Maricopa County
Air Quality Department

NON-TITLE V
TECHNICAL SUPPORT DOCUMENT

PERMIT NUMBER:	140062	**App. ID(s):**	410195
BUSINESS NAME:	Hickman's Egg Ranch, Inc.	**Revision(s):**	0.0.1.0
SOURCE TYPE:	Poultry Egg Production	**Revision Type(s):**	Minor modification
PERMIT ENGINEER:	LiSa Kon/Todd Martin	**Date Prepared:**	05/16/2017

BACT: No **MACT:** Yes **NSPS:** Yes **SYNTH MINOR:** No **AIRS:** No
DUST PLAN REQUIRED: No **DUST PLAN RECEIVED:** N/A
O&M PLAN REQUIRED: No **O&M PLAN RECEIVED:** No
PORTABLE SOURCE: No **SITE VISIT: 11/20/2015**

PROCESS DESCRIPTION:
This facility houses chickens for the production of eggs for human consumption. The egg producing and processing establishment is located on an agricultural farm land. Each of the fourteen barns at the site is ventilated by a system of fans. Each barn is equipped with a diesel fuel emergency generator engine. In the event of line power failure, the emergency generator engines will provide power to the fans. Pages 4 and 5 of this document contain pictures of the establishment. Diagram A in page 3 shows the site diagram.

The facility is regulated for fuel combustion emissions from the emergency generator engines and boilers. Fuel combustion emissions consist of carbon monoxide (CO), nitrogen oxides (NOx), sulfur dioxide (SOx), volatile organic compounds (VOC), and particulate matter (PM, including PM_{10}).

PERMIT HISTORY:

Date Received	Revision Number	Description
11/16/2015	1.0.1.0	MCAQD received permit minor modification application. See Purpose for Application.
11/17/2014	0.0.0.0	MCAQD issued new permit.

PURPOSE FOR APPLICATION:
The minor modification is to notify MCAQD that the Permittee will be adding:

1. 8 units of diesel fuel emergency generator engines to the existing 12 units. Each of the new engines is rated at 464 horsepower (h.p.), and certified to meet EPA Certified Tier 3 Emission Compliance. There will be a total of 20 diesel fuel emergency generator engines at the facility. The manufacturer's data sheets on the new engines were included together with the permit minor modification application. The engines will be installed at:
   -G-48 Pullet House L
   -G-49 Pullet House M
   -G-50 Lay House 14
   -G-51 Water Tank #2 Booster Pump
   -G-52 Lay House 12
   -G-53 Lay House 13

2. 2 units of propane gas powered boilers at the egg washing processing plant. Each of the Lochinvar Copper Fin II Model CHL0992 boiler is rated at heat input rating of 990,000 Btu/hr. (note: The modification was revised to include the boilers on 12/3/2015; the original application that was received on 11/16/2015 did not include the boilers).
   There are two aboveground propane tanks on site. The holding capacity of each is 1,000 gallons. Fuel combustion

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by-product emissions from the boilers have been revised to reflect the updated fuel type; from natural gas to propane. The propane tanks are exclusively for the storage of liquefied gases in unvented pressure vessels, except for emergency pressure-relief valves. As such, emissions from the tanks are considered insignificant per Rule 100 §200.63 g.(5).

The facility is not eligible to operate under a General Permit for Stationary Emergency Internal Combustion Engines (ICE) because the aggregate power rating of all the stationary ICE on the site exceeded 2,500 h .p. In order to be eligible, the maximum aggregate power rating of all stationary ICE on the site must be 2,500 horsepower or less.

A. APPLICABLE COUNTY REGULATIONS:

Rule 100: General Provisions and Definitions
Rule 200: Permit Requirements
Rule 220: Non-Title V Permit Provisions
Rule 280: Fees: Table C: Emergency Internal Combustion Engines
Rule 300: Visible Emissions
Rule 320: Odor and Gaseous Air Contaminants
Rule 324: Stationary Internal Combustion (IC) Engines

The Permittee is not subject to

- Rule 310 - Fugitive Dust from Dust Generating Operations. Rule 310 Section 103.1 exempts farm cultural practices.
  Per A.R.S. 49-457 the facility is subject to Agricultural Best Management Practices. You can find more information regarding this program at:
- http://www.azdeq.gov/environ/air/plan/download/webguide.pdf

- Rule 323 - Fuel Burning Equipment from Industrial/Commercial/Institutional (ICI) Sources because this rule only applies to unit/s that has a maximum design rated heat input capacity from fuels combusted in the generating unit of greater than 10 million (MM) Btu/hr (2.9 Megawatts (MW)).

There is a 10,000 gallon capacity a boveground diesel storage tank for diesel . The storage tank wil l be removed upon completion of construction at the facility.
Per MCAQD Rule Appendix D - List Of Insignificant Activities, Storage and Distribution, any emissions unit, operation, or activity that handles or stores no more than 12,000 gallons of a liquid with a vapor pressure less than 1.5 pounds per square inch (psia) is considered insignificant

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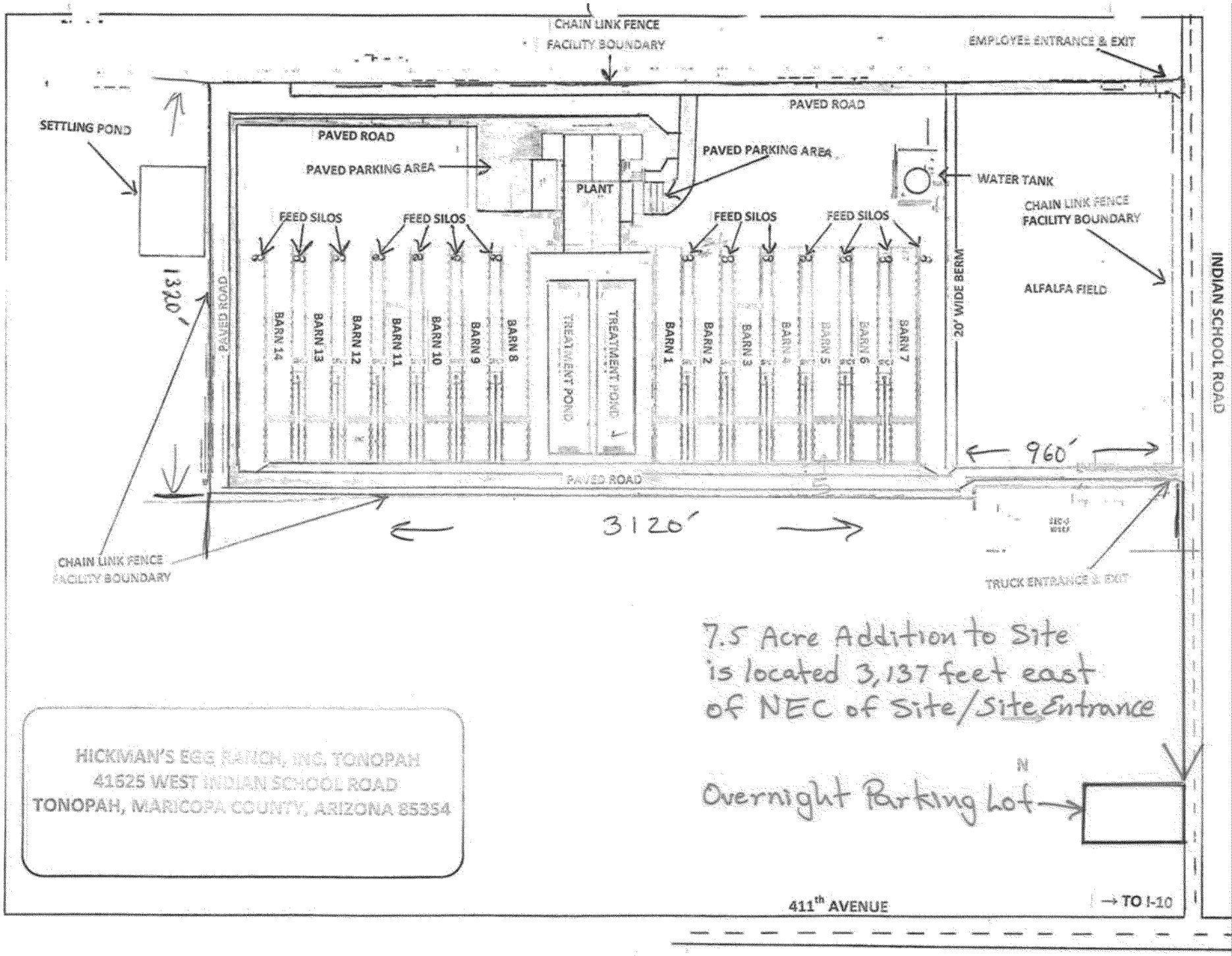
Diagram A: Site layout



These pictures were submitted together with the new permit application.

Figure 1: Two of the standby engines at one of the lay houses at the facility.

Silos are located between the barns

Figure 2: Silos are located in between the barns

Figure 3: One of the two treatment ponds. Structure to the left of the pond is Barn #1.

Figure 4: Another view of a barn.

Emergency generator engine

Figure 5: Barn structure.

B. FEDERAL REGULATIONS:

1) The *Kohler*, 1528 h.p. emergency generator engine is subject to 40 CFR Part 63, Subpart ZZZZ. This unit was manufactured in the year, 2004.
Any stationary, emergency reciprocating internal combustion (IC) emergency engines which includes (Diesel fueled) compression ignition (CI) emergency engines and (Propane fueled) spark ignition (SI) emergency engines constructed or reconstructed prior to 2 006 will be subjected to 40 CFR Part 63, Subpart ZZZZ —National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating IC Emergency Engines.
If the Permittee modifies or reconstructs the engine stationary compression ignition internal combustion engine after July 11, 2005, that engine shall comply with all applicable requirements of 40 CFR 60 Subpart IIII. [40 CFR §60.4200(a)(3)]

2) The following 19 units of emergency generator engines are subject to NSPS 40 CFR Part 60, Subpart IIII.

Engine Make	Model	No. of units	Model Year	Maximum Power	Emission Standard
Cummins	QSL9-G7-NR3	18	2014	464 HP	Tier 3
Cummins	QSL9-G2-NR3	1	2014	364 HP	Tier 3

3) Non-Applicable Federal Regulations
The chicken feed (grain) storage silos are not subject 40 CFR 60 Subart DD (Standards of Performance for Grain Elevators). Grain storage at the facility does not meet the definition of grain terminal elevator or grain storage elevator provided in 40 CFR 60.301. Grain terminal elevators do not include those located at livestock feedlots.

4) The 2 units of fuel burning (propane) boilers are:
- *Not subject* to National Emission Standards for Hazardous Air Pollutants (NESHAP) for Industrial, Commercial, and Institutional Boilers Area Sources (40 CFR Part 63, Subpart JJJJJJ) per 63.11195. This section itemizes the type of boilers that are not subject to the A rea Source Boilers NESHAP. It states: *Gas-fired boiler.* If your boiler burns gaseous fuels (e.g. propane, process gas, landfill gas, coal derived gas, refinery gas, hydrogen, or biogas) not combined with any solid fuels, or if your unit burns liquid fuel only during periods of gas curtailment, gas supply emergencies, or periodic testing it is a

gas-fired boiler. Periodic testing of liquid fuel shall not exceed a combined total of 48 hours during any calendar year in order to maintain your status as a gas -fired boiler (see §63.11237 Definitions and §63.11195(e)).

- *Not subject* to the NSPS Subpart Dc. Subpart Dc only applies to commercial, industrial, and small boilers (steam generating units) that commenced construction or were modified after June 9, 1989 and have a rated heat input greater than 10 million Btu/hr (MMBtu/hr) and less than 100 MMBtu/hr.

C. FUGITIVE EMISSIONS AND TITLE V APPLICABILITY

A Major Source under Section 302 of the Clean Air Act (CAA) is defined as:

- A source that directly emits or has the potential to emit, 100 tpy or more of any air pollutant including any major source of fugitive emissions of any such pollutant. The fugitive emissions of a stationary source shall not be considered in determining whether it is a major stationary sour ce for the purposes of Section 302(j) of the Act, unless the source belongs to a section 302(j) category of the Act.

Egg laying facilities do not belong to a section 302(j) category of the Act. Therefore fugitive emissions are not included in determining whether the facility is subject to Title V permitting and New Source Review.

The EPA defines "fugitive emissions" in the regulations promulgated under title V as " *those emissions which could not reasonably pass through a stack, chimney, vent, or other functionally-equivalent opening*" (see title 40 of the Code of Federal Regulations, sections 70.2 and 71.2).

Non-Fugitive Emissions:
Emissions from boilers and engines pass through a stack and are therefore non-fugitive.

Fugitive Emissions:
Manure piles, wastewater surface impoundments ponds and all other activities that take place outdoors and "which could not reasonably pass through a stack, chimney, vent, or other functionally-equivalent opening" are considered fugitive emissions.

Discussion:
VOC and PM10 emissions are generated within the henhouse from the chickens, manure and manure handling operations. Each hen house has two sections, the area that houses the hens on the west end and the area where manure is collected on the east end. The two sections are separated by an internal wall. The wall has approximately 40 – 50 thermostatically controlled fans that move up to 30,000 cubic feet per minute from each fan. The fans serve two primary functions:

1. They induce air flow in the hen section for purposes of ventilating and cooling the hens.
2. They aid in manure drying and pest management in the manure area.

Figure 6: Manure collection area showing internal wall and bank of fans.

The purpose of this discussion is to determine whether emissions from the henhouse are considered "fugitive" or "non-fugitive," and if non-fugitive, whether emissions exceed either 100 tons/year, the trigger for Title V operating permit status, or a major preconstruction review threshold under MCAQD Rule 240.

An EPA Memo dated 2/10/99 titled "Interpretation of the Definition of Fugitive Emissions in Parts 70 and 71" provides guidance in the determination of whether emissions should be considered fugitive. MCAQD will address the question in light of this guidance, which is attac hed below (sometimes referred to as the "Curran Memo").

Item #1: According to the memo (and earlier guidance released in 1987 and again in 1994), EPA states "*emissions which are actually collected are not fugitive emissions*".

At Hickman Family Farms, the fans exhaust into the area where manure is collected. Emissions are not currently collected.

EPA goes on to say:

> *Where emissions are not actually collected at a particular site, the question of whether the emissions are fugitive or non -fugitive should be based on a factual, case -by-case determination made by the permitting authority.*

Item #2: EPA also believes that "*manufacturers subject to national standards and State implementation plan (SIP) requirements (e.g, reasonably achievable control technology, best available control technology, or lowest achievable emissions rate) requiring collection* " should be considered "non -fugitive" since collection is required by the standard.

There are no national, state or county standards that apply to emissions from henhouses.
The EPA RACT/BACT/LAER Clearinghouse contains no RACT/BACT/LAER entries for: henhouse, hen or egg.

https://cfpub.epa.gov/rblc/index.cfm?action=Search.BasicSearch

Item #3: According to the memo "*reasonableness should be construed broadly. The existence of collection technology in use by other sources in a source category creates a presumption that collection is reasonable. Furthermore, in certain circumstances, the collection of emissions from a specific pollutant emitting activity can create a presumption that collection is reasonable for a similar pollutant-emitting activity, even if that activity is located within a different source category.*"

Does collection technology exist at other egg laying facilities around the country ? MCAQD is not aware of any other laying operation at which the emissions are actually captured. It should be noted that many of facilities around the country include fans located on the external walls of buildings, such that the air pollutants are passing through the fans.

Is there a "similar pollutant -emitting activity" at a "different source category " in which emissions are collected? In response to this question, EPA Region 9 supplied the attached letter dated April 16, 1996 from EPA Region 5 to Paul Dubenetzky of the Indiana Department of Environmental Management (IDEM) regarding a Seagram whiskey storage facility. The Seagram operation consists of ten double warehouses (each of approximately 85,630 sq. ft. in area). The facility stores beverages in barrels and is a source of ethanol emissions which are released into the atmosphere through screen -covered vents along the bottom of the warehouse walls.

With regards to this facility EPA Region 5 concluded:

> *The facility relies on natural ventilation and does not use fans to force air in and out of the warehouse. It is the position of the United States Environmental Protection Agency (USEPA) , based on the information you provided, that these screens should be considered "other functionally equivalent openings" under the above -mentioned definition and, therefore, the emissions exiting the storage area would not be classified as fugitive emissions for Title V purposes.*

Although EPA and IDEM determined warehouse emissions to be non -fugitive, Seagram challenged the decision and the case went before the Indiana Office of Environmental Adjudication. The court overturned IDEM's and EPA's finding stating:

> *This Court concludes that whether the emissions can be reasonably collected is essential to the determination of whether the emissions are fugitive. This Court finds and concludes that the IDEM's interpretation is inconsistent with the regulation and with U.S. EPA's national policy.*

http://www.state.in.us/oea/decisions/2004oea58.htm

Although the court ruled against EPA in this matter and determined VOC emissions to be fugitive , it is worth examining the similarities and differences of the Hickman's henhouses to the Seagram warehouses to determine whether collection of emissions is "reasonable."

Similarities:

- Each emission source can roughly be construed as a warehouse with multiple buildings.
- Each has openings from which emissions are released to the atmosphere.

Differences:

- Seagram relies on natural ventilation and does not use fans to force air in and out of the warehouse.
- The henhouses at Hickman Family Farms are ventilated using 40 – 50 thermostatically controlled fans per henhouse. According to the source , the fans result in a total combined air flow of more than 1.5 million cubic feet per minute per henhouse.

In addition to the fact that the court has ruled that emissions from the Seagram warehouse are fugitive, the emissions from the Hickman Family Farm henhouses differ in one key respect, the volume of air that would have to be collected and treated is exponentially greater. Because the volume is greater, equipment serving

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to collect and treat henhouse emissions would need to be sized to accommodate these considerably higher air flows.

Item #4: In cases such as that described abovewhere the agency is evaluating a"similar pollutant-emitting activity", the Curran memo provides further guidance as to the evaluation of"reasonableness":

> "*When a source does not actually collect its emiss ions, but there is a presumption that collection would be reasonable, a permitting authority could consider costs in determining whether this presumption is correct. However, when analyzing whether collection is reasonable for a particular source, the permitting authority should not focus solely on cost factors, nor should cost factors be given any more weight than other factors.*"

Although collection of emissions from the henhouses are not presumed to be reasonable per the Indiana court's ruling in the Seagram case, Hickman Family Farms was asked about the feasibility of collecting particulate emissions and responded as follows:

> *"A preliminary analysis of such a system shows the hood system would require exhaust fans sized for an air flow of more than 1.5million cubic feet per minute; even without an air pollution control device, the fan would require an electric motor of approximately 1500 hp output. A fabric filter baghouse to control emissions of particulate matter, assuming a gas -to-cloth ratio of 9 ft /min, would increase the pressure drop to approximately 10 inches of water and would require an increase in the fan motor size to more than 3000 hp. The baghouse would contain approximately 13,000 fabric filter bags; total cloth area would be more than 170 ,000 square feet; and the baghouse structure would be approximately 50 feet wide by 200 feet long and 25 feet high. The total capital cost of such a system, for each building, would be at least $13 million. As stated by the EPA, "we believe that when the o nly reason to collect or capture such emissions would be to control the emissions, and there is no technical or economically feasible means to control the emissions, then collecting the emissions is nonsensical, and thus, may not be reasonable." (72 Fed. Re. 63259, Nov. 13, 2007; 73 Fed. Reg. 77892, Dec. 18, 2008). In this case, the collection of such emissions would not be economically feasible."*

A similar analysis could be performed for the capture and control of VOC emissions from the henhouses . As a very rough estimate we can refer to the EPA Air Pollution Control Cost Manual (2002), which includes the following figure:

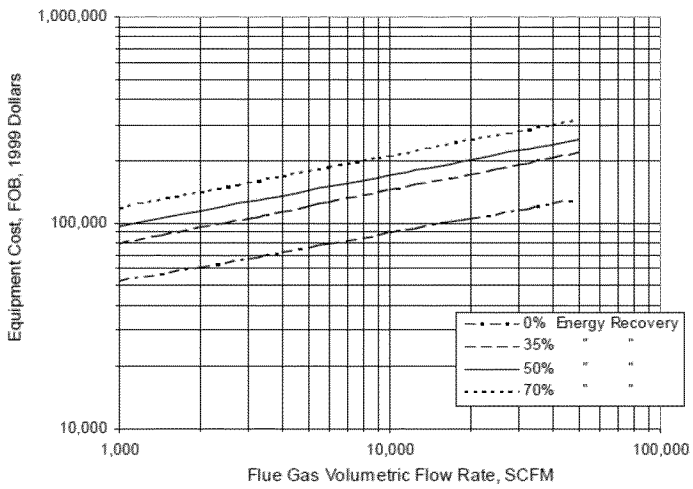

Figure 2.4: Equipment Costs of Thermal Incinerators, Recuperative

The capital cost of a recuperative thermal oxidizer (the least expensive of the VOC controls listed in the manual) is approximately $110,000 per 50,000 scfm of air treated. Thus theHickman Family Farms facility would require 30 oxidizers in order to treat 1.5 million scfm of air. The equipment cost would therefore be $3.3 million in 1998 dollars per henhouse.

Table 2.10 of the Cost Manual estimates annual operating costs at roughly $422,000 per unit for an annual total operating cost of $12.66 million per year.

Although this is a rough back-of-the-envelope cost estimate, it's clear that costs are quite high. It is the determination of MCAQD that such an expense is not economically feasible and that the reasonableness standard has not been met given the exponentially higher volumes of air that must be treated at the Hickman Family Farms site than would be necessary at the Seagram facility.

Add to this the fact that the VOC inlet concentration to such an oxidizer would be extremely low, resulting in low abatement efficiencies, and the fact that 30 thermal oxidizers would produce emissions themselves in the form of combustion byproducts. Given the emissions from fuel combustion, it is unclear whether there would be any emissions benefit from their use.

Although the Indiana court ruled that ethanol emissions from the Seagram warehouse were fugitive, MCAQD considered costs to determine whether collection is reasonable in light of the much higher flow rates and air volume produced by the henhouses. For both particulates and VOCs, costs were found to be prohibitively high.

Conclusion: Fugitive emissions are "*those emissions which could not reasonably pass through a stack, chimney, vent, or other functionally-equivalent opening*". EPA has stated "*we interpret the phrase 'could not reasonably pass' by determining whether such emissions can be reasonably collected or captured (e.g. enclosures or hoods). Under this interpretation, it is axiomatic that any emissions actually collected or captured by the source are non-fugitive emissions. The answer is less clear when the source is not currently collecting or capturing the emissions. In these circumstances we make case-by-case determinations as to whether a source could reasonably collect or capture such emissions*". (72 Fed. Reg. 63258, Nov. 13, 2007; 73 Fed. Reg. 77891, Dec. 19, 2008).

Based on this EPA criteria and that outlined in the Interpretation of the Definition of Fugitive Emissions in Parts 70 and 71 memo, MCAQD finds that:

- Emissions are not already collected.
- Emissions are not collected by other sources in the source category.
- Henhouses are not subject to federal, state or local rules requiring collection of emissions.
- Henhouses are not subject to federal, state or county RACT, BACT or LAER requirements that require collection.
- A case of a similar pollutant emitting facility was considered (a whiskey warehouse).
- An Indiana court found VOC emissions from the whiskey warehouse to be fugitive. Due to the high volume of air that is discharged through fans at the henhouses, collection and control of emissions would be considerably more challenging. A cost analysis concluded that collection and control costs would be in the tens of millions of dollars.

MCAQD therefore concludes that the standard of 'reasonableness' has not been met. All of the emissions from the henhouses are fugitive and would therefore not be included in a determination as to whether Title V thresholds have been triggered.

MCAQD calculated the potential to emit for all non-fugitive air pollutant emissions. The total combined non-fugitive emissions were below the major source thresholds for all air pollutants. MCAQD has therefore concluded that, in accordance with MCAQD Rule 100 §200.65.c and Clean Air Act (CAA) Section 302, the facility does not trigger major source permitting requirements.

Future Developments: The National Air Emissions Monitoring Study (NAEMS) was a result of an EPA compliance agreement announced on January 31, 2005 to address emissions from certain animal feeding operations, also known as AFOs. The agreements provided for a monitoring program for barns and other buildings that house animals and lagoons or other structures that store or treat manure and other wastes.

EPA stated in the Federal Register Notice available at:
http://www3.epa.gov/airquality/agmonitoring/pdfs/afolagooneemreport2012draftappe.pdf#_ga=1.22794168.2087244103.1424728829

> *H2S, PM, and VOC are all regulated under the CAA and subject t o various requirements under that statute and the implementing Federal and State rules and regulations. Emissions of these pollutants come from many different areas at AFOs, including animal housing structures (e.g., barns, covered feed lots) and manure st orage areas (e.g., lagoons, covered manure piles). An important issue that arises under the CAA is whether emissions from different areas at AFOs should be treated as fugitive or nonfugitive.* ***The Agency plans to issue regulations and/ or guidance on this issue after the conclusion of the monitoring study.***

U.S. EPA has completed the monitoring study, but has not published any accepted emission factors, regulations or guidance to be used to determine permitting requirements for the units covered under the agreement.

Also, on November 2, 2015 the U.S. Supreme Court refused to review a decision from the U.S. Court of Appeals for the D.C Circuit dismissing a lawsuit to force EPA to regulate emissions from animal feeding operations (AFOs). The Iowa -based plaintiffs had demanded that EPA regulate ammonia and hydrogen sulfide emissions as criteria pollutants, and AFOs as a source category under the New Source Performance Standards program. They argued that, even without a formal endangerment finding from EPA, the prevalence of scientific evidence that ammonia, hydrogen sulfide and other AFO emissions endanger public health should trigger regulation under the Clean Air Act (CAA). The D.C. Circuit rejected that argument and affirmed that EPA retains the discretion toreview the science and make its own endangerment findings. The Supreme Court's refusal to review the case, captioned Zook v. EPA (No. 15-350), 11 leaves the D.C. Circuit dismissal intact.

Although the court affirmed EPA's authority to make its own endangerment findings and regulate AFOs as a source category under the NSPS program, EPA has not done so.

The decision as to whether to promulgate regulation for air emissions from AFOs or to regulate them as a source category remains with EPA per both the NAEMS and the Supreme Court decision. While no action has been taken by EPA in this regard, MCAQD will follow rules or regulations issued by EPA should they occur in the future.

Related Documents:

Fugitive Emissions Memo.pdf Seagrams Letter.pdf

D. AIR POLLUTION CONTROL EQUIPMENT/EMISSION CONTROL SYSTEM(s):

The facility is not required to maintain a dust control plan; exempt from Rule 310.
Rule 310-Fugitive Dust from Dust Generating Operations, Section 103.1 exempts farm cultural practices. For good neighbor practice, the Permittee did submit a Rule 310 DCP for the overnight parking lot at the facility.

E. EMISSIONS:

1) Emergency Engines
   Emissions calculation is based on each engine operating at no more than 500 hours per any twelve consecutive month period. On the permit application, thePermittee stated that eachengine operates no more than 52 hours per year; the operating hours are strictly for weekly testing.

2) Propane Boilers
Emissions from the propane fuel burning equipment are based on the equipment being operated at 24 hours per day and 365 days per year.

See Table D-1 for the list of emission calculation worksheets and sources of emission factors. The following calculation worksheets are in Appendix A of this document.

Table D-1

Worksheet	Sources of Emissions Description	Sources of Emission factors
1	1 unit: 1,528 h.p engine	Uncontrolled emission factors for the diesel engines > 600 HP are from U.S. EPA AP-42, Table 3.4-1.
2	19 units of Tier 3 engines - 1 @ 364 h.p. & the remaining 18 units @ 464 h.p. per unit.	Uncontrolled emission factors for NOx, CO & PM are from Table 1 40 CFR 60 Subpart IIII.
		Uncontrolled emission factors for SOx and VOC are from US EPA AP-42, Table 3.3-1 for SOx & VOC .
3	2 units of propane fueled boilers	Emission factors (AP-42 Chapter 1.5-1 represents LPG combustion emission factors on a volume basis (lb/1000 gal).
		To convert to an energy basis (lbs/MMBtu), divide by a heating value of 91.5 MMBtu/1000 gal for propane.

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calc sheet .xls

The table below shows the facility wide allowable emissions.

Pollutants	1528 h.p. engine	NSPS engines	Propane boilers	**Allowable Facility wide Emissions**	BACT threshold
	lbs/yr	lbs/yr	lbs/yr	**lbs/yr**	lbs/yr
	Wrksht 1	Wrksht 2	Wrksht 3		
CO:	4,202	24,980	1,422	**30,604**	200,000
NOx:	18,336	28,823	2,464	**49,623**	50,000
SOx:	310	8,934	3	**9,247**	50,000
PM10	535	1,442	133	**2,110**	30,000
PM:	535	1,442	133	**2,110**	50,000
VOC:	539	10,765	190	**11,494**	50,000

F. HAP EMISSION IMPACTS:

Based on the information provided in the permit application, the facility emits insignificant amount of HAPs; therefore, SCREEN modeling was not performed per the Department's HAPs policy.

G. PERFORMANCE TESTING:

There is no emission control system at the facility that requires performance testing.

H. COMMENTS:

Supporting activities associated with egg production includes egg washing, packaging, and cooking, washing, package and storage.

Hickman's uses two types of chemicals in their egg washing regimen. The following two chemicals are:

- Zep FS Chlorinated Defoaming Eggwash for washing eggs, and
- Zep FS Formula 4665 is used to disinfect eggs after washing.

ZEP 4665.pdf

Zep FS chrlorinated deform .pdf

Hickman's uses the following chemical to clean egg washers that needs to be cleaned and washed to remove all heavy minerals.

egg washer cleaner xt_2002.pdf

None of the chemicals contains VOCs and/or HAPs.

06/10/2016: MCAQD Permitting Manager approved the Response to Comments for the Hickman's (Tonopah) Permit #140062 from the hearing to be distributed to the commenters.

140062 Response to Comments.docx

APPENDIX A

Worksheet 1

Uncontrolled Large Diesel Industrial Engines (Emergency Generators > 600 HP)						
Input rating of equipment, HP						
Emissions factors taken from AP-42, Table 3.4-1						
Emission Factors for Large Stationary Diesel and All Stationary Dual-Fuel Engines						
Equipment	HP Rating	Annual Operating Hours				
Kohler	1,528	500				
TOTAL HP	1,528	500				
Emission factors for diesel:				Constants:		
CO:	0.00550	lb/hp-hr		Heating Value =	137,000	BTU/gallon of diesel fuel
NOx:	0.02400	lb/hp-hr		500	hours to determine Exempt Status	
SOx[1]:	0.00040	lb/hp-hr		1 hp =	2545	BTU/hr
PM10:	0.00070	lb/hp-hr		1 hp =	0.746	kW
PM:	0.00070	lb/hp-hr		1 kW =	1.34	hp
VOC:	0.00071	lb/hp-hr				
Emissions:						
	***Daily Emissions**				**Yearly Emissions**	
CO:		**lbs**			**4202**	**lbs**
NOx:		**lbs**			**18336**	**lbs**
SOX:		**lbs**			**310**	**lbs**
PM10		**lbs**			**535**	**lbs**
PM:		**lbs**			**535**	**lbs**
VOC:		**lbs**			**539**	**lbs**

Worksheet 2

Uncontrolled Emissions from NSPS Engines

Equipment	HP Rating	Annual Operating Hours	Comments:
	364	500	1 unit, rated at 364
	8,352	500	18 units, each rated at 464 h.p.
TOTAL HP	8,716	1,000	

1 lb=	453.6	g	
Per EPA CFR 40 Tier 3 emission data			
	g/hp-hr	lbs/hp-hr	lbs/hp-hr
CO	2.6	0.00573	5.73E-03
NOx + HC	3	0.00661	6.61E-03
PM	0.15	0.00033	3.31E-04

Emission factors for diesel:			Sources of Emission Factors	
CO:	5.73E-03	lb/hp-hr	Per EPA CFR 40 Tier 3 emission data	
NOx:	6.61E-03	lb/hp-hr	Per EPA CFR 40 Tier 3 emission data	
SOx:	2.05E-03	lb/hp-hr	Emissions factors taken from AP-42, Table 3.3-1	
assumption: PM=PM 10	3.31E-04	lb/hp-hr	Per EPA CFR 40 Tier 3 emission data	(assumption: PM =PM10)
VOC:	2.47E-03	lb/hp-hr	Emissions factors taken from AP-42, Table 3.3-1	

Emissions:

	*Daily Emissions		Yearly Emissions	
CO:		**lbs**	**24980**	**lbs**
NOx:		**lbs**	**28823**	**lbs**
SOX[2]:		**lbs**	**8934**	**lbs**
PM_{10}		**lbs**	**1442**	**lbs**
VOC:		**lbs**	**10765**	**lbs**

Worksheet 3

Propane Fuel Burning Equipment Calculation Worksheet (Small Boiler < 100 MMBtu/hr)

Input rating of equipment, Btu/hr

1)	990,000	Btu/hr			
2)	990,000	Btu/hr			
Totals	1,980,000	Btu/hr=	1.980	MMBtu/hr	

Emission factors (AP-42 Chapter 1.5-1 represents LPG combustion emission factors on a volume basis (lb/1(

To convert to an energy basis (lbs/MMBtu), divide by a heating value of 91.5 MMBtu/1000 gal for propane.

			lbs/MMBTU		
CO:	7.5	lb/1000 gal	0.0820	Constants	
NOx:	13	lb/1000 gal	0.1421	0.001	ft3/Btu for Natural Gas
SOx	0.018	lb/1000 gal	0.0002	24	hr/day
PM10:	0.7	lb/1000 gal	0.0077	365	day/yr
VOC:	1	lb/1000 gal	0.0109	91.5	MMBtu/1000 gal

Emissions

	Daily Emissions [a]		Annual Emissions [b]	
CO:	**3.90**	**lbs/day**	**1,422**	**lbs/yr**
NOx:	**6.75**	**lbs/day**	**2,464**	**lbs/yr**
SOx	**0.01**	**lbs/day**	**3**	**lbs/yr**
PM10:	**0.36**	**lbs/day**	**133**	**lbs/yr**
VOC:	**0.52**	**lbs/day**	**190**	**lbs/yr**

NOTES:

[a] Based on 24 hours per day for each piece of equipment.

[b] Based on 24 hours a day, 365 days a year.

Items 1-15 Front page: Items 1 to 15 (14 for Renewals) must be completed.
Notes to engineer:
- *For renewal applications the source must either answer 'No' to questions 2-5 or submit an application for a permit modification.*
- *Item 8: Many applicants do not know the SIC code or NAICS code for their industry. For a new application the code can be obtained by doing an on-line search. http://www.osha.gov/pls/imis/sicsearch.html*
- *Items 5, 7 and 14: These may be the same for many applicants.*

Complete: [x] Incomplete: [ ]

Item 16: A simple site diagram has been included, preferably on a standard size paper. Detailed blueprints or construction drawings are not required.

Complete: [x] Incomplete: [ ] N/A: [ ]

Item 17: A simple process flow diagram on a standard size paper is preferred. A process flow diagram may not be needed for some small businesses.

Complete: [ ] Incomplete: [ ] N/A: [x]

Item 18: An O&M plan is required only for a control device. An O&M plan is not required for a spray booth. Inste of including the O&M plan with the application, an applicant may submit it after receiving the permit.

Complete: [ ] Incomplete: [ ] N/A: [x]

Item 19: A dust control plan, if required, must accompany the permit application. The plan will be reviewed and approved by the dust compliance group.

Complete: [ ] Incomplete: [ ] N/A: [x]

Item 20: The applicant needs to complete only those sections of the permit application that are applicable.

Complete: [x] Incomplete: [ ] N/A: [ ]

Notes to engineer:
- *Concerning Section Z: Many applicants will not be able to perform these engineering calculations. We will accept the permit application with a blank Section Z.*

Instructions for completing Sections A, B, C, D, E-1, E-2, F, G, H, I, J, K-1, K-2, K-3, K-4, L, M, X-1, X-2, Y and Z of the permit application are included at the beginning of each section and are self-explanatory.

In general, a material safety data sheet (MSDS) is required for each chemical used, stored or processed at the facility. Exceptions are for very common materials, such as gasoline, diesel, acetone, etc.

Business name: **Hickman's Egg Ranch Inc.**

Permit number: **140062 Rev 0.0.1.0**

Completeness review completed.
Application determined to be: Complete: [y] Incomplete: [ ]

Permit Engineer: **LiSa Kon/Todd Martin** Date: **02/17/2016**
TSD revised 5/16/2017