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Evaluation Memo

Application Number:	PD15-015
Facility ID Number:	079-00185
Name of Applicant:	Lexycon LLC
Name of Facility:	LexBlend
Location of Facility:	Nitro, Putnam County
Latitude/Longitude:	38.43060/-81.84202
Application Type:	Permit Determination
Submission Date:	February 20, 2015
Complete Date:	February 20, 2015
Due Date:	**April 3, 2015**
Engineer:	Joe Kessler

Background Information

On February 20, 2015 Lexycon, LLC (Lexycon), submitted a Permit Determination Form (PDF) for a permanent chemical blending and storage facility (known as the LexBlend facility) in the PAR Industrial Park located in Nitro, Putnam County, WV. Previously, on April 17, 2014, a "no permit needed" determination (PD14-026) was made concerning the facility (at the time known as the Poca Blending facility). However, PD14-026 was issued to Freedom Industries, Inc. (Freedom) and was, therefore, only valid while the facility was owned and operated by Freedom. In May 2014, Freedom, with approval of the bankruptcy court, sold Poca Blending to Lexycon. On October 29, 2014, Lexycon submitted a PDF (PD14-145) for the LexBlend facility. However, the PDF did not include enough information to make a determination if the facility was now a "stationary source" under Lexycon's ownership and, on November 18, 2014, the DAQ issued a "no decision" concerning PD14-145. After a delay in resubmitting a PDF for the LexBlend facility, the DAQ, on January 28, 2015, sent Lexycon a letter requiring a new PDF within fifteen (15) business days.

This PDF is required so as to determine if, using standard methodology and precedents, the LexBlend facility (as owned and operated by Lexycon) would be defined as a "stationary source" pursuant to Section 2.24 of 45CSR13 and, therefore, a permit be required.

Statutory Authority of the DAQ

The statutory authority of the of the DAQ is given under the Air Pollution Control Act (APCA) - West Virginia Code §22-5-1, et. seq. Based on the language under §22-5-1, et. seq., the DAQ, in making "stationary source" determinations under 45CSR13, does not take into consideration non-air quality issues such as nuisance potential (noise, sight line obstruction, traffic) or non-air quality environmental impacts.

Description of Process

Lexycon operates an existing permanent chemical storage and blending facility at the LexBlend facility. The facility receives, stores, blends, and distributes chemicals for various applications primarily in the mining industry. The chemicals are typically used for extraction and processing, pH control, dust control, treatment of mine discharge water, and freeze protection as well as water clarification chemicals typically referred to as flocculants. The storage, blending, and distribution of the chemicals are accomplished by using sixty-seven (67) fixed-roof storage tanks that potentially will process materials that contain Volatile Organic Compounds (VOCs). All but seven (7) of these tanks (T-500 through T-503 and T-505 through T-507) are located inside a permanent building. Other tanks are located at the facility but either do not process materials that contain VOCs or are no longer in service. A full inventory of the tanks located at the site, the tank's capacity, and the material stored was provided in the PDF.

The blending process begins with the off-loading of liquid raw materials from tank trucks or rail cars into storage tanks. The liquid raw materials are then combined, on a batch basis, with water and other additives in various blending tanks to achieve the desired composition and consistency for the final product. The products may then be held in storage tanks before being packaged in drums or totes for hauling off-site. Additionally, final product may be loaded into tanker trucks for hauling off-site from one of eight (8) organic material loadouts. The chemical storage, blending, and distribution operations have the potential to produce emissions of VOCs.

Additionally, there are two natural gas-fired boilers located at the facility with each rated at a Maximum Design Heat Input (MDHI) of 1.0 mmBtu/hr. These units have the potential to produce emissions of both VOCs and other pollutants that are the products of combustion.

Air Emissions and Calculation Methodologies

Lexycon submitted an emissions estimate (including individual emissions calculations for every tank electronically) for the chemical blending facility based on a reasonable worst-case operating scenario (related to the potential air emissions). The following will discuss the air emissions and methodology of Lexycon's emissions estimate for each source and any revisions to such made by the writer.

Boilers

The potential emissions from the two (2) 1.00 mmBtu/hr natural gas-fired boilers were based on the emission factors provided for natural gas combustion as given in AP-42 Section 1.4. (AP-42 is a database of emission factors maintained by USEPA). Hourly emissions were based on the MDHI of the units and annual emissions were based on an annual operation of 8,760 hours. A natural gas heat content value of 1,050 Btu/ft^3 was used in the calculations.

Storage Tanks

Emissions from the storage tanks were based on the emission factor calculation methodologies given in AP-42 Section 7. Lexycon did not use the TANKS 4.09d emissions calculation program (this program uses the emission factor calculation methodologies given in AP-42 Section 7) as it does not have a setting for above-ground tanks located inside a building. Tanks located inside a building would not be subject to potential solar expansion of the vapor space expansion factor (K_E). By doing the calculations manually, Lexycon was able to use an appropriate indoor expansion factor to give a more accurate representation of the emissions of the enclosed storage tanks located inside the building. The emissions from the seven (7) tanks (T-500 through T-503 and T-505 through T-507) located outside the building were calculated manually and included an appropriate outdoor vapor space expansion factor.

The total emissions from each fixed roof storage tank are the combination of the calculated "standing loss" and "working loss." The standing loss refers to the loss of vapors as a result of tank vapor space breathing (resulting from temperature and pressure differences) that occurs continuously when the tank is storing liquid. The working loss refers to the loss of vapors as a result of continuous tank filling or emptying operations. Standing losses are independent of storage tank throughput while working losses are dependent on throughput.

To produce a reasonable maximum worst-case emissions estimate from the storage tanks, Lexycon based tank materials and throughputs on actual 2013 material throughputs (while the facility was operated by Freedom as Poca Blending) multiplied by a factor of two and rounded up to the nearest 10,0000 gallon level. The 2013 material throughputs occurred while the facility was operated by Freedom as Poca Blending and were noted in PD14-026 to have been a "record year." Hourly standing losses were based on the annual emissions divided by 8,760 hours (appropriate, as standing losses occur continuously without regard to filling or emptying of the tank).

While Lexycon based the worst-case hourly working loss emissions on the annual emissions divided by 8,760 hours as well, the writer revised this calculation and based the worst-case hourly working loss emissions on the annual emissions divided by 1,000 hours. As working losses occur only when the storage tanks are being filled or emptied (even partially), a lower annual hours of operation was deemed appropriate for determination of the hourly emissions. It is important to note that Section 7 of AP-42 does not provide for a method of calculating short-term working losses. Emissions of all vapors were conservatively estimated to be 100% VOCs.

Lexycon did not provide a worst-case daily emission estimate from the storage tanks. The writer calculated the worst-case daily emission rate using the hourly emission rates (calculated as described above) multiplied by 24. Individual and total storage tank emissions are listed under Attachment A: Table 1.

Truck Loadouts

Lexycon calculated emissions from twenty-five (25) individual storage tanks that have the capability to load out material through one of the eight (8) organic material truck loading stations. For each of the twenty-five (25) individual tanks, Lexycon calculated load-out emissions based on Equation (1) of AP-42 Section 5.2-1. In this equation, Lexycon used properties specific to the liquids loaded (vapor pressures, constituent compound fractions) and to the method of loading: where top loading is conducted the "splash loading" variable was used and where bottom loading is used the "submerged loading" variable was used. Maximum hourly emissions per tank were based on the tank's maximum loading rate. The maximum hourly loadout emissions of the entire facility were based on the eight loadouts operating simultaneously loading out the highest emitting tanks that had both VOC and HAP emissions. The methodology for calculating the annual emissions could not be verified. No estimation for the maximum daily emissions were provided. Four tanks (404, 410, 418, and 306) were calculated incorrectly (the lb-VOC/truck amount was not multiplied by the trucks/hour) and the emissions were corrected by the writer.

The writer, using the information provided for individual tanks loadout emissions calculated as described above (as corrected), re-calculated the maximum hourly, daily, and annual emissions from the loadout operations. The maximum hourly emissions were increased by 20% from Lexycon's calculated values to account for the possibility of loading trucks that had not been cleaned previously (pursuant to guidance from AP-42). Maximum individual tank loadout daily emissions were based on the calculated maximum minutes of loading operations that would occur when emptying the maximum capacity of the tank twice (an extremely conservative estimate) in one day. Individual annual emissions per tank were based on the annual throughout of the tank.

The maximum hourly aggregate loadout emissions of all tanks were then based on the eight (8) worst-case (related to the potential air emissions) tanks loading out simultaneously regardless if they contained just VOCs or VOCs and HAPs. The maximum facility-wide daily and annual loadout emissions of all tanks were the sum of all tanks individual maximum daily and annual loadout emissions, respectively. Emissions of all vapors were conservatively estimated to be 100% VOCs. Attachment B of this document summarizes the loadout emissions at the LexBlend facility.

Hazardous Air Pollutants.

Hazardous Air Pollutants (HAPs) are, with some revision since, 188 compounds identified under Section 112(b) of the Clean Air Act (CAA) as pollutants or groups of pollutants that EPA knows or suspects may cause cancer or other serious human health effects. Lexycon identified HAPs as present in two (2) materials handled at the LexBlend facility: Propylene Glycol (ethylene glycol @ 0.1%), and Glycerin (methanol @ 0.1%). However, to be very conservative, and for simplicity, the author assumed that 1% of all VOC emissions from the facility were HAPs in the permit determination analysis.

Summary

Based on the above emissions calculations methodology, the reasonable maximum uncontrolled emissions from the facility are given in Attachment C: Table 4.

Determination of Permit Applicability

Pursuant to §45-13-5.1, "[n]o person shall cause, suffer, allow or permit the construction . . . and operation of any stationary source to be commenced without . . . obtaining a permit to construct." The definition of "stationary source" is given under Section 2.24 of the 45CSR13 and includes four applicability tests under 2.24(a) through 2.24(d). Each applicability test with respect to the LexBlend facility will be discussed below.

§45-13-2.24(a)

Section 2.24(a) states any facility that "is subject to any substantive requirement of an emission control rule promulgated by the Secretary" is defined as a stationary source. "Emission control rules promulgated by the Secretary" include state air quality regulations and, through 45CSR15, 45CSR16, and 45CSR34, all Federal National Emissions Standards of Hazardous Air Pollutants (NESHAPs), National New Source Performance Standards (NSPS), and Maximum Achievable Control Technology (MACT) rules. The following will discuss each potentially applicable rule and any substantive requirement that may apply to the facility.

45CSR2: To Prevent and Control Particulate Air Pollution from Combustion of Fuel in Indirect Heat Exchangers

The boilers have been determined to meet the definition of a "fuel burning unit" under 45CSR2 ("producing heat or power by indirect heat transfer") and are, therefore, subject to the applicable requirements therein. However, pursuant to the exemption given under §45-2-11, as the MDHI of the Boilers are less than 10 mmBtu/hr, the units are not subject to sections 4, 5, 6, 8 and 9 of 45CSR2. The only remaining substantive requirement is under Section 3.1 - Visible Emissions Standards. Pursuant to 45CSR2, Section 3.1, the boilers are subject to an opacity limit of 10%. Proper maintenance and operation of the boilers should keep the opacity of the unit well below 10% during normal operations.

Section 3.1 of 45CSR2 is not considered a "substantive" requirement for purposes of §45-13-2.24(a).

45CSR4: To Prevent And Control The Discharge Of Air Pollutants Into The Open Air Which Causes Or Contributes To an Objectionable Odor Or Odors

The potentiality of odor issues from a facility is not used as the basis for defining the facility as a "stationary source" under§45-13-2.24(a).

45CSR4 is "designed to prevent and control the discharge of pollutants into the open air which causes or contributes to an objectionable odor or odors." The rule does not contain any quantified odor thresholds. §45-4-2.6 defines an objectionable odor in the following manner:

> [I]n addition to odors generally recognized as being objectionable, an odor shall be deemed objectionable when in the opinion of a duly authorized representative of the Director, based upon his investigations or his investigations and complaints, such odor is objectionable.

An objectionable odor must be determined by the DAQ in the course of an inspection or investigation. If, in the course of an inspection or investigation, the DAQ determines that the a facility is causing or contributing to an objectionable odor, the DAQ will take the actions as required under 45CSR4.

45CSR10: To Prevent and Control Air Pollution from the Emission of Sulfur Oxides (non-applicability)

45CSR10 has requirements limiting SO_2 emissions from "fuel burning units," limiting in-stack SO_2 concentrations of "manufacturing processes," and limiting H_2S concentrations in process gas streams. The only potential applicability of 45CSR10 to the LexBlend facility is the limitations on fuel burning units. The boilers have each been determined to meet the definition of a "fuel burning unit" under 45CSR10. However, pursuant to the exemption given under §45-10-10.1, as the MDHI of each boiler is less than 10 mmBtu/hr, the units are not subject to the limitations on fuel burning units under 45CSR10.

Subpart Kb—Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984

Pursuant to §60.110b, 40 CFR 60, Subpart Kb applies to "each storage vessel with a capacity greater than or equal to 75 m^3 (19,813 gallons), that is used to store volatile organic liquids (VOL) for which construction, reconstruction, or modification is commenced after July 23, 1984." However Subpart Kb does not apply to "storage vessels with a . . . capacity greater than or equal to 75 m^3 but less than 151 m^3 [39,890 gallons] storing a liquid with a maximum true vapor pressure less than 15.0 kPa. "

The Lexycon facility includes four tanks that have a nominal storage capacity above 19,813 gallons and contains a VOL. However, each, according to the calculations provided in excel documents included with the PDF, stores a material with a vapor pressure of less than 15.0 kPa (see Table 5 below). Therefore, these tanks are not subject to Subpart Kb.

Table 5: Potential Subpart Kb Applicability

Tank Number	Capacity (gallons)	Material Stored	Vapor Pressure (kPa)
418	30,000	FEC 2	0.51
419	30,000	Fatty Acids	0.05
420	30,000	Gen 3 De-icer	0.20
600	25,000	Acetic Acid	2.09

§45-13-2.24(b)

Section 2.24(b) states any facility that "[d]ischarges or has the potential to discharge more than six (6) pounds per hour and ten (10) tons per year, or has the potential to discharge more than 144 pounds per calendar day, of any regulated air pollutant" is defined as a stationary source. Based

on DAQ procedures and policies, "potential to discharge" is calculated without any control devices and at a facility's reasonably maximum operating conditions. In the case of the LexBlend facility, this requires calculating the boilers hourly and annual emissions based on the MDHI and operation of 8,760 hours/year and the use of reasonably maximum material throughputs to calculate the storage tank and loadout emissions. Using this methodology, the facility-wide emissions under Attachment C: Table 4 were calculated to be less than those that would define the facility as a "stationary source" under §45-13-2.24(b).

§45-13-2.24(c)

Section 2.24(c) states any facility that "[d]ischarges or has the potential to discharge more than two (2) pounds per hour or five (5) tons per year of hazardous air pollutants considered on an aggregated basis" is defined as a stationary source. Using the same methodology as described above in calculating emission rates under 2.24(b), the facility-wide HAP emissions under Attachment C: Table 4 were calculated to be less than those that would define the facility as a "stationary source" under §45-13-2.24(c).

§45-13-2.24(d)

Section 2.24(d) states any facility that "[d]ischarges or has the potential to discharge any air pollutant(s) listed in Table 45-13A in the amounts shown in Table 45-13A or greater." Table 45-13A of 45CSR13 lists chemicals generally referred to as Toxic Air Pollutants (TAPs). Lexycon did not identify any TAP containing materials handled at the LexBlend facility.

Summary and Recommendation

Based on the information provided by Lexycon and on information from the C/E Section, I recommend the issuance of a "no permit needed" letter to Lexycon, LLC for the LexBlend facility located in Nitro, Putnam County, WV based on the following:

- The facility is not subject to a substantive requirement of an emission control rule promulgated by the Secretary; or
- The facility-wide uncontrolled emissions, as based on reasonably maximum parameters and using very conservative calculation methodologies, are less, on a pollutant-by pollutant basis, of the amounts that would define the proposed LexBlend facility as a "stationary source' under §45-13-2.24(b), 2.24(c), or 2.24(d).

Joe Kessler, PE
Engineer

3/12/15
Date

Attachment A
PD15-015
Lexycon: LexyBlend (079-00185)

Table 1: Storage Tank Emissions

Tank #	Material	Working Losses			Standing Losses			Total Losses		
		(lb/hr)	(lb/day)	(lb/yr)	(lb/hr)	(lb/day)	(lb/yr)	(lb/hr)	(lb/day)	(lb/yr)
202	Glycerin	0.0009	0.0219	0.91	0.0001	0.0018	0.65	0.0010	0.0237	1.56
203	Glycerin	0.0009	0.0219	0.91	0.0001	0.0018	0.65	0.0010	0.0237	1.56
204	Glycerin	0.0009	0.0219	0.91	0.0001	0.0018	0.65	0.0010	0.0237	1.56
205	Glycerin	0.0009	0.0219	0.91	0.0001	0.0018	0.65	0.0010	0.0237	1.56
214	Glycerin	0.0009	0.0219	0.91	0.0001	0.0018	0.65	0.0010	0.0237	1.56
215	Glycerin	0.0009	0.0219	0.91	0.0001	0.0018	0.65	0.0010	0.0237	0.65
218	Glycerin	0.0009	0.0219	0.91	0.0001	0.0018	0.65	0.0010	0.0237	1.56
429	Glycerin	0.0009	0.0219	0.91	0.0001	0.0018	0.65	0.0010	0.0237	1.56
710	Glycerin	0.0009	0.0219	0.91	0.0001	0.0018	0.65	0.0010	0.0237	1.56
711	Glycerin	0.0009	0.0219	0.91	0.0001	0.0018	0.65	0.0010	0.0237	1.56
712	Glycerin	0.0009	0.0219	0.91	0.0001	0.0018	0.65	0.0010	0.0237	1.56
713	Glycerin	0.0009	0.0219	0.91	0.0001	0.0018	0.65	0.0010	0.0237	1.56
217	Propylene Glycol	0.0010	0.0244	1.02	0.0002	0.0041	1.50	0.0012	0.0285	2.41
Diesel	Diesel	0.1733	4.1582	173.26	0.0112	0.2686	98.03	0.1844	4.4267	98.95
207	Mixed Amines	0.0082	0.1970	8.21	0.0009	0.0215	7.83	0.0091	0.2185	16.04
208	Potassium Acetate	0.0082	0.1970	8.21	0.0009	0.0215	7.83	0.0091	0.2185	16.04
320	MicroC 4100	0.0000	0.0000	0.00	0.0003	0.0064	2.35	0.0003	0.0064	2.35
401	Tall-oil Pitch	0.0000	0.0000	0.00	0.0000	0.0000	0.02	0.0000	0.0000	0.02
402	Tall-oil Pitch	0.0000	0.0000	0.00	0.0000	0.0000	0.02	0.0000	0.0000	0.02
410	Mineral Oil	0.0002	0.0041	0.17	0.0007	0.0159	5.80	0.0008	0.0200	5.97
416	MR Solvent	0.0025	0.0603	2.51	0.0001	0.0013	0.46	0.0026	0.0616	2.97
306	NP-9	0.0001	0.0025	0.10	0.0000	0.0010	0.35	0.0001	0.0035	0.46
409	NP-70	0.3892	9.3403	389.18	0.0171	0.4112	150.10	0.4063	9.7516	539.28
505	Montanol	0.0010	0.0248	1.03	0.0385	0.9243	337.36	0.0395	0.9490	338.39
206	Amine Acetate	0.0037	0.0879	3.66	0.0011	0.0256	9.34	0.0047	0.1135	13.01
219	Mixed Amines	0.0037	0.0879	3.66	0.0011	0.0256	9.34	0.0047	0.1135	13.01
220	Mixed Amines	0.0037	0.0879	3.66	0.0011	0.0256	9.34	0.0047	0.1135	13.01
221	Amine Acetate	0.0037	0.0879	3.66	0.0011	0.0256	9.34	0.0047	0.1135	13.01
223	Amine Acetate	0.0037	0.0879	3.66	0.0013	0.0306	11.17	0.0049	0.1185	14.84
427	LX-100	0.0037	0.0884	3.68	0.0003	0.0064	2.33	0.0039	0.0948	6.01
425	Magnafloc 1717	0.0025	0.0611	2.54	0.0001	0.0031	1.13	0.0027	0.0642	3.68
426	Magnafloc 1717	0.0025	0.0611	2.54	0.0001	0.0034	1.25	0.0027	0.0645	3.79
716	Magnafloc 1717	0.0025	0.0611	2.54	0.0001	0.0026	0.96	0.0027	0.0637	3.51
600	Acetic Acid	0.0130	0.3126	13.02	0.0054	0.1291	47.12	0.0184	0.4417	60.15
602A	Acetic Acid	0.0130	0.3126	13.02	0.0021	0.0510	18.63	0.0152	0.3636	31.65
602B	Acetic Acid	0.0130	0.3126	13.02	0.0021	0.0510	18.63	0.0152	0.3636	31.65
702	Acetic Acid	0.0130	0.3126	13.02	0.0021	0.0510	18.63	0.0152	0.3636	31.65
703	Acetic Acid	0.0130	0.3126	13.02	0.0021	0.0510	18.63	0.0152	0.3636	31.65
411	Prosol	0.0001	0.0015	0.06	0.0000	0.0002	0.07	0.0001	0.0017	0.13
714	ACS 1422	0.0024	0.0572	2.39	0.0001	0.0031	1.13	0.0025	0.0604	3.52
715	ACS 1422	0.0024	0.0572	2.39	0.0001	0.0031	1.13	0.0025	0.0604	3.52
406	Biodiesel	0.0014	0.0332	1.38	0.0018	0.0441	16.09	0.0032	0.0772	17.47
500	EP 202	0.0020	0.0481	2.00	0.0988	2.3719	865.73	0.1008	2.4199	867.73
501	EP 202	0.0020	0.0481	2.00	0.0988	2.3719	865.73	0.1008	2.4199	867.73
502	EP 202	0.0020	0.0481	2.00	0.0988	2.3719	865.73	0.1008	2.4199	867.73
503	EP 202	0.0020	0.0481	2.00	0.0988	2.3719	865.73	0.1008	2.4199	867.73
506	EP 202	0.0020	0.0481	2.00	0.0988	2.3719	865.73	0.1008	2.4199	867.73
507	EP 202	0.0020	0.0481	2.00	0.0988	2.3719	865.73	0.1008	2.4199	867.73
302	Asphalt Emulsion	0.0000	0.0000	0.00	0.0003	0.0068	2.48	0.0003	0.0068	2.48
303	Asphalt Emulsion	0.0000	0.0000	0.00	0.0003	0.0068	2.48	0.0003	0.0068	2.48
413	Fatty Acid	0.0010	0.0240	1.00	0.0000	0.0010	0.36	0.0010	0.0250	1.36
414	Fatty Acid	0.0010	0.0240	1.00	0.0000	0.0010	0.36	0.0010	0.0250	1.36
415	Fatty Acid	0.0010	0.0240	1.00	0.0000	0.0010	0.36	0.0010	0.0250	1.36
419	Fatty Acid	0.0010	0.0240	1.00	0.0000	0.0000	0.00	0.0010	0.0240	1.00
200	Road Spray	0.0024	0.0587	2.45	0.0002	0.0053	1.93	0.0027	0.0640	4.38
201	Road Spray	0.0024	0.0587	2.45	0.0002	0.0053	1.93	0.0027	0.0640	4.38
304	Road Spray	0.0024	0.0587	2.45	0.0002	0.0045	1.64	0.0026	0.0632	4.09
420	Gen 3	0.0169	0.4053	16.89	0.0017	0.0412	15.03	0.0186	0.4464	31.92
412	Sylvablend FVM	0.0426	1.0218	42.58	0.0059	0.1405	51.27	0.0484	1.1623	93.84
417	Sylvablend FVM	0.0426	1.0218	42.58	0.0059	0.1405	51.27	0.0484	1.1623	93.84
404	FEC 03	0.1793	4.3024	179.27	0.0059	0.1405	51.27	0.1851	4.4429	230.53
418	FEC 02	0.2689	6.4536	268.90	0.0186	0.4474	163.32	0.2875	6.9011	432.22
301	Pitch Emulsion	0.0000	0.0000	0.00	0.0003	0.0082	3.00	0.0003	0.0082	3.00
403	Pitch Emulsion	0.0000	0.0000	0.00	0.0004	0.0097	3.53	0.0004	0.0097	3.53
405	Pitch Emulsion	0.0000	0.0000	0.00	0.0004	0.0097	3.53	0.0004	0.0097	3.53
407	Pitch Emulsion	0.0000	0.0000	0.00	0.0004	0.0097	3.53	0.0004	0.0097	3.53
408	Pitch Emulsion	0.0000	0.0000	0.00	0.0004	0.0097	3.53	0.0004	0.0097	3.53
	Total =	1.2	28.4e	1,269.19	0.73	17.45	6,368.90	2.00	47.91	7,4[illegible]73
	TPY =			0.63			3.18			3.73

- Tanks above the dashed line have materials that contain HAPs.
- Lb/hr working losses are basd on 1,000 hours of operation/year.

Attachment B
PD15-015
Lexycon: LexyBlend (079-00185)

Table 2: Worst-Case Individual Tank Loadout VOC Emissions

Tank #	Material	Annual Throughput (gal/yr)	Tank Capacity (gal)	Loading Rate (gpm)	Total Loading Time (minutes)	(minutes/day)	Total Daily Loading (mins/day)	Individual Tank Emissions (lb/hr)	(lb/min)	(lb/day)	(ton/yr)	20% Increase
418	FEC 02	300,000	30,000	300	200.00	1,440	200.00	9.64	1.61E-01	32.12	8.03E-02	x
404	FEC 03	200,000	10,000	300	66.67	1,440	66.67	9.64	1.61E-01	10.71	5.35E-02	x
223	Platinum 2020	23,000	12,000	250	96.00	1,440	96.00	1.43	2.38E-02	2.28	1.09E-03	x
420	Gen 3	210,000	30,000	300	200.00	1,440	200.00	0.86	1.44E-02	2.88	5.04E-03	x
503	EP 202	30,000	30,000	150	400.00	1,440	400.00	0.36	5.98E-03	2.39	5.98E-04	x
320	MicroC 4100	0	12,500	250	100.00	1,440	100.00	0.33	5.45E-03	0.55	0.00E+00	x
201	RDC-600	75,000	10,000	250	80.00	1,440	80.00	0.29	4.87E-03	0.39	7.30E-04	x
505	Montanol	40,000	8,000	150	106.67	1,440	106.67	0.14	2.31E-03	0.25	3.08E-04	x
715	ClearFloc 1423	125,000	10,000	150	133.33	1,440	133.33	0.10	1.71E-03	0.23	7.12E-04	x
426	Magnafloc 1717	133,333	12,000	75	320.00	1,440	320.00	0.05	8.55E-04	0.27	7.60E-04	x
410	Mineral Oil	1,500	8,000	30	533.33	1,440	533.33	0.12	2.06E-03	1.10	5.16E-05	x
306	NP 9 Surfactant	15,000	10,000	30	666.67	1,440	666.67	0.01	1.24E-04	0.08	3.11E-05	x
202	Glycerin	83,333	10,000	300	66.67	1,440	66.67	0.28	4.75E-03	0.32	6.60E-04	
203	Glycerin	83,333	10,000	300	66.67	1,440	66.67	0.28	4.75E-03	0.32	6.60E-04	
204	Glycerin	83,333	10,000	300	66.67	1,440	66.67	0.28	4.75E-03	0.32	6.60E-04	
205	Glycerin	83,333	10,000	300	66.67	1,440	66.67	0.28	4.75E-03	0.32	6.60E-04	
214	Glycerin	83,333	10,000	150	133.33	1,440	133.33	0.14	2.37E-03	0.32	6.60E-04	
215	Glycerin	83,333	8,000	30	533.33	1,440	533.33	0.03	4.75E-04	0.25	6.60E-04	
218	Glycerin	83,333	10,500	250	84.00	1,440	84.00	0.24	3.96E-03	0.33	6.60E-04	
429	Glycerin	83,333	12,000	250	96.00	1,440	96.00	0.24	3.96E-03	0.38	6.60E-04	
710	Glycerin	83,333	10,000	150	133.33	1,440	133.33	0.14	2.37E-03	0.32	6.60E-04	
711	Glycerin	83,333	10,000	150	133.33	1,440	133.33	0.14	2.37E-03	0.32	6.60E-04	
712	Glycerin	83,333	10,000	150	133.33	1,440	133.33	0.14	2.37E-03	0.32	6.60E-04	
713	Glycerin	83,333	10,000	150	133.33	1,440	133.33	0.14	2.37E-03	0.32	6.60E-04	
217	Propylene Glycol	40,000	10,000	250	80.00	1,440	80.00	0.55	9.18E-03	0.73	7.34E-04	
								Total =		57.80	0.15	

- Tanks below the dashed line have materials that contain HAPs.
- Tanks marked with "x" had hourly emissions increased by 20% to account for submerged loading of non-clean cargo tank trucks.
- Lb/hr rates are taken from Lexycon Spreadsheets.
- Daily Loading time based on each tank loading out its maximum capacity twice.

Table 3: Highest 8 Individual Tank Hourly Loadout Emissions

Tank #	Material		Tank Capacity (gal)	Loading Rate (gpm)	Total Loading Time (minutes)	(minutes/day)	Total Daily Loading (mins/day)	Individual Tank Emissions (lb/hr)
418	**FEC 02**		**30,000**	**300**	**100.00**	**1,440**	**100.00**	**9.64**
404	FEC 03		10,000	300	33.33	1,440	33.33	**9.64**
223	Platinum 2020		12,000	250	48.00	1,440	48.00	**1.43**
420	Gen 3		30,000	300	100.00	1,440	100.00	**0.86**
217	Propylene Glycol		10,000	250	40.00	1,440	40.00	**0.55**
503	EP 202		30,000	150	200.00	1,440	200.00	**0.36**
320	MicroC 4100		12,500	250	50.00	1,440	50.00	**0.33**
201	RDC-600		10,000	250	40.00	1,440	40.00	0.29
							Total =	23.09

Attachment C

PD15-015

Lexycon: LexyBlend (079-00185)

Table 4: Facility-Wide Emissions Summary

Source	CO			NO_x			$PM_{2.5}/PM_{10}/PM$			SO_2			VOCs			HAPs		
	(lb/hr)	(lb/day)	(ton/yr)	(lb/hr)	(lb/day)	(ton/yr)	(lb/hr)	(lb/day)	(ton/yr)	(lb/hr)	(lb/day)	(ton/yr)	(lb/hr)	(lb/day)	(ton/yr)	(lb/hr)	(lb/day)	(ton/yr)
Boilers	0.16	3.84	0.70	0.19	4.57	0.83	0.01	0.35	0.06	0.00	0.03	0.01	0.01	0.25	0.05	0.001	0.01	0.002
Storage Tanks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	47.91	3.73	0.02	0.48	0.04
Loadout	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.09	57.80	0.15	0.23	0.58	0.002
Totals	***0.16***	***3.84***	***0.70***	***0.19***	***4.57***	***0.83***	***0.01***	***0.35***	***0.06***	***0.00***	***0.03***	***0.01***	***25.10***	***105.96***	***3.93***	***0.25***	***1.07***	***0.041***