FIS... See Research of Princeton, Baylor University & Goshian College.

Section 12: Ceramics

- ▶ Clay
- ▶ Glazes
- ▶ Kilns
- ▶ Special Processes
- ▶ Leaching of Finished Ceramic Ware

Ceramic art and pottery has a wide variety of hazards. The specific hazards and precautions can be divided into four areas:

- working with clay
- glazing and coloring
- firing in a kiln
- potential leaching of finished ware

Clay

Clays are minerals composed of hydrated aluminum silicates, often containing large amounts of crystalline silica. Other impurities may include organic matter or sulfur compounds. Sometimes, grog (ground firebrick), sand, talc, vermiculite, perlite, and small amounts of minerals such as barium carbonate and metal

oxides, are added to modify clay properties. Clays can be worked by hand or on the potter's wheel, or cast in a clay slurry into molds.

Clay is made by mixing dry clay with water in clay mixer. Clay slip is made by adding talcs which themselves can be contaminated with fibrous asbestos or asbestos-like materials. Geographical sources of talcs are relevant, for example, New York State talcs are notoriously asbestos-contaminated, while Vermont talcs are not. Pfizer has some fiber-free talcs.

Hazards

- There have been known cases of silicosis, or "potter's rot", from chronic inhalation of large amounts of free silica during clay mixing. Symptoms of silicosis include: shortness of breath, dry cough, emphysema, and high susceptibility to lung infections such as tuberculosis. The disease may take years to develop. Silica dust exposure is not hazardous by skin contact or ingestion.
- Chronic inhalation of kaolin is moderately hazardous, and can result in kaolinosis, a disease in which the lungs become mechanically clogged.
- Asbestos is extremely toxic by inhalation and possibly by ingestion. Asbestos inhalation may cause asbestosis, lung cancer, mesothelioma, stomach cancer, and intestinal cancer.
- Sand, perlite, grog, and vermiculite contain free silica and are, therefore, highly toxic by inhalation. Vermiculite is also frequently contaminated with asbestos.
- There is a danger of accidents if clay or water can be added while the mixer is in operation.
- Bags of clay and glaze materials can be very heavy, and lifting can cause back problems.
- Hypersensitivity pneumonia, asthma, or other respiratory problems may occur with exposure to molds growing in wet clay that is being soured or aged in a damp place, in slips that stand for months, or with inhalation of dry aged clay. Molds can cause or exacerbate skin problems and change the workability of clay.
- Throwing on a potter's wheel for long periods of time can result in carpel tunnel syndrome because of the awkward position of the wrists. Pain, numbness and/or pins and needles in the thumb and first three fingers, are common symptoms. Back problems can occur from bending over the potters wheel for long periods of time.

- Hand contact with wet clay can result in abrasion and dryness of fingertips and hands. Moving parts of kickwheels can cause cuts and abrasions.
- Clay scraps on the floor, bench and other surfaces can dry and pulverize, producing an inhalation hazard due to the presence of free silica. Similarly, reconditioning clay by pulverization and sanding finished green ware, can create very high concentrations of hazardous silica dust.

Precautions

- Use premixed clay to avoid exposure to large quantities of clay dust.
- Clay storage and mixing should take place in a separate room. Bags of clay (and other pottery materials) should be stacked on palettes or grids off the floor for easier clean-up.
- All clay mixers should be equipped with local exhaust ventilation to remove fine silica dust particles from the air.
- Clay mixers should be equipped with proper machine guards so that they cannot be opened to add clay or water while the mixer blades are turning.
- Wear separate work clothes while in the studio. Choose clothes of material and design that don't trap dust. Wash these clothes weekly, and separately from other laundry.
- Avoid contact of clay with broken skin. Use a skin moisturizer.
- To prevent back problems, always lift with knees bent. Also, use a standup wheel (Cranbrook style treadle wheel), or elevate electric wheels to a height that doesn't require bending over. Exercise and massage may relieve minor muscular pain.
- Keep wrists in unflexed position as much as possible to prevent carpel tunnel syndrome. Take frequent work breaks.
- Be careful of the moving parts on kickwheels.
- Recondition clay by cutting still-wet clay into small pieces, letting them air-dry, and soak in water.
- Finish green ware while still wet or damp with a fine sponge instead of sanding when dry. Do not sand greenware containing fibrous talc.
- Wet mop floors and work surfaces daily to minimize dust levels and prevent dry scraps from becoming pulverized.

Glazes

Glazes used to color or finish clay pieces are a mixture of silica, fluxes and colorants. Common fluxes include lead, barium, lithium, calcium and sodium, and are used to lower the melting point of silica. The actual colorants, which are an assortment of metal oxides usually account for less than 5% of the glaze by weight.

Originally, soluble raw lead compounds including red lead, white lead, galena, and litharge were used as fluxes in low-fire glazes. In fact, over 400 cases of lead poisoning were reported in British potters in 1897. Lead frits and good housekeeping greatly lowered the number of potters that had been poisoned by these highly toxic lead compounds. Frits are made of melted minerals and metal compounds that are sintered and ground into powder form. While lead frits are sometimes assumed to be insoluble and nontoxic, leaching tests with acids have shown that many frits are as soluble as raw lead compounds and, in fact, there have been cases of lead poisoning from both inhalation or ingestion of these.

High fire porcelain and stoneware techniques eliminate the need for lead as a flux. Also, alkali earth or alkaline earth fluxes can be used for low-fire conditions instead of lead. Silica may also be removed from leadless type glazes. The substitution can be based on boric oxide as the glass-former, instead of silica. Alkali earth fluxes include sodium, potassium, and lithium oxides; alkaline earth fluxes include calcium, magnesium, barium, and strontium oxides. Minerals containing these fluxes include certain feldspars, nepheline syenite, petalite, bone and plant ashes, whiting, and dolomite.

An assortment of metal oxides or other metal compounds produce particular colors when fired. These are added in such small amounts to the glaze, that they aren't usually a great hazard. Luster or metallic glazes are fired in a reduction atmosphere. These glazes can contain mercury, arsenic, highly toxic solvents such as aromatic and chlorinated hydrocarbons, and oils such as lavender oil. The common metals are often resinates of gold, platinum, silver, and copper. Some underglazes and overglazes use mineral spirits as the vehicle instead of water.

Glaze components are weighed, sorted and mixed with water. These materials are often in fine powdered form, and result in high dust exposures. Glazes can be dipped, brushed, poured, or sprayed on the ceramic piece.

Hazards

- Lead compounds are highly toxic by inhalation or ingestion. Symptoms of lead poisoning include: damage to the peripheral nervous system, brain,

kidney, or gastrointestinal system, as well as anemia, chromosomal damage, birth defects and miscarriages.

- Lead-glazed foodware can leach lead if not fired properly, or if the glaze composition is not correctly adjusted. For example, the addition of copper to lead frits renders a higher solubility of lead in the final fired ware. Acidic drinks and foods such as tomato juice, citric juices, sodas, tea, or coffee, can increase this hazard.
- A glaze label marked "lead-safe" means that the finished ware, if fired properly, will not release lead into food or drink. The actual glaze is still hazardous to handle and fire and may contain lead. Adequate control over firing conditions is very difficult in the craft studio.
- Other fluxes such as barium and lithium are also highly toxic by inhalation, but less so than lead.
- Certain colorant compounds of particular metals are known or probable human carcinogens, including: arsenic, beryllium, cadmium, chromium (VI), nickel, and uranium.
- Antimony, barium, cobalt, lead, lithium, manganese, and vanadium colorant compounds are highly toxic by inhalation.
- Antimony, arsenic, chromium, vanadium, and nickel compounds are moderately toxic by skin contact.
- Free silica occur in many of the clays, plant ash, flint, quartz feldspars, talcs, etc. used in glazes. See the discussion above for the hazards of silica and the disease silicosis. Weighing and mixing glazes can result in the inhalation of these toxic materials.
- Soda ash, potassium carbonate, alkaline feldspars, and fluorspar used in glazes are skin irritants.
- Spray application of glazes is very hazardous because of the potential inhalation of glaze mists.
- Dipping, pouring, and brushing certain glazes may cause skin irritation and accidental ingestion due to careless personal hygiene habits.
- Glazes containing solvents are both flammable and hazardous.

Precautions

- Use lead-free glazes. If the glaze does not state "lead-free" or "leadless" on the label, assume it contains lead until proven otherwise.

- Lead glazes should only be used on non-foodware items. Design lead-glazed pieces so that they won't be used for food or drink. Lead-glazed pottery should be labeled as lead-containing.
- If possible, don't use colorants that are known human carcinogens and avoid probable human carcinogens. There is no known safe level of exposure to carcinogens.
- Consider wearing a respiratory when weighing and mixing powdered. Wet glazes are not an inhalation hazard. Good housekeeping procedures and cleanup of spills reduce the risk of inhalation or ingestion of toxic dusts. Wet mop spilled powders.
- Gloves should be worn while handling wet or dry glazes.
- Good dilution ventilation or local exhaust ventilation should be available when applying solvent-containing glazes.
- Basic personal hygiene rules should be followed including restricting eating, drinking, or smoking in the studio, and wearing personal protective equipment such as gloves, and separate work clothes or coveralls. Wash hands after work. Leftover glazes and glaze scrapings can be homogenized, combined, tested, and used as a glaze.

Kilns

Electric kilns and fuel-fired kilns are used to heat the pottery to the desired firing temperature. The most common type are the electric kilns. Heating elements heat the kiln as electric current passes through the coils. The temperature rises until the kiln is shut off.

Fuel-fired kilns are heated by burning gas (natural or propane), oil, wood, coke, charcoal or other materials. Propane gas or natural gas is used most often. These kilns can be either located indoors or outdoors. The fuels produce carbon monoxide and other combustion gases. Fuel-fired kilns are usually vented from the top through a chimney.

Firing temperatures can vary from as low as 1,382°F for raku and bisque wares, to as high as 2,372°F for stoneware, and 2,642°F for certain porcelains.

The early stages of bisque firing involves the oxidization of organic clay matter to carbon monoxide and other combustion gases. Sulfur breaks down later producing highly irritating sulfur oxides. Also, nitrates and nitrogen-containing organic matter break down to nitrogen oxides.

Galena, cornish stone, crude feldspars, low grade fire clays, fluorspar, gypsum, lepidolite and cryolite can release toxic gases and fumes during glaze firings. Carbonates, chlorides, and fluorides are broken down to releasing carbon dioxide, chlorine, and fluorine gases.

At or above stoneware firing temperature, lead, antimony, cadmium, selenium and precious metals vaporize and the metal fumes can either escape from the kiln, or settle inside the kiln or on ceramic ware in the kiln. Nitrogen oxides and ozone can be generated from oxygen and nitrogen in air.

Hazards

- Chlorine, fluorine, sulfur dioxide, nitrogen dioxide, and ozone are highly toxic by inhalation. Bisque firings of high-sulfur clay have caused the production of great amounts of choking sulfur dioxide. Other large acute exposures to gases are not common. Inhalation of large amounts of these gases can result in severe acute or chronic lung problems. Long-term inhalation of low levels of these gases can cause chronic bronchitis and emphysema. Fluorine gas can also cause bone and teeth problems.
- Many metal fumes generated at high temperatures are highly toxic by inhalation. Since lead vaporizes at a relatively low temperature, it is especially hazardous.
- Carbon monoxide from fuel-fired kilns or the combustion of organic matter in clays is highly toxic by inhalation and can cause oxygen starvation. One symptom of carbon monoxide poisoning is an intense frontal headache, unrelievable by analgesics.
- Hot kilns produce infrared radiation, which is hazardous to the eyes. There have been reports of cataracts, from years of looking inside the hot kilns.
- Heat generated by the kiln can cause thermal burns. The Edward Orton Jr. Ceramic Foundation reported that when a kiln was operated at 2370°F, the surface temperature, was at and above 595°F, and the temperature one foot away from the peephole was 156°F.
- Heat produced by even small electric kilns can cause fires in the presence of combustible materials or flammable liquids.
- If an electric kiln fails to shut off, the heating elements melt which can cause fires. Gas kilns also generate a lot of heat, and room temperatures often exceed 100°F.

Precautions

- Infrared goggles approved by the **American National Standards Institute** (ANSI) or hand-held welding shields should be worn when looking into the operating kiln. Shade number from 1.7 to 3.0 is recommended, but a darker shade may be required if spots appear in front of one's eyes after looking away from the kiln.
- Do not use lead compounds at stoneware temperatures since the lead will vaporize.
- Lumber, paper, solvents, or other combustible and flammable materials should not be stored in kiln areas.
- Always check that the kiln has shut off.
- If gas leaks are suspected (e.g. gas odor): shut off gas at the source; shut off power to the kiln room at the circuit breaker; and call the gas company. Test for leaks with nonfat, soapy water or use approved leak-detection solutions.

Special Processes

While most glaze firings refer to firing a glaze-coated pot in the kiln, special processes sometimes are used. Salt glazing and raku firing are two examples.

Salt Glazing

This process involves throwing wet salt (sodium chloride) into the heated kiln while the bisque ware is being fired. Wet salt at high temperatures decomposed to sodium and chlorine. The sodium reacts with the bisque ware to form a glaze. Large amounts of hydrogen chloride gas and possibly chlorine are also formed.

Sodium carbonate (washing soda) can also be used. Carbon dioxide is generated instead of hydrogen chloride.

Hazards

- Hydrogen chloride gas is highly toxic by inhalation. Health effects are both similar and more irritating compared with most other kiln gases. Often, local environmental protection laws ban salt kilns.
- Hydrogen chloride and water vapor form hydrochloric acid, which can corrode metal fittings in the area.

Precautions

- Substitute safer sodium carbonate for sodium chloride.
- Sodium chloride salt glazing should only be done outdoors. Kilns should be equipped with canopy hoods and chimney stacks that are tall enough to disperse the hydrogen chloride safely.
- All gas piping, and metal fixtures should be routinely checked for corrosion.

Raku Firing

Raku involves first firing ware at a low temperature in a regular gas kiln, and then removing the still hot pieces and placing in them in sawdust, leaves or other organic materials for a reduction phase.

Hazards

- **See above** for the hazards and safety precautions used with gas kilns.
- The reduction step produces large amounts of smoke and carbon monoxide.
- Treated wood or other materials can yield an exposure to highly toxic preservatives or pesticides, such as arsenic and chromium compounds.

Precautions

- Raku should only be done outdoors because of smoke. Be careful to not locate raku near air intakes or open windows of buildings.
- Do not use materials that have been treated with preservatives or pesticides for the reduction phase.

Leaching Of Finished Ceramic Ware

Lead Leeching

There is a real concern about lead leaching into food and drink from pottery fired with lead glazes. The **U.S. Food and Drug Administration** (FDA) has regulated how much lead can leach from food ware into food and drink. Acidic liquids are of particular concern. Similarly, continual microwave reheating, (e.g. a coffee mug at work) can yield greater leaching of lead glazes. Many cases of lead

San Diego County Air Pollution Control District

ADMINISTRATIVE ITEM:

B. Approval of Statement of Proceedings/Minutes for May 23, 2024

ACTION:
ON MOTION of Vice Chair Spencer, seconded by Chair Schlick, the San Diego County Air Pollution Control District Hearing Board approved the Statement of Proceedings for the meeting of May 23, 2024, as amended.

AYES: Engleman, Schlick, Spencer
ABSENT: Zupo

MIA RUFFIER
Clerk of the San Diego County Air Pollution Control District Hearing Board

San Diego County Air Pollution Control District

COUNTY OF SAN DIEGO
AIR POLLUTION CONTROL DISTRICT HEARING BOARD
BOARD ORDER

4540 SAN DIEGO COUNTY AIR POLLUTION CONTROL DISTRICT, COUNTY OF SAN DIEGO abatement order against respondent **ESCONDIDO BIOENERGY FACILITY, LLC** located at 1521 S. Hale Avenue, Escondido, CA 92029.

Notice of time and place of hearing was given as required by law.

ACTION:
ON MOTION Chair Schlick, seconded by Vice Chair Spencer, the Air Pollution Control District Hearing Board accepted Respondent's presentation as Exhibit A.

AYES: Engleman, Schlick, Spencer
ABSENT: Zupo

ACTION:
ON MOTION Member Engleman, seconded by Vice Chair Spencer, the San Diego County Air Pollution Control District Hearing Board approved the Abatement Order between the San Diego County Air Pollution Control District, Petitioner, and Escondido Bioenergy Facility, LLC, Respondent.

AYES: Engleman, Schlick, Spencer
ABSENT: Zupo

MIA RUFFIER
Clerk of the San Diego County Air Pollution Control District Hearing Board

SAN DIEGO COUNTY AIR POLLUTION CONTROL DISTRICT
PAULA FORBIS, Air Pollution Control Officer
NICOLE SHERIDAN, Civil Actions Investigator
10124 Old Grove Road
San Diego, California 92131
Telephone: 858-586-2650

Petitioner Air Pollution Control District

BEFORE THE SAN DIEGO COUNTY

AIR POLLUTION CONTROL DISTRICT HEARING BOARD

SAN DIEGO COUNTY AIR POLLUTION CONTROL DISTRICT Petitioner, ESCONDIDO BIOENERGY FACILITY, LLC. Respondent.	No. 4540 ABATEMENT ORDER PURSUANT TO HEALTH AND SAFETY CODE § 42451(a) Hearing Date: June 20, 2024 Time: 9:00 a.m. Place: 10124 Old Grove Road San Diego, CA 92131

The petition of the San Diego County Air Pollution Control District (hereinafter, "District") for an Abatement Order came for hearing by this Board on June 20, 2024, pursuant to the petition filed on June 3rd, 2024. The District appeared and was represented by William Jacques, Chief of Compliance; Mary Mahoney, Program Coordinator; Nathan Gutzwiller, Senior Air Pollution Chemist; and Nicole Sheridan, Civil Actions Investigator. The Respondent was represented by John Hutson, Director of Plant Operations for North America; Neil O'Malley, Plant Operations Engineering Manager for North America. The public was given the opportunity to testify. The Board having heard sworn testimony and received exhibits in evidence on behalf of the District, and the matter having been submitted for decision, the Hearing Board makes the following findings and decision:

FINDINGS OF FACT

1. Petitioner is an air pollution control district duly authorized and existing under the laws of the State of California and is the local agency responsible for air pollution control in San Diego County.

2. Respondent does business within the jurisdiction of the District and operates a prime 1,105 brake horsepower cogeneration engine fueled by digester gas at 1521 S Hale Avenue, Escondido, CA 92029.
3. Respondent's Director of Plant Operations, John Hutson was served with a copy of the Petition for an Abatement Order and the Proposed Abatement Order by email and USPS Certified Mail on June 3, 2024
4. Notice of time and place of hearing was given as required by law.
5. The District issued Notices of Violation No. APCD2023-NOV-000877 on November 22, 2023, and APCD2024-NOV-000339 on April 25, 2024, to the Respondent alleging violations of District Rule 21, Permit Condition No. 1 for exceeding the emissions for oxides of nitrogen.

CONCLUSIONS

1. Respondent continues to operate the prime cogeneration engine for twenty-four hours a day while producing excess emissions of oxides of nitrogen, in violation of District Rule 21, Permit Condition No. 1, as alleged in Notices of Violation Nos. APCD2023-NOV-000877 and APCD2024-NOV-000339.
2. The issuance of this Abatement Order will not constitute a taking of property without due process of law.
3. To prevent future violations of District rules, it is necessary that Respondent's operations be enjoined as set forth in the Abatement Order.

ORDER

NOW, THEREFORE, IT IS HEREBY ORDERED THAT:

1. Respondent Escondido Bioenergy Facility, LLC and its officers, agents, employees, spouses, partners, heirs, assignees, lessees, transferees, and successors are hereby **ORDERED** to comply with the following restrictions and conditions of this order:
    a. On or before June 27, 2024, by 5 p.m., Respondent shall submit to the District a Compliance Plan containing intended troubleshooting, repairs, and parts needed to correct the excess emissions of oxides of nitrogen.
    b. When each ordered component for the prime cogeneration engine is received, Respondent shall notify the District within one business day, by 5 p.m.

c. When the installation of each component is completed, Respondent shall notify the District within one business day, by 5 p.m.

d. When a source test has been scheduled, Respondent shall notify the District within one business day, by 5 p.m.

e. Respondent shall pass a source test for NOx emissions on or before October 1, 2024.

f. Respondent shall submit a timely petition to the Hearing Board to modify this Order if the Respondent determines it will be unable to meet any milestones or increments of progress herein or may otherwise be unable to comply with the terms of this Order within five (5) business days of any such determination.

g. Respondent shall notify the District via email by emailing nicole.sheridan@sdapcd.org and copying apcdcomp@sdapcd.org for all notifications requested herein.

2. This Abatement Order does not act as a variance, and Respondent is subject to all rules and regulations of the District and with all applicable provisions of California and federal law.

Violation of any requirement of this Order is subject to enforcement of California Health and Safety Code Sections 42400 through 42410 and 42453, including possible judicial action for an injunction and/or penalties and, in appropriate cases, criminal prosecution.

ACTION:

ON MOTION of Member Engleman, seconded by Chair Schlick, the San Diego County Air Pollution Control District Hearing Board closed the June 20, 2024 hearing and granted the Abatement Order against Escondido Bioenergy Facility, LLC.

AYES: Engleman, Schlick, Spencer
ABSENT: Zupo

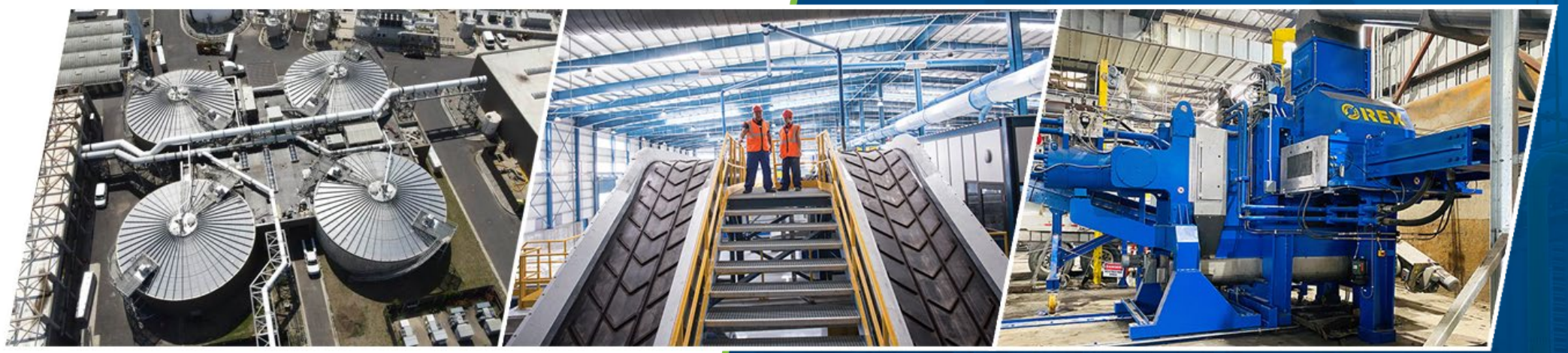
It is so ordered.

By: Alison Schlick, Chair of the SDAPCD Hearing Board

San Diego County Air Pollution Control District

06.20.24 Petition 4540
APCD HB
Exhibit A

Escondido Bioenergy Facility



Anaergia

Fueling a Sustainable World

Agenda

- Escondido Bioenergy Facility Description
- Escondido Team Members Supporting Issue
- Timeline Associated with Compliance Effort
- Summary

Anaergia

Escondido Bioenergy Facility

Escondido Bioenergy Facility produces biogas from the anaerobic digestion of organic food waste for both electrical and thermal energy production. Anaerobic digestion is the degradation of organic material by microorganisms under anaerobic conditions in a sealed space. The anaerobic digestion process is an advanced organics recycling method that completely isolates the major decomposition processes from air while producing renewable energy in the form of biogas. The resulting digestate is stable and can be readily utilized as an input to agriculture, landscaping, or gardening. Both private and public sources of organic food waste serve as feedstock to the facility, reducing landfill waste while generating valuable energy. Digester gas comprised of approximately 50% to 70% methane is combusted in combined heat and power (CHP) lean burn, spark ignition reciprocating internal combustion engines referred to as CHP. Emissions from the engine are controlled with selective catalytic reduction (SCR) and an oxidation catalyst.

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Escondido Team Members

John Hutson – Anaergia Director of Plant Operations for North America

Neil O'Malley – Anaergia Plant Operations Engineering Manager for North America

Alfonso DeLuna – Anaergia Site Lead Operator

2G – Vendor responsible for engine maintenance and tuning.

Johnson Matthey (JM) – Vendor who supplied and maintains the emission control system, including the OEM of the catalyst.

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October Events

October 24, 2023

Source test failure – SDAPCD came on site and source test 800kW unit. Unit exceeded emissions limit on Method 100 NOx g/bhp-hr limit if 0.15. Emissions recorded for all 3 test runs were 0.21 g/bhp-hr.

October 30, 2023

Johnson Matthey (JM) was onsite to conduct ammonia injection tuning with a rented Testo. 2G (engine service vendor) tech is not available.

October 31, 2023

SDAPCD onsite to conduct Source Test, due to failure on October 24, 2024. After the preparation of retest were made by APCD. APCD supervisor in charge of testing did an initial testing sample of emissions. His finding determined that the unit was not going to fall within permit limits. After a discussion with Escondido Bioenergy site lead's supervisor it was decided to cancel the retest and reschedule to a later date.

November Events

November 1, 2023

2G tech onsite with a calibrated ECOM to check and possibly have unit retuned remotely with assistance from East coast. JM tech had issues with Testo emissions test set. 2G tech onsite with ECOM and tested Engine outlet/SCR inlet NOx. 2G tech said engine was operating per manufacturer specifications.

November 2, 2023

Setup meeting for the following week as JM was not available to meet tomorrow.

November 6

Meeting with JM and 2G to go over recent emissions issue with 2G unit (800kW genset)

NOTE: a plan was developed to get engine retuned to a leaner gas mixture, then retuning of the ammonia injection system would be needed to reduce NOx.

November 9, 2023

JM and 2G tech on site to retune engine to a leaner gas mixture, and retune ammonia injections system

2G tech sent me a text message showing engine was tuned at ~ 380mg/m3

November 10, 2023

JM service engineer retuned ammonia injection system, 2G tech did minor tuning on engine.
Service engineer said he feels confident our testing on Monday, November 13, would go well.

November 9-10, 2023
Retuned engine leaner ~ 380 MGM ~ 150 PPM coming out of the engine output/SCR inlet NOx. Ammonia injection system was retuned.

NOTE: A significant outlet NOx drop was noticed and we confidently believed the 2G unit would pass the source test

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November Events cont'd

November 13

SDAPCD onsite to conduct Source Test, due to failure on October 24, 2024. After the preparation of retest were made by APCD. APCD supervisor in charge of testing did an initial testing sample of emissions. His finding determined that the unit was not going to fall within permit limits. After a discussion with Escondido Bioenergy site lead's supervisor it was decided to cancel the retest and reschedule to a later date.

SDAPCD, at my request, sampled across the aft side of the catalyst reactor in 3 places vertically and horizontally and found high stratification on the edges of catalyst reactor indicating the possibility of leaks occurring around the catalyst blocks/panels.

November 16

Meeting with JM held spoke about removing a sample of catalyst panel to get tested through the JM laboratory. Also to clean catalyst and inspect and clean urea injection nozzle, in case it was clogged, and to inspect to see if there was a static mixer in the ducting, upstream of the catalyst reactor.

Also a plan was developed to get engine retuned to an even leaner gas mixture and possibly change the Biogas to Natural gas % mixture, then retuning of the ammonia injection system would be needed to reduce NOx.

November 17

Attempted to schedule contractors, JM and 2G to retune engine and injection system. Tentatively rescheduled SDAPCD source retest for November 29th.

November 20

JM on site removed catalyst panel sample, cleaned catalyst panels installed, checked and cleaned urea injection nozzle and checked to ensure there was a static mixer installed upstream of catalyst reactor. There was a static mixer installed upstream of catalyst reactor. No urea injection tuning could be done because 2G tech was not available to retune engine first.

NOTE: due to the holidays and availability of JM and 2G tech to retune engine and ammonia injection system, SDAPCD Source re-Test was rescheduled till December 12th.

December & January Events

December 4

Due to the holidays and availability of JM and 2G tech to Source re-Test was rescheduled till next month, after first week of January.

January 8-12, 2024

10th, 2G tech came, changed the spark plugs, restarted unit and cylinder B8 showed ~50 C higher than other cylinders. After several valve adjustments the engine temperature was brought within normal ranges. Need to retuned engine to a leaner gas mixture tomorrow.

11th, Johnson Matthey came, pulled SCR catalyst panels, cleaned panels due to a fine power buildup on them. They will take fine powder to get analyzed. 2G tech retuned engine to an even leaner ~ 250 mgm (lower gas to air mixture).

12th, 2G tech came to support ammonia injection tuning. Johnson Matthey came to retune ammonia injection system from the stack exhaust, and Trillium tech came to verify emissions.

NOTE: The thought was leaning out the gas mixture would reduce overall NOx out of the engine reducing NOx hitting the catalyst. Then retuning the ammonia injection system coupled with cleaned catalyst panels would further reduce the NOx emissions coming out of the exhaust.

What we found that when we reduced the NOx emissions coming out of the engine exhaust/going to the SCR inlet, less ammonia was needed to react with the panels to scrub the NOx. There came a point where more ammonia added would no longer scrub the NOx.

Texted SAPCD and canceled the scheduled Source retest on January 16, 2024.

December & January cont'd

January 18, 2024

Meeting was setup to discuss further ideas to fix NOx emissions issue on 2G unit.

January 29

Microsoft teams meeting with Anaergia engineers, JM engineers, and 2G-Energy Inc. to discuss 800kW high Nox at Escondido, and determine path forward.

Still awaiting catalyst panel testing results from JM laboratory. Items discussed were issues with possible "poisoning" of catalyst panels, due to possibly digester gas not within standards, possibly needing to change out gas conditioner media, possibility of engine consuming too much oil causing catalyst panel poisoning, engine exhaust gases leaking by catalyst reactor shown by quick stratification test done by SAPCD on November 13, 2023. Also discussion on a redesign of catalyst exhaust ducting to have a 7' duct extension added to have a more direct exhaust gas path flow to catalyst reactor/catalyst panels.

March Events

March 14

Microsoft teams meeting Anaergia engineers, JM engineers, and 2G-Energy Inc. to discuss NOx catalyst panel sample testing results and solutions to 800kW high NOx at Escondido.

Items discussed were results of catalyst panel sample testing, issues with possible “contamination” of catalyst panels due to possibly digester gas not within standards, possibly needing to change out gas conditioner media, possibility of engine consuming too much oil causing catalyst panel “contamination”.

2G tech responded that if oil consumption was significant then there would be issues with cylinder temperatures and also they would not be able to achieve engine NOx specification requirements of 500 mg/m3 out of engine exhaust, currently running lean of ~250 mg/m3, so oil consumption is a non issue.

Will get Gas Conditioner skid manufacturer, Unison, to look at the gas analysis results to see if there’s an issue with the media.

March 15

JM and 2G techs on site to perform catalyst cleaning and then testing, running only on Natural Gas to see if running only on Natural Gas would significantly improve NOx emissions. The same efficiency percent reduction was noticed on natural gas as on biogas indicating that biogas is not impacting the reduction rate of NOx through the catalyst. A sample of powder substance on catalyst was taken for testing in an attempt to determine where it is coming from.

March 20

Powder substance testing results received and a JM stated they would take pictures to see how potential modifications could be proposed by adding extra exhaust ducting with a static mixer to improve the exhaust flow and urea mix distribution in the catalyst

March 27

JM on site to clean catalyst and test efficiency of middle catalyst layer and to take pictures of exhaust ducting and catalyst to provide a possible solution/proposal.

April & May Events

April 9

After sending request to Gas Conditioner skid manufacturer to review gas sampling analysis, received response from Unison engineer, said it looks like the media in the Gas Conditioner skid is still viable.

April 11

Ordered catalyst from Johnson Matthey, JM, awaiting an estimated time of delivery.

May 1

Neil O'Malley on site to take pictures to work on plan to do exhaust duct modifications.

May 6

Received exhaust duct modifications plan from Neil. Contractors being scheduled to do a job walk.

May 14

Two contractors, ICS and RBI, came on site to do job walk for exhaust duct modification.

May 16

Another contractor, R&S, came on site to do job walk for exhaust duct modification.

Week commencing 20th May

A contractor was selected. Procurement, and site working arrangements where all expedited throughout this week.

Week commencing 28th May

Exhaust duct modifications where started, this work took 7 days with the engine offline. Modifications included increasing insulation, moving the urea injection/catalyst housing/static mixer so that there is the most optimal straight length of duct prior to the catalyst housing to allow for the best urea mixing.

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June Events

June 4th

Initiated calls again with Johnson Matthey the original vendor of the catalyst housing to discuss a new housing should the results of the duct modifications not show the issue to be resolved.

June 5th

Pre-testing (pre-source testing) took place to see if any of the modifications resolved this issue. The results showed the unit was still out of specification. Whilst testing we also completed a traverse of the duct with the testing equipment in order to profile the NOx to better understand the problem for future discussion.

June 7th

Results shared with Johnson Matthey, a future call planned once there engineers have had time to digest all the information and propose a new housing/catalyst solution.

Summary

Escondido Bioenergy Facility has worked with our vendors over the past few months working to permanently identify and address the issue with NOx emissions with our 800kW unit. Anaergia and Escondido Bioenergy Facility are fully committed to working with SDAPCD staff and ensure the issue with the 800kW is resolved.

We appreciate the hearing boards consideration to this situation and ask that they give us an opportunity to continue working with SDAPCD staff to bring this matter to a full and complete resolution.

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San Diego County Air Pollution Control District

06.20.24 Petition 4540
APCD HB
Speaker Slips

Air Pollution Control District Hearing Board

DATE 20 June 24 Petition Number 4540

SUBJECT Abatement Order

REQUEST TO SPEAK IN FAVOR

PLEASE PRINT NAME LEGIBLY

Name OSCAR (First) JIMOF (Last)

Organization Name, if any Community Volunteer

1. Monitored, evaluated on air Pollution - emissions..
2. His time not only to reduce emission but stop...

PLEASE SEE GUIDE FOR SPEAKERS ON REVERSE

(FOR PUBLIC SPEAKERS)

03/22/2023

Spoke