



June 29, 2017

Nedzlene Ferrario, Senior Planner
Solano County Department of Resource Management
675 Texas Street, Suite 5500
Fairfield, CA 94533

Re: 2016-2017 Odor Management Compliance Report, Jepson Prairie Organics, Vacaville, CA

Dear Ms. Ferrario,

Enclosed with this letter, please find the annual 2016-2017 Odor Management Compliance Report (OMCR) for Jepson Prairie Organics, addressing condition 12C of the Land Use Permit U-11-09.

If you have any questions please call Ms. Danielle Lowther at (707) 678-4718, ext 26 or email dlowther@recology.com.

Sincerely,

Greg Pryor
General Manager
Jepson Prairie Organics, Recology

Cc: Marcy Hannum, Solano County

Attachment: 2016-2017 Odor Management Compliance Report

2016-2017 ODOR MANAGEMENT COMPLIANCE REPORT

Jepson Prairie Organics

SOLANO COUNTY, CALIFORNIA

June 2017

**Prepared By:
Jepson Prairie Organics
6426 Hay Road
Vacaville, CA 95687**

2016-2017 Odor Management Compliance Report Table of Contents

Response to permit compliance

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Permit Compliance

The 2016-2017 Odor Management Compliance Report addresses condition 12C of the Land Use Permit No. U-11-09 for Recology and Jepson Prairie Organics.

12C. The permitted operation shall submit an Odor Management Compliance Report covering the operations of Jepson Prairie Organics. The report shall be submitted annually by June 30, covering the period from October through May of the prior period.

The Odor Management Compliance Report shall address the following items at minimum:

- **Odor sources and sensitive receptors.**
- **Complaints and violations and description of how the complaints were resolved.**
- **Odor control strategies implemented and proposed.**

Odor Sources and Odor Control Strategies

Odor sources and control strategies to minimize odors at Jepson Prairie Organics (JPO) are as follows:

Feedstock Receiving Area – Incoming feedstock can generate odors if stored for excessive periods of time prior to being incorporated into windrows. Feedstock left unprocessed at the site can also generate significant odors. The goal of the facility is to process food waste material as it is delivered. Under normal circumstances, this material is processed and covered within 24 hours. All green waste materials will be scheduled for processing within seven (7) days. High odor content deliveries will be targeted for immediate processing, or alternatively, may be redirected to the landfill for disposal. Odor minimization will be accomplished by daily cleaning of the feedstock receiving area, periodic use of the pressure washer, application of lime on areas of nutrient rich process water and covering any food waste left unprocessed at the end of the day with ground greenwaste.

Aisles between Windrows – Windrow aisles can be sources of odor if raw, uncomposted material is left for an excessive amount of time without being exposed to the high temperatures of composting. JPO will practice good housekeeping methods, which include regular patrolling of windrow aisles and the use of a pressurized water broom to clean any

spilled materials. The facility is performing wash down of the areas between the ECS zones, between the zones and the asphalt berms, and between the concrete push walls using a high-pressure washer and water truck. The high pressure washer will minimize water during conveyance of the liquid-by-product to the drainage ditches, sump, and into the aerated pond treatment system (or Baker tanks). Clogging of the underground drainage system can generate odors. Clogs are systematically purged to prevent blockage and reduce potential odors. Windrow aisles can also be a source of odor if stormwater or process water is allowed to pond in potholes or other pad depressions. Any standing water discovered will be treated with lime, odor control agent and/or absorbed with ground greenwaste and depressions will be filled.

Windrows / ECS Zones – Odors emanating from windrows or ECS zones typically indicate problems in the initial feedstock mix, blending, turning frequency, pile porosity and/or moisture content of the pile. JPO builds its initial zones with appropriate carbon to nitrogen levels, assures adequate porosity and initial mixing, and maintains adequate moisture within the piles. Weather patterns will be continuously monitored for inversion layers and processing schedules (i.e., turning, grinding, etc.) will be adjusted and communicated to employees to minimize odor-generating activities. To manage the potential generation of liquids from the zones, a portion of the woody fraction of finished screened overs material is being incorporated into the feedstock and is being used as plenum layer prior to the placement of the feedstock into the first zone. This process reduces the moisture content of the feedstock, increases porosity, promotes aerobic microbial activity, and helps absorb liquid that may be produced by the feedstock.

Biofilters – Biofilters are absorbent beds of porous organic materials that support microorganisms capable of breaking down volatile compounds in the air-stream flowing through them. Common biofilter media includes mature compost, shredded bark, and hard wood chips used individually or in mixtures. Compost air pulled through the ECS zones has elevated levels of volatile organic compounds and odor producing constituents. By directing this air-stream through the biofilters, these compounds are significantly reduced.

Biofilters are resilient in various environmental conditions (hot or cold temperatures; humid or dry environments). Adequate moisture is applied to the biofilter media to maintain moisture content between 50% to 70%. Temperature, moisture and pH are monitored and adjustments made as needed. Over time, the hard wood material breaks down and affects the proper function of the biofilters. To maintain proper functioning of the biofilters and reduce odors, the hard wood material is removed and replaced as needed, typically annually.

Finished Product Material – Finished material has completed pathogen reduction and meets metal concentration requirements, but may generate odors if it is unstable. Finished compost

product is stored in windrows to allow turning and moisture conditioning when necessary. Finished material which has stabilized can be stored in larger piles, and can be turned occasionally.

Ponds – The lined ponds (Pond A and Pond B) can cause odors if overloaded with sediment or nutrients or not properly aerated. The lined ponds are equipped with aeration systems as an odor abatement measure. In addition, both ponds can be periodically dosed with compounds that deactivate odorous molecules.

A number of Best Management Practices (BMPs) are implemented to minimize the nutrient and sediment loads discharged to the respective ponds. These provisions include: processing of liquid byproduct from the compost processing area through the Aerobic Pond Treatment System (Pond A) prior to discharge to the retention storage pond (Pond B); building pads of ground greenwaste under tipped and pre-processed food material deliveries and compost windrows to absorb excess moisture; use of wattles; periodic street sweeping; use of odor control agents and lime; and periodic pond maintenance. Additional controls have included periodic addition of fresh water to the pond to dilute nutrients, adjusting pH, and increasing dissolved oxygen (DO) for re-use of the water on-site.

Monitoring for DO is currently conducted weekly and reported to the LEA on a monthly basis. The YSI meter used for these measurements is calibrated and certified on a monthly basis by an external contractor.

Odor Monitoring – To ensure the effectiveness of the odor mitigation efforts, odor monitoring is performed at various proximities to the composting area. This multi-distance monitoring program facilitates the early detection of possible odor issues and remediation of any contributing operational activities. The Odor Monitoring Checkpoint list, provided as Attachment A, is utilized by site staff. The Odor Descriptor Wheel, provided as Attachment C, is utilized to designate the odor descriptor for the Odor Monitoring Checkpoint list.

Sensitive Receptors

Sensitive receptors are represented in the Odor Monitoring Checkpoint list, provided as Attachment A and the Daily Odor Checkpoints Map, provided as Attachment B.

Complaints and violations and description of how the complaints were resolved

Odor complaints are received by Solano County Department of Resource Management Local Enforcement Agency (LEA) and forwarded to JPO. A representative from the LEA and JPO meet at the residence(s) of the complainant(s) to determine if odors can be indentified and quantified. If no compost odors are present, the odor complaint is determined to be unverified or unconfirmed. If compost odors are present, the investigators quantify the odors by utilizing an olfactory meter, called the Nasal Ranger. Using the Nasal Ranger, odors are detected at a Dilution to Threshold (D/T); the lowest reading registered as a D/T of 2 and the highest as a D/T of 60. If odors are detected at the residence(s) of the complainant(s), the odor investigation protocol requires the investigators to confirm the source of the odors by tracing the odors to the source.

Jepson Prairie Organics received no verified odor events during October 2016 to May 2017. According to LEA records, there were 63 calls to report odor complaints between October 2016 and May 2017. According to facility records, there were 53 calls to report odor complaints which resulted in odor investigations to occur. The 10 calls that were not investigated were due to not getting the call within a reasonable time to perform an investigation and/or at the request of the complainant. Of the 53 calls, there were 5 complainants. There were 36 odor complaint events that occurred which resulted in an Odor Investigation Report to be submitted to the LEA. Of the 36 odor complaint events, there were no Areas of Concern (AOC) or Violations (V) issued. A summary of the odor complaints made from October 2016 to May 2017 can be found in Attachment D.

Latest odor control strategy

A Permit to Operate was issued on September 19, 2014 by the Yolo-Solano Air Quality Management District to allow for modification of the previous ECS system to generate additional aeration of the compost material. The design changes included installing HDPE perforated collection pipes in replacement of the compost vaults and using a biocover in replacement of the tarps. One of the two additional biofilters and blowers has been installed. The additional section of the system would be installed to accommodate additional material.

Following the implementation of these changes, investigations have showed that there has been a considerable drop in on-site odors due to greater air flow pulled through the zones, especially during the first and most active stage of the compost process. Periodic monitoring occurs to measure the airflow to ensure proper aeration of the zones.

The facility continues to monitor odors and make on-site improvements to reduce potential odor generating scenarios. Pad improvement efforts are continuously executed to reduce potential odor. Biofilter change out frequency has been increased to annual to ensure effective odor reduction. As new odor control strategies are developed, the site will investigate applicability of the strategies to the site. Jepson Prairie Organics is dedicated to reduce and minimize off-site odor migration. Before the start of the upcoming winter season, additional training will be conducted to educate facility staff to the importance of the various aspects of composting and actively manage the site toward improved odor reduction.

Attachment A

JPO Odor Monitoring Checkpoint List

Date : _____

JPO monitoring technician: _____

Wind direction: _____ Wind speed: _____ mph Weather conditions (circle): Sun/part sun

Temperature: _____ Overcast Light rain Heavy rain

Off Site

Time	Location/Description	Direction/Distance from JPO	D/T	Descriptors	Notes
	1. Hay Road at JPO Front Gate	Northwest – 600 feet			
	2. Hay Road - Due North	Due North – 200 feet			
	3. Hay Road - Northeast	Northeast – 500 feet			
	4. Hay Road/Hwy 113	East/Northeast – 3,000 feet			
	5. Hwy 113 East - 500 feet south of Hay Road intersection	Due East – 1/2 mile			
	6. Brown Road/Hwy 113	Southwest – 1/2 mile			
	7. Pedrick Road – 1,000 feet north of Maine Prairie Road	Northeast – 2 miles			
	8. Binghamton Road East of Hwy 113 – 2,250 feet east of Hwy 113	North/Northeast – 3 miles			Sensitive Receptor
	9. Hawkins Road approx. 1/2 mile West of Hwy 113	Due North – 3 miles			Sensitive Receptor
	10. Circle C Lane – 1,250 feet west of Clark Road	North/Northwest – 3.5 miles			Sensitive Receptor
	11. Clark Road/Kozy Lane	North/Northwest – 3 miles			Sensitive Receptor
	12. Fry Road/Clark Road	Northwest – 2 miles			
	13. Fry Road - Due North	Due North – 1.6 miles			
	14. Fry Road/ Hwy 113	Northeast – 1.7 miles			
	15. Dally Road - 1,000 feet south off Hay Road	Due West – 2 miles			

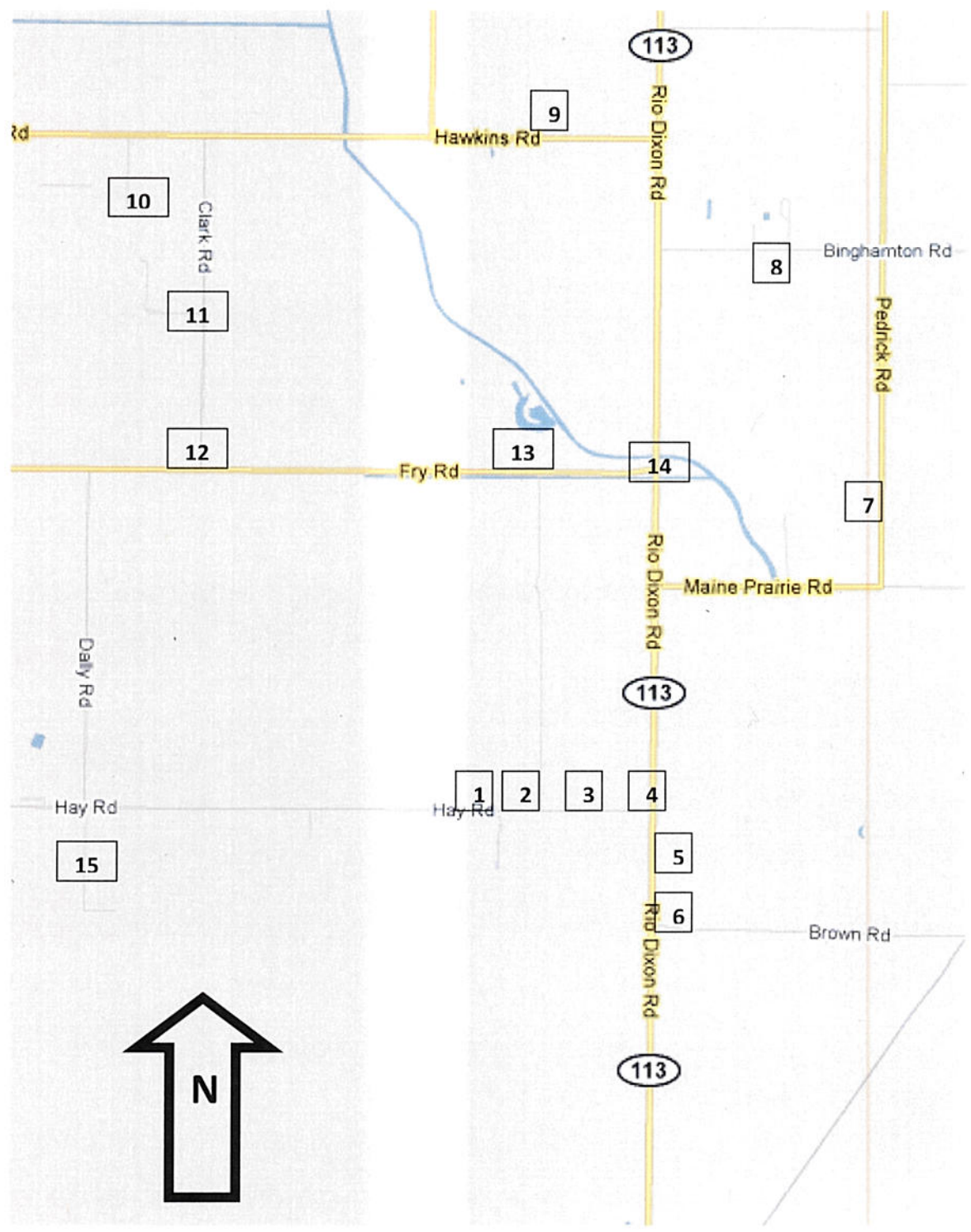
On Site

Time	Location	D/T	Descriptors	Notes
	1. Office parking lot			
	2. Preprocessing area			
	3. Active composting			
	4. Biofilter 1			
	5. Biofilter 2			
	6. Curing area			
	7. Retention pond			
	8. Biosolids storage area			

Attachment B

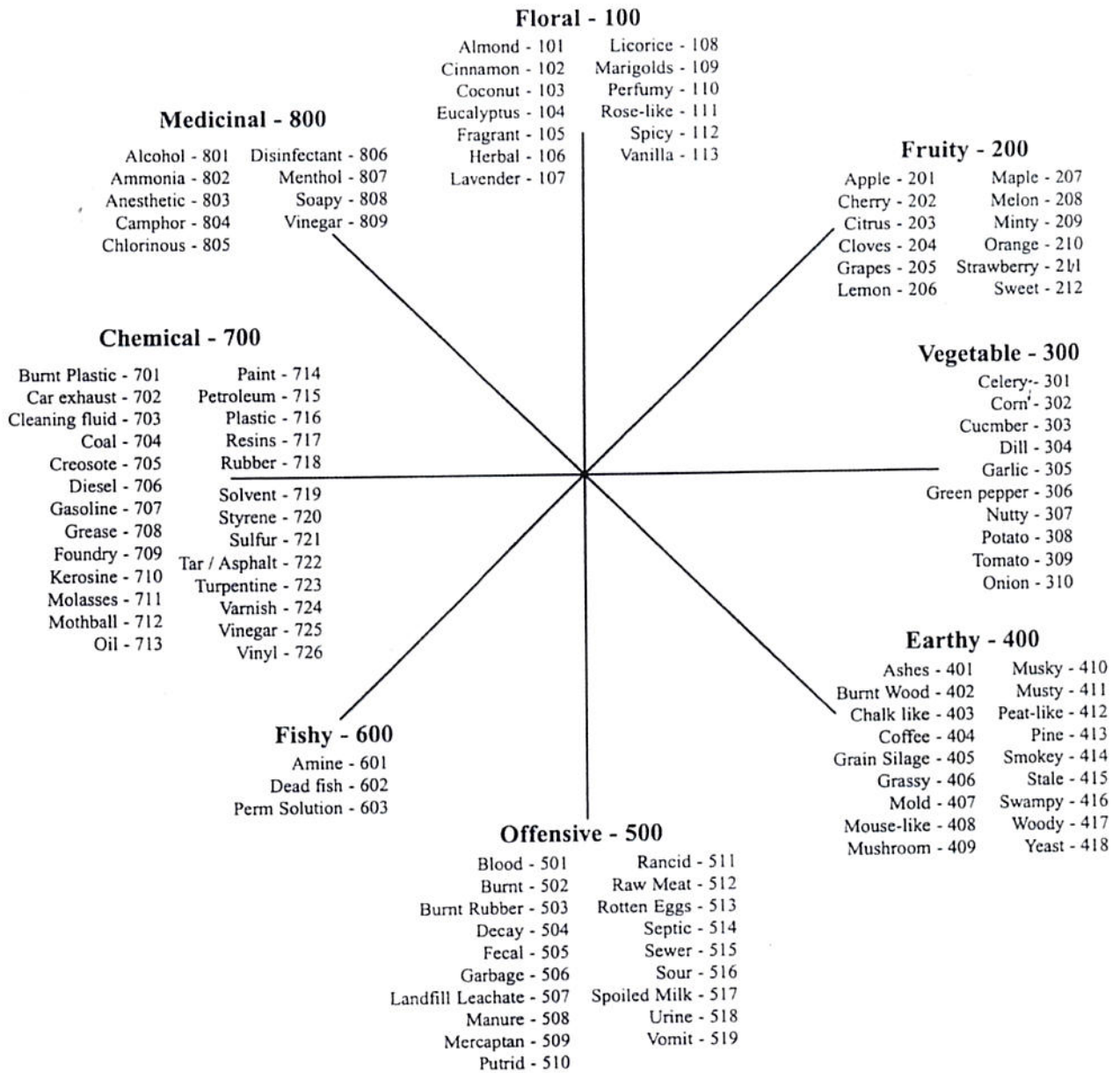
Jepson Prairie Organics

Daily Odor Checkpoints Map



Attachment C

Odor Descriptors



Attachment D

ODOR COMPLAINT INVESTIGATION SUMMARY

October 2016 - May 2017

Date	Time	Complainant	Address	Wind Direction	Wind MPH	LEA Rep	V/UV/A OC	Notes: (Odors detected, duration)
2016.10.07	7:34 p.m.	John Dannenberg	6465 Hawkins	NA	NA	Marcy Hannum	UV	No odors detected.
2016.10.08	7:25 p.m.	John Dannenberg	6465 Hawkins	NA	NA	Marcy Hannum	UV	No odors detected.
2016.10.15	9 a.m.	John Dannenberg	6465 Hawkins	SSW	0-5 MPH	Henrik Giugliano	UV	No compost odors detected. Wet grass.
2016.10.24	9:35 p.m.	John Dannenberg	6465 Hawkins	S	4-16 MPH	Connie Howard	UV	No odors detected.
2016.10.25	5:54 a.m.	Rosie Enriquez	6107 Clark Road	SSE	1-6 MPH	Connie Howard	UV	No odors detected.
2016.10.27	2:40 p.m.	Rosie Enriquez	6107 Clark Road	SSE	1-5 MPH	Marcy Hannum	UV	No odors detected.
2016.10.29	9:35 a.m.	John Dannenberg	6465 Hawkins	SW	0-3 MPH	Jeffrey Bell	UV	No odors detected.
2016.11.06	7:38 a.m.	John Dannenberg	6465 Hawkins	WSW	4-7 MPH	Aimee Austin	UV	No odors detected.
2016.11.14	4:45 p.m.	Rosie Enriquez	6107 Clark Road	WSW	0-1 MPH	Henrik Giugliano	UV	No odors detected.
2016.11.18	9:06 p.m.	John Dannenberg	6465 Hawkins	SSE	1-3 MPH	Josh Bernardo	UV	No odors detected.
2016.11.22	3:26 p.m.	Janet Nixon	6156 Circle C	SE	2-5 MPH	Marcy Hannum	UV	No odors detected.
2016.11.22	5:05 p.m.	Rosie Enriquez	6107 Clark Road	SE	2-4 MPH	Josh Bernardo	UV	No compost odors detected at the residence. On Fry Road, dairy (and other) odors detected.
2016.11.26	2:45 p.m.	John Dannenberg	6465 Hawkins Rd.	S	6-13 MPH	David Weiss	UV	No odors detected.
2016.12.04	3:10 p.m.	John Dannenberg	6465 Hawkins Rd.	S	1-3 MPH	Aimee Austin	UV	No odors detected.
2016.12.05	5:05 p.m.	John Dannenberg	6465 Hawkins Rd.	SSW	2-3 MPH	Aimee Austin	UV	No odors detected.
2016.12.08	12:37 p.m.	Rosie Enriquez	6107 Clark Road	SSE	10-18 MPH	David Weiss	UV	No odors detected.
2016.12.11	9:10 a.m.	John Dannenberg	6565 Hawkins Rd.	SW	5-7 MPH	Jeffrey Bell	UV	No odors detected.
2016.12.30	2:03 p.m.	Glenda Stormont	6161 Circle C	SSE	7-12 MPH	Marcy Hannum	UV	No compost odors detected at any of the residences.
	2:10 p.m.	Rosie Enriquez	6107 Clark Road					
	2:15 p.m.	Janet Nixon	6156 Circle C					
2017.01.01	4:02 p.m.	Rosie Enriquez	6107 Clark Road	SSE	8-13 MPH	Marcy Hannum	UV	No odors detected at either residence.
	4:12 p.m.	Janet Nixon	6156 Circle C					
2017.01.02	7:52 a.m.	Rosie Enriquez	6107 Clark Road	SSE	2-5 MPH	Marcy Hannum	UV	No odors detected at either residence.
	8:04 a.m.	Janet Nixon	6156 Circle C					
2017.01.19	8:06 a.m.	Rosie Enriquez	6107 Clark Road	SE	2-4 MPH	David Weiss	UV	Initially, no odors detected. Minimal compost odor, intermittent. Difficult to detect, would not have measured on the Nasal Ranger

ODOR COMPLAINT INVESTIGATION SUMMARY

October 2016 - May 2017

Date	Time	Complainant	Address	Wind Direction	Wind MPH	LEA Rep	V/UV/AOC	Notes: (Odors detected, duration)
2017.01.20	8:40 a.m.	Rosie Enriquez	6107 Clark Rd.	SSE	15-23 MPH	Marcy Hannum	UV	Minimal compost odor, intermittent. Very faint and would not have measured on the Nasal Ranger
2017.01.21	7:58 a.m.	Rosie Enriquez	6107 Clark Road	SE	4-11 MPH	Jeff Bell	UV	No compost odors detected.
2017.01.22	9:03 a.m.	Rosie Enriquez	6107 Clark Road	SSE	9-15 MPH	Jeffrey Bell	UV	No compost odors detected. Faint odors of manure and ammonia were detected.
2017.02.02	3:40 p.m.	Rosie Enriquez	6107 Clark Road	SE	11-19 MPH	Dave Weiss	UV	No compost odors detected.
2017.02.05	12:51 p.m.	John Dannenberg	6465 Hawkins Rd.	SSE	5-10 MPH	Marcy Hannum	UV	Very faint compost odor briefly detected, difficult to identify
2017.02.05	3:23 p.m. 3:45 p.m. 3:51 p.m.	Rosie Enriquez Glenda Stormont Jason Coleman	6107 Clark Road 6161 Circle C 6059 Clark Rd.	SSE	5-11 MPH	Marcy Hannum	UV	No compost odors detected at any of the residences.
2017.02.15	5:26 P.m 5:33 p.m	Rosie Enriquez Glenda Stormont	6107 Clark Rd. 6161 Circle C	SSW	~1 MPH	Connie Howard	UV	No compost odors detected at either residence
2017.03.23	9:45 a.m.	Rosie Enriquez	6107 Clark Road	ESE	1-6 MPH	Marcy Hannum	UV	No compost odors detected.
2017.03.26	2:42 p.m.	John Dannenberg	6465 Hawkins Rd.	SSE	6-13 MPH	Aimee Austin	UV	No compost odors detected. Grass and manure.
2017.04.01	7:45 p.m	John Dannenberg	6465 Hawkins Rd.	SSE	3-7 MPH	Anthony Endow	UV	No compost odors detected. Burnt hoof smell.
2017.04.11	6:49 p.m.	John Dannenberg	6465 Hawkins Rd.	SW	5-8 MPH	Connie Howard	UV	No compost odors detected.
2017.04.12	6:40 p.m.	John Dannenberg	6465 Hawkins Rd.	SW	10-16 MPH	Connie Howard	UV	No compost odors detected.
2017.04.15	~ 8 p.m	John Dannenberg	6465 Hawkins Rd.	SSE	0-4 MPH	Jeffery Bell	UV	No compost odors detected.
2017.04.19	~7:45 a.m.	John Dannenberg	6465 Hawkins Rd.	SW	4-8 MPH	Dave Weiss	UV	No compost odors detected.
2017.04.21	~7:30 a.m.	John Dannenberg	6465 Hawkins Rd.	NE	2-3 MPH	Aimee Austin	UV	No compost odors detected. Very faint grassy, peat like odor that was difficult to distinguish.

Wind Direction and MPH:

NA indicates wind was too low to be calculated (between 0 MPH and less than 1 MPH)

V/UV/AOC:

V: Violation UV: Unverified/Unconfirmed AOC: Area of Concern