

Louisiana Environmental Action Network

Helping to make Louisiana safe for future generations



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Stakeholders Opposition to Denka's Request for Reconsideration of EPA's Toxicological Review of Chloroprene

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Wilma Subra, Technical Advisor to Louisiana Environmental Action Network, serves as the technical advisor to the Concerned Citizens of St. John on issues related to DuPont Pontchartrain Works and Denka Performance Elastomer in Reserve, St. John the Baptist Parish, Louisiana. The chemical of primary concern is Chloroprene, a likely carcinogen, that is released into the air and waters of the Mississippi River and injected underground.

Denka Performance Elastomer Purchased the DuPont Pontchartrain Works Neoprene facility in November 2015. Denka manufactures Chloroprene and uses the Chloroprene to manufacture Neoprene. Chloroprene has been released into the air of St. John the Baptist Parish since 1969, for 50 years. Denka is the largest releaser of Chloroprene into the air in the United States. Denka releases Chloroprene into the air from the Chloroprene Unit, Neoprene Unit, HCL Recovery Unit and Utilities.

The EPA's National Air Toxics Assessment (NATA) on Chloroprene was released on December 17, 2015, a month or so after Denka Purchased the DuPont Neoprene facility. NATA classified Chloroprene as a likely human carcinogen and established the long-term cancer based comparison level for 100 in 1 million cancer risk comparison level as 0.2 ug/m3 for Chloroprene.

At the time of the December 17, 2015 release, NATA estimated higher than expected levels of Chloroprene in the community of LaPlace, Louisiana (LaPlace and Reserve are adjacent to the Denka Neoprene manufacturing facility.) NATA/EPA also identified the DuPont/Denka facility as creating the greatest offsite risk of cancer of any manufacturing facility in the US.

Ambient Air Monitoring

As a result of the December 17, 2015 NATA Chloroprene release, EPA and Denka have monitored ambient air concentrations of Chloroprene in the area around the Denka facility.

EPA began ambient air monitoring for Chloroprene at six locations surrounding the Denka facility, every three days for 24 hours, on May 25, 2016, The EPA monitoring locations consist of two schools, a hospital, a residential home, a street intersection and the levee of the Mississippi River adjacent to the Denka facility.

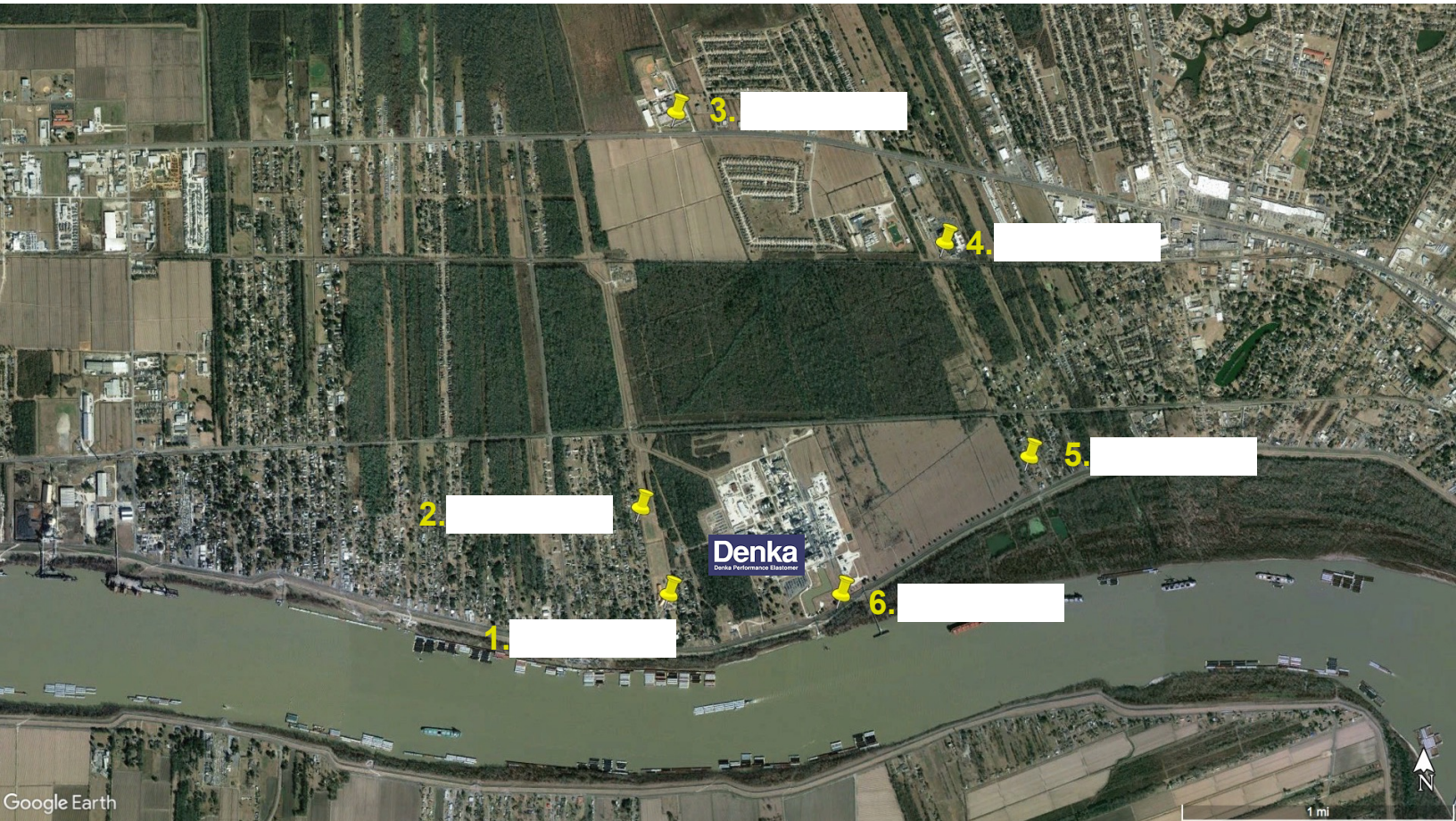
Denka began ambient air monitoring for Chloroprene, Toluene, Benzene, Ethylbenzene, Xylene and 1,3-butadiene in August 2016 at five locations, once every six days. In October 2016, a sixth monitoring location, across the Mississippi River from Denak, was added at the request of the Louisiana Department of Environmental Quality. The initial five air monitoring stations were located around the Denka facility at the Eastern Boundary of the Entergy Substation, the intersection of Hwy 44 and ICRR, the Mississippi River Levee and the River Parishes Hospital.

Copies of maps with the EPA and Denka air monitoring locations are attached.

The LA Department of Environmental Quality required Denka to install and operate four Chloroprene air emission control technologies during 2017 in an Administrative Order on Consent issued January 6, 2017.

Map of EPA Air Sampling Locations

Highest Detected Chloroprene Level by Sample Location, 2018



Chloroprene Air EPA Integrated Risk Information System Limit 0.2 ug/m³

EPA Air Sampling Locations - highest concentration of 2018

1. Fifth Ward Elementary School - 57.7 ug/m³
2. 238 Chad Baker Street - 37.4 ug/m³
3. East St John Highschool - 30.3 ug/m³
4. Oschner Hospital - 41.0 ug/m³
5. Acorn at Highway 44 - 77.3 ug/m³
6. Mississippi River Levee - 98.7 ug/m³

Map of Denka Air Sampling Locations

Highest Detected Chloroprene Level by Sample Location, 2018



DENKA Air Sampling Locations - highest concentration of 2018

1. Eastern Boundary, Entergy Substation - 11.5 ug/m³
2. Intersection of Highway 44 and Illinois Central Railroad - 41.6 ug/m³
3. Western edge of property near intersection of 31st St. and Spruce St. - 33.6 ug/m³
4. Mississippi River levee - 81.5 ug/m³
5. Southwest corner of River Parishes Hospital Parking lot - 47.1 ug/m³
6. Front lawn of St John the Baptist Courthouse in Edgard - 6.3 ug/m³

EPA Air Sample Results Covering the Sampling Period May 25, 2016 Through December 2018

Highest Levels of Chloroprene by Sampling Location by Year

Location	2016	2017	2018
Fifth Ward Elementary	66.4 ug/m ³	151 ug/m³	57.7 ug/m ³
238 Chad Baker	46.1 ug/m ³	70 ug/m³	37.4 ug/m ³
Miss. River Levee	147 ug/m³	35.8 ug/m ³	98.7 ug/m ³
Acorn and Hwy 44	153 ug/m³	17.3 ug/m ³	77.3 ug/m ³
Ochsner Hospital	66.7 ug/m ³	89.2 ug/m³	41.0 ug/m ³
East St. John Hi S.	24.9 ug/m ³	39.5 ug/m³	30.3 ug/m ³

EPA Chloroprene Air Sampling During July 2019 (ug/m³)

Date	Locations					
	1	2	3	4	5	6
7-4-19	0.551	1.44	0.646	0.74	1.46	2.34/2.24
7-10-19	0.355	3.66/3.63	1.33	ND	ND	0.249
7-16-19	ND	ND	0.595/0.530	ND	ND	ND
7-22-19	0.45	1.44	0.889/0.751	0.135	0.177	3.12
7-28-19	2.09	0.0457	0.356/0.341	4.13	0.176	0.192

1 Chad Baker
 2 Acorn & Hwy 44
 3 East St. John High School
 4 Fifth Ward Elementary School
 5 Mississippi River Levee
 6 Ochsner Hospital

EPA Chloroprene Air Sampling During August 2019 (ug/m3)

Date	Locations					
	1	2	3	4	5	6
8-3-19	ND	0.707	0.0559	0.183	0.635/0.638	1.55
8-9-19	ND	1.69	ND	ND	0.0236	1.33/1.33
8-15-19	0.185	0.315	ND	0.559	2.09/1.99	ND
8-21-19	0.464`	0.0319	0.0729/0.0733	0.0319	ND	0.548
8-27-19	ND	0.243	ND	ND	0.0432	0.363/0.704

- | | |
|-----------------------------|--------------------------------|
| 1 Chad Baker | 4 Fifth Ward Elementary School |
| 2 Acorn & Hwy 44 | 5 Mississippi River Levee |
| 3 East St. John High School | 6 Ochsner Hospital |

In general the Chloroprene toxic air concentrations detected by EPA and Denka in the air off the Denka facility demonstrated that Chloroprene has moved off site and crosses the fence lines in all directions and is continuing to move off site and negatively impact the health and quality of life of community members living around the facility and throughout the Parish (county).

During each sampling event conducted by EPA and Denka there is always detectable levels of Chloroprene in the ambient air. The air blows the Chloroprene into the community in the downwind direction where it is detected by the ambient stations down wind. The upwind monitoring locations detect lower concentrations of Chloroprene or none detect. When the wind is calm, Chloroprene is released by the Denka facility and crosses the fence line in all directions as it spreads out around the facility and into the residential, school and hospital environments and negatively impacts community members, students and teachers, patients and medical staff.

The historical and most recent data continues to show that people in the community continue to be exposed to Chloroprene in the ambient air above the 0.2 ug/m³ concentration.

As a result of Chloroprene air emission control technologies installed and operated by Denka, the Chloroprene ambient concentrations are trending downward, but have not attained 0.2 ug/m³ in the ambient air.

Toluene is a Teratogen

Toluene is the second largest quantity chemical released into the air by the Deka facility. Toluene is a teratogen in animals and may be a teratogen in humans. A teratogen causes malformation of the embryo. Toluene may damage the developing fetus and may cause liver, kidney and brain damage. Toluene irritates the skin, eyes, nose and throat, Toluene may caused coughing, wheezing, headaches, lightheadedness and dizziness. Toluene can affect the nervous system.

Toluene in Ambient Air Increasing in Detection Frequency Around the Denka Facility

In January through March 2018, Toluene was detected by Denka in the air at one to eight Denka monitoring events and locations. January – 8, February – 1 and March – 5. Beginning in April 2018 and continuing through September 2019 (latest data), the number of monitoring events and locations detecting Toluene gradually increased through the teens and lower twenties to thirty seven locations in September 2019.

The highest concentration of Toluene in 2018 and 2019 occurred in January 2019 at the Edgard station, across the Mississippi River from the Denka facility, 38.4 ug/m³.

During 2018, the highest concentrations of Toluene occurred on a monthly basis at the Levee location during five months, Entergy Substation, Western Edge of the Denka facility and Edgars during two months each and the Hospital during one month.

Toluene Air Sampling by Denka

Month	Sample Events	# of Detects	Highest Con.	Location
2018				
January	6	8	7 ug/m3	Levee
February	6	1	3.7 ug/m3	Western E.
March	6	5	6.8 ug/m3	Levee
April	8	13	10.3 ug/m3	Levee
May	6	5	6.8 ug/m3	Entergy
June	7	19	4.3 ug/m3	Levee
July	6	11	5.7 ug/m3	Edgard
August	7	16	15.1 ug/m3	Western E.
September	6	18	9.5 ug/m3	Entergy
October	8	18	21.5 ug/m3	Levee
November	7	10	5.5 ug/m3	Hospital
December	7	14	15.8 ug/m3	Edgard
2019				
January	7	14	38.4 ug/m3	Edgard
February	6	5	7.6 ug/m3	Entergy
March	6	11	8 ug/m3	Levee
April	7	18	9.7 ug/m3	Edgard
May	7	21	25.3 ug/m3	Hospital
June	6	25	18.8 ug/m3	Hospital
July	7	12	9.8 ug/m3	Edgard
August	6	26	12.6 ug/m3	Entergy
September	7	37	12.9 ug/m3	Western E.

During the first nine months of 2019, the highest concentrations of Toluene occurred on a monthly basis at Edgard during three months, Entergy Substation during two months, Hospital during two months and Levee and Western Edge during one month each.

Edgard Monitoring Station

During 2018, Denka performed 80 air monitoring events. During 20 of the 80 air monitoring events (25 %), Toluene was detected at the Edgar location, across the Mississippi River from the Denka facility, and during two of the twelve months of 2018, the Edgard air monitoring location had the highest concentrations of Toluene (12/5/18 – 15.8 ug/m3 and 7/23/18 – 5.7 ug/m3).

During the first nine months of 2019, Denka performed 59 air monitoring events. During 27 of the 59 air monitoring events (45.8%) , Toluene was detected at the Edgard air monitoring locations. During three of the nine months of air sampling in 2019, the Edgard air monitoring location had the highest Toluene concentrations (7/15/19 - 9.8 ug/m3, 1/21/19 - 38.4 ug/m3 and 4/5/19 - 9.7 ug/m3). The January 21, 2019 sampling event at Edgard recorded the highest Toluene concentration, 38.4 ug/m3, throughout 2018 and 2019.

2019 Toluene Air Monitoring by Denka – Detections of Toluene

59 air sampling events

Location	Toluene Detected	Percent of Toluene Detection
Miss. R. Levee	31 sampling events	52.5%
Hwy 44 & ICRR	31 sampling events	52.5%
Western Edge	28 sampling events	47.5%
Edgard	27 sampling events	45.8%
Entergy Sub.	27 sampling events	45.8%
Hospital	25 sampling events	42.4%

The Mississippi River Levee had the most detectable levels of Toluene in 2019, 31 of 52 sampling events. The highest Toluene concentration was detected in March 2019, 8 ug/m³.

Hwy 44 & ICRR location also had the most detectable levels of Toluene in 2019, 31 of 52 sampling events. The highest Toluene concentration was detected in June 2019, 11.3 ug/m³.

The Western Edge of the Denka facility ranked third in the number of Toluene detects in 2019 and the highest concentration of Toluene was 12.9 ug/m³ detected in September 2019.

The Edgard location ranked fourth with 27 of 52 sampling events having detectable levels of Toluene. Edgard had the highest Toluene concentration during all of 2018 and 2019, 38.5 ug/m³ in January 2019.

The Entergy Substation recorded 27 detections of Toluene in 2019, with a highest concentration of 12.6 ug/m³ in August 2019.

The Hospital monitoring location has 25 detectable sampling events with detectable concentrations of Toluene. The highest Toluene concentration at the Hospital was 25.3 ug/m³ in May 2019.

Of Note

The increase in the number of monitoring locations with detectable Toluene air concentrations beginning in early 2018 through September 2019 demonstrates potentially harmful exposure effects that have increased.

The areas where Toluene increased in incidents of being detected are located in the residential areas, the locations of schools and hospitals in the areas surrounding the Denka facility and are exposing a large portion of the population in Reserve/LaPlace.

Cumulative Impacts

The cumulative impacts on community members being exposed to Chloroprene, increasing incidents of exposure to Toluene and the 26 additional chemicals being released into the air by the Denka and DuPont facilities (such as Aniline, Benzene, 1,3-Butadiene, Ammonia, Hydrochloric Acid and many other toxic and cancer causing chemicals) are potentially harmful to the public health of community members living, working, worshipping and attending school around the Denka/DuPont facility.

Chloroprene Air Modeling Report, 0.2 ug/m3

On October 7, 2016, Denka submitted the modeling results of Chloroprene 0.2 ug/m3 on an annual basis to DEQ. The modeling covered the period 2011 through 2015. There are no other sources of Chloroprene air emissions within the Area of Inclusion (3.2 km).

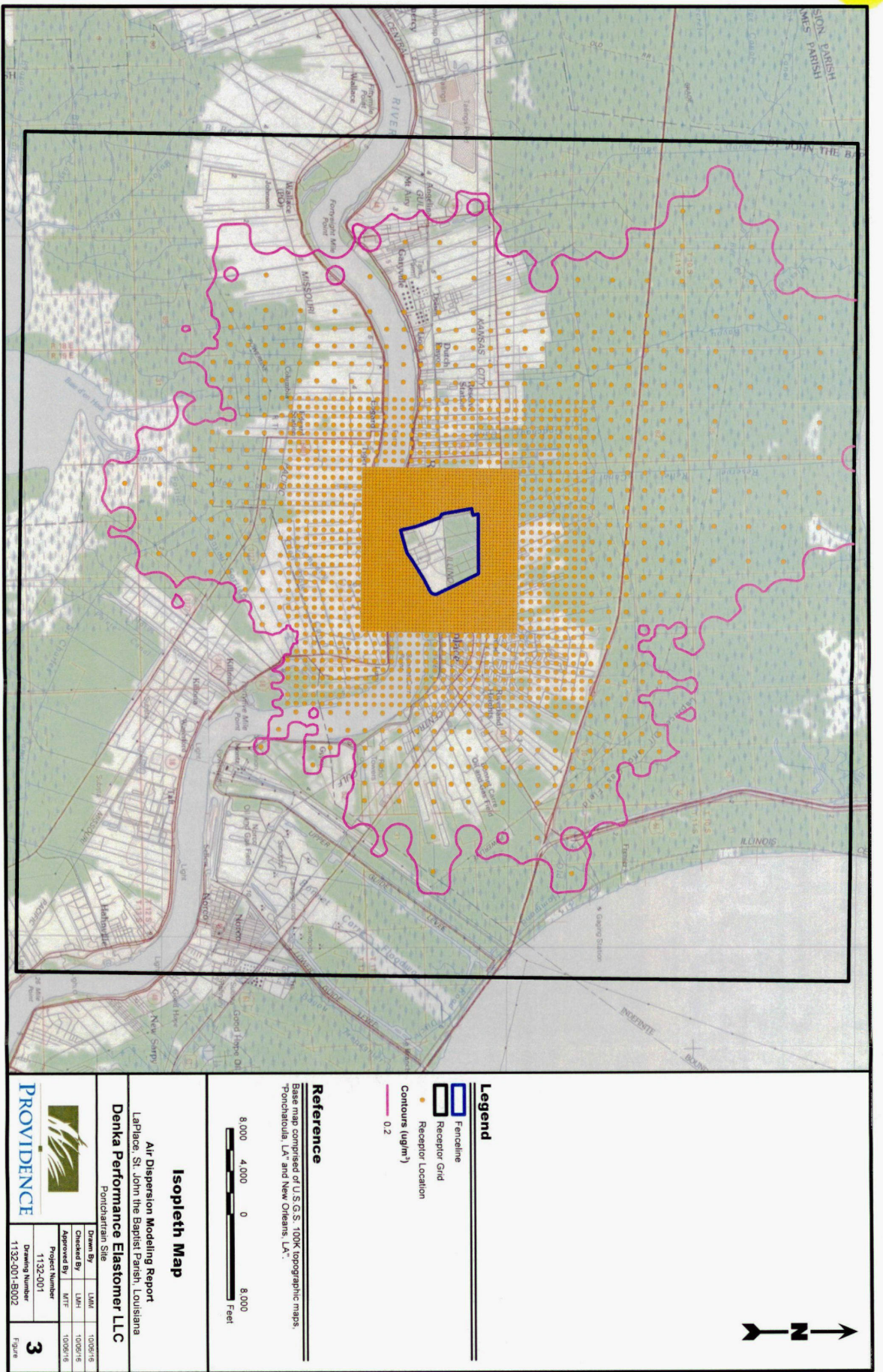
Summary of Refined Modeling Results (2011-2015)

Based on the refined modeling analysis for years 2011 through 2015, the off-property impacts were greater than the comparison guideline of 0.2 ug/m3 for Chloroprene.

The attached Figure 3 presents the isopleth of 0.2 ug/m3 based on permitted emission rates for Chloroprene.

The area exceeding the 0.2 ug/m3 concentration extends:

- upriver beyond Garyville (including Garyville)
- downriver to the spillway levee
- across the Mississippi River on the West bank including Edgard, Tigerville, Gold Mine Plantation and Lucy
- and to the north including Airline Highway and north of Interstate 10.



Isopleth map Figure 3

LA DEQ EDMS Agency Interest Number 199310

Document dated October 7, 2016

Document Number 10400285 page 22

The attached Figure 4 presents dispersion modeling for Chloroprene based on 2011 actual pollutant emission rates and met data from 2011.

The area exceeding the 0.2 ug/m3 standard extends:

- upriver beyond Garyville (including Garyville)
- downriver over the spillway levee
- west bank across the Mississippi River from Garyville, LaPlace, to the spillway
- north of the facility including Airline Highway and north of Interstate 10.

Chloroprene Cancer Risk - Based on NATA Data

St. John the Baptist Census Tracts	Risk per 1 Million Individuals
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708 Includes Most of Denka Facility	776.8
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709 Includes Part of Denka Facility	426.6
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705 North of 708 and 709	327
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707 Upriver from 708	235.5
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700	209.4
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704	164.8
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703	142.8
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702	88.9
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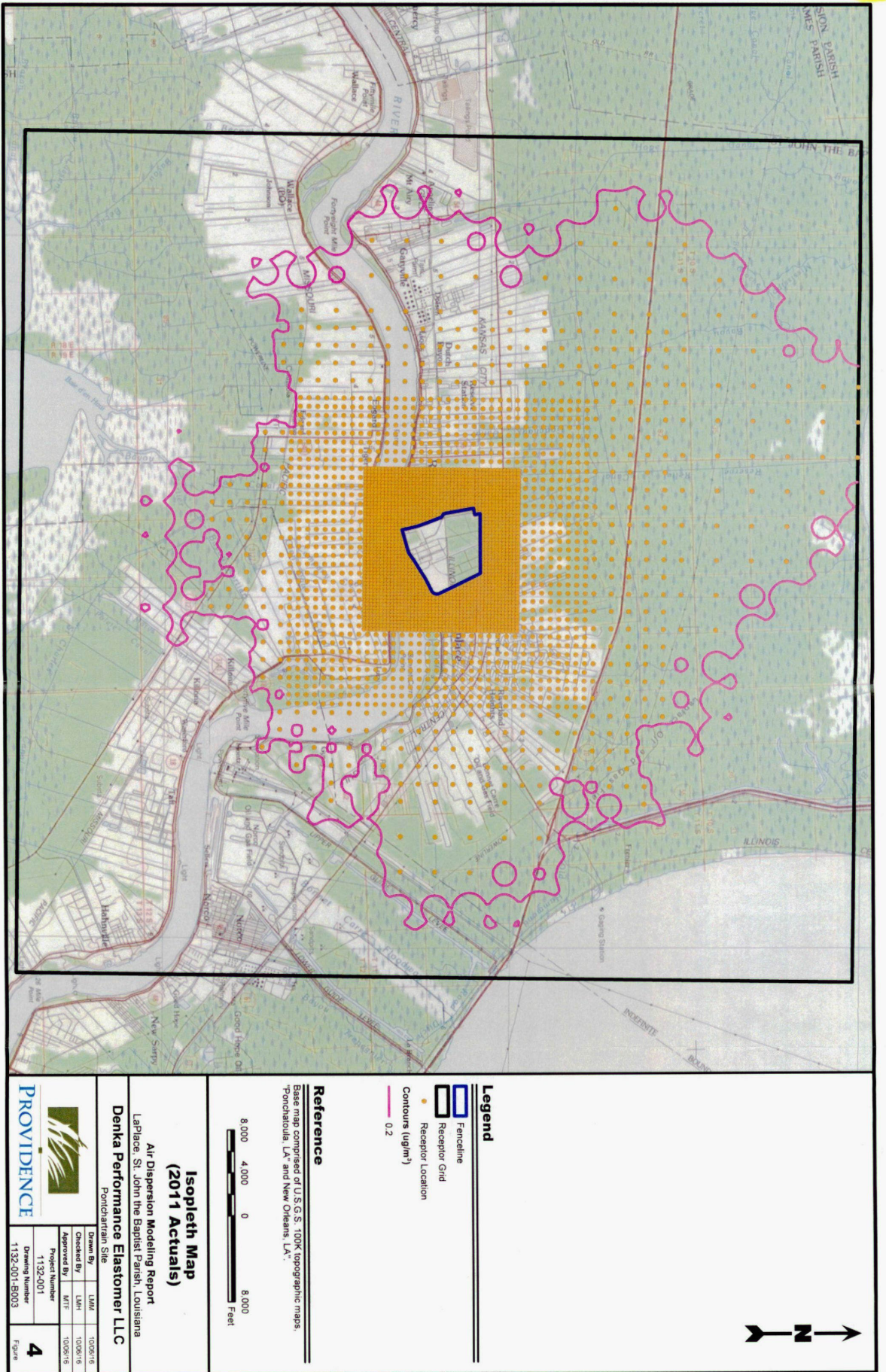
701	60.7
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706 Garyville	51.7
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708 Census Tract consist of most of Denka, middle of Mississippi River, north to above the Illinois Central Rail Line, upriver to East 12th Street.

709 Census Tract consist of part of Denka, downriver to Mahogany Street, along and above the Illinois Central Rail Line.

705 Census Tract North of Census Tracts 708 and 709



Isopleth map Figure 4

LA DEQ EDMS Agency Interest Number 199310

Document dated October 7, 2016

Document Number 1040285 pg 24

NATA and EPA determined that Chloroprene was being emitted into the air of St. John the Baptist Parish at concentrations that gave the census tracts in St. John the Baptist Parish the highest risk of cancer from Chloroprene air pollution in the United States.

In most of the United States, the number of cancer risk due to Chloroprene were zero to one per million individual, with a national average of 0.968 individuals per million individuals. In St. John the Baptist Parish, one census tract (708) was 800 times the national average for cancer risk associated with Chloroprene.

See the census tract map of St. John the Baptist Parish census tracts with the number of cancer risk due to Chloroprene on the next page .

All documents and data referenced in this document are available on Louisiana Electronic Data Management System, Agency Interest Number 199310.

The Chloroprene ambient air monitoring data collected by EPA and Denka around the Denka facility in St. John the Baptist Parish documents that Chloroprene and Toluene are crossing the fence line of the Denka facility in all directions and negatively impacting the ambient air quality. As a result of the Chloroprene and Toluene chemicals contaminating the ambient air, negative health impacts are continuing to occur and the quality of life of community members is being negatively impacted.

EPA must consider all of the information presented today, as well as the negative impacts being experienced by community members, as EPA makes its decisions relative to continuing to allow excess quantities of Chloroprene to be released into the ambient air in the areas surrounding the Denka facility and Denka's Request for Reconsideration of EPA's Toxicological Review of Chloroprene

In addition, it is requested that EPA continue to monitor the ambient air quality for Chloroprene in the area surrounding the Denka facility.



Cancer risk per 1 million individuals by census tract from Chloroprene air emissions.

St John the Baptist Census Tract	Risk per 1 million individuals
708	776.8
709	426.6
705	327
707	235.5
700	209.4
704	164.8
703	142.8
702	88.9
701	60.7
706	51.7