2015

HAZARDOUS COMMODITY FLOW STUDY FOR CAMBRIA COUNTY, PENNSYLVANIA

Performed by the Cambria County Department of Emergency Services

Funding provided through the U.S. DOT Hazardous Material Emergency Preparedness (HMEP) Grant

2015 HAZARDOUS COMMODITY FLOW STUDY
FOR CAMBRIA COUNTY, PENNSYLVANIA

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2015 HAZARDOUS COMMODITY FLOW STUDY

STATEMENT OF PURPOSE

In late 2014 and through September 2015, the Cambria County Local Emergency Planning Committee (LEPC), in cooperation with the Cambria County Department of Emergency Services, again participated in the Hazardous Material Emergency Preparedness (HMEP) Grant program by conducting an extensive study of hazardous material commodities as transported by highway, railroad and pipeline in and through Cambria County, Pennsylvania.

Funding for this year's hazardous commodity flow study was provided through a federal fiscal year 2015 Hazardous Materials Emergency Preparedness (HMEP) Planning Grant funded by the U.S. Department of Transportation (U.S. DOT).

The purpose of this continuing study is to identify and document the type of and frequency that hazardous materials are transported within Cambria County.

Railroad on-site surveys were conducted along the east/west mainline tracks of the Norfolk Southern railroad in Cresson Borough, Gallitzin Borough and Washington Township. These tracks extend through Cambria County from the Indiana County border in the west to the Blair County border in the east. Less extensive surveys were conducted along a branch line of the CSX railroad in the City of Johnstown. Numerous other municipalities that do not have railroad tracks directly within their boundaries are prone to the effects of a major railroad incident because of their geographical proximity to railroads.

As has been past practice, highway studies were concentrated on both east and westbound traffic on the major routes within Cambria County with the primary focus this year being Routes 22, 219 and 422. Current and past surveys have shown that Route 22 is by far the most heavily traveled highway within Cambria County.

Although, Route 22 does not directly carry products into the City of Johnstown and the Richland Township areas, the majority of highways that do, originate from the Route 22 east-west corridor and the Route 219 north-south corridor. New 4-lane re-construction of Route 22 has opened up additional east-west commerce and has increased commercial highway transportation through Cambria County.

This year's study represents the 20th consecutive year in which Cambria County Emergency Management and the Department of Emergency Services has participated in the hazardous commodity flow study.

STATEMENT OF PURPOSE – continued

As in past surveys, the information gained from the 2015 hazardous commodity flow study will be used to assist in determining both the response needs and to identify concerns regarding the Cambria County hazardous materials response program.

All data collected from past commodity flow studies has been of great value in regards to transportation issues incorporated into the Cambria County Hazard Vulnerability Analysis (HVA). Survey information has also been used to formulate transportation vulnerability and will be incorporated into the Cambria County All-Hazards Mitigation Plan during future updates.

The following pages identify hazards and trends from the information obtained from this year's study. A history of the most frequent hazardous commodities, as identified from past surveys, is also included for reference and as a historical perspective.

Through the continued efforts of the Cambria County Department of Emergency Services and the Cambria County Local Emergency Planning Committee, projects such as the hazardous commodity flow study, will continue to afford Cambria County an opportunity to prepare for and respond to incidents involving hazardous materials.

October 22, 2015

Ronald J. Springer, Executive Director — Date
Cambria County Department of Emergency Services

HISTORY OF HIGHWAY HAZARDOUS COMMODITY SURVEYS

The top five hazardous commodities transported over Cambria County **highways**, as taken from commodity flow studies conducted in eighteen of the past nineteen years are as follows.

NOTE: From 2011 to date, the top ten highway commodities are listed to better track hazardous products in highway transportation from year-to-year.

1996

1. Gasoline (ID # 1203)
2. Municipal waste–solid
3. Flammable-3
4. Propane (ID # 1075)
5. Corrosive-8

1997

1. Gasoline (ID # 1203)
2. Municipal waste – solid
3. Corrosive-8
4. Flammable liquids, n.o.s.
5. Flammable-3

1998

1. Gasoline (ID # 1203)
2. Municipal waste-solid
3. Flammable-3
4. Corrosive-8
5. Propane (ID # 1075)

1999

1. Gasoline (ID # 1203)
2. Municipal waste – solid
3. Dangerous
4. Non-Flammable Gas-2
5. Flammable-3

2000

No highway survey was conducted

2001

1. Gasoline (ID # 1203)
2. Kerosene (ID # 1223)
3. Corrosive-8
4. Propane (ID # 1075)
5. Non-Flammable Gas-2

2002

1. Gasoline (ID # 1203)
2. Propane (ID # 1075)
3. Corrosive-8
4. Dangerous
5. Non-Flammable Gas-2
   Kerosene (ID # 1223)

2003

1. Gasoline (ID # 1203)
2. Corrosive-8
3. Flammable-3
4. Propane (ID # 1075)
5. Dangerous

2004

1. Gasoline (ID # 1203)
2. Propane (ID # 1075)
3. Corrosive-8
4. Non-Flammable Gas-2
5. Flammable Gas-2

2005

1. Gasoline (ID # 1203)
2. Propane (ID # 1075)
3. Corrosive-8
4. Kerosene (ID # 1223)
5. Flammable Liquid-3

History of Highway Hazardous Commodity Surveys - continued

2006

1.	Gasoline	(ID # 1203)
2.	Flammable Gas-2	
3.	Corrosive-8	
4.	Propane (LPG)	(ID # 1075)
5.	Elevated temp. liquid, n.o.s.	(ID # 3257)

2007

1.	Gasoline	(ID # 1203)
2.	Flammable Gas-2	
3.	Non-Flammable Gas-2	
4.	Corrosive-8	
5.	Elevated. temp. liquid, n.o.s	(ID # 3257)

2008

1.	Gasoline	(ID # 1203)
2.	Flammable Gas-2	
3.	Non-Flammable Gas-2	
4.	Propane (LPG)	(ID # 1075)
5.	Kerosene	(ID # 1223)

2009

1.	Gasoline	(ID # 1203)
2.	Flammable Gas-2 [Acetylene]	(ID # 1001]
3.	Non-Flammable-2 [Oxygen] (ID # 1072)	(ID # 1073)
4.	Propane	(ID # 1075)
5.	Corrosive-8	

2010

1.	Gasoline	(ID # 1203)
2.	Non-Flammable Gas	
3.	Flammable Gas-2	
4.	Propane (LPG)	(ID # 1075)
5	Corrosive-8	
	Kerosene	(ID # 1223)
	Diesel fuel	(ID # 1223)

2011

1.	Gasoline	(ID # 1203)
2.	Non-Flammable Gas-2	
3.	Flammable Gas-2	
4.	Propane (LPG)	(ID # 1075)
5.	Elev. temp. liquid,nos	(ID # 3257)
6.	Oxygen-2	
7.	Corrosive-8	
8.	Flammable liquid, nos	(ID # 1993)
9.	Kerosene	(ID # 1223)
	Diesel fuel	(ID # 1223)
10.	Flammable-3	

2012

1.	Gasoline	(ID # 1203)
2.	Propane (LPG)	(ID # 1075)
3.	Non-Flammable Gas	
4.	Flammable Gas-2	
	Corrosive-8	
6.	Flammable liq., n.o.s.	(ID # 1993)
7.	Flammable-3	
8.	Elev. temp. liq.,n.o.s.	(ID # 3257)
9.	Kerosene	(ID # 1223)
	Diesel fuel	(ID # 1223)

2013

1.	Gasoline	(ID # 1203)
2.	Propane (LPG)	(ID # 1075)
3.	Non-Flammable Gas-2	
4.	Flammable Gas-2	
5.	Corrosive-8	
6.	Flammable liq., n.o.s.	(ID # 1993)
7.	Flammable-3	
8.	Kerosene	(ID # 1223)
9.	Elev. temp. liq., n.o.s.	(ID # 3257)
10.	Nitrogen, refrig. liq.	(ID # 1977)
	Alcohols, n.o.s.	(ID # 1987)

History of Highway Hazardous Commodity Surveys - continued

	2014	
1.	Gasoline	(ID # 1203)
2.	Propane (LPG)	(ID # 1075)
3.	Non-Flammable Gas-2	
4.	Flammable Gas-2	
5.	Corrosive-8	
6.	Flammable liquid, n.o.s	(ID # 1993)
7.	Flammable-3	
8.	Kerosene	(ID # 1223)
9.	Alcohols, n.o.s.	(ID # 1987)
10.	Elev. temp. liq., n.o.s.	(ID # 3257)

2015 HIGHWAY HAZARDOUS COMMODITY FLOW STUDY

STATISTICAL REPORT FROM ON-SITE HIGHWAY SURVEYS

Explosives-1.2	**(1)**
Explosives-1.3	**(1)**
Explosives-1.4	**(8)**
Explosives-1.5	**(1)**
Flammable Gas-2	**(62)**
Non-Flammable Gas-2	**(80)**
Oxygen-2	**(9)**
Flammable-3	**(60)**
Flammable Solid-4	**(1)**
Dangerous When Wet-4	**(4)**
Spontaneously Combustible-4	**(2)**
Oxidizer-5.1	**(5)**
Organic Peroxide-5.2	**(1)**
Infectious Substance-6.2	**(1)**
Poison-6	**(2)**
Toxic-6	**(3)**
Corrosive-8	**(70)**
Class-9	**(2)**
Dangerous	**(25)**
Biohazard	**(3)**
1005 Ammonia, anhydrous	**(3)**
1017 Chlorine	**(1)**
1046 Helium	**(2)**
1073 Oxygen, refrigerated liquid	**(16)**
1075 Liquefied petroleum gas (LPG)	**(99)**
1203 Gasoline	**(1,120)**
1223 Kerosene	**(22)**
1230 Methyl alcohol	**(2)**
1263 Paint (flammable)	**(2)**
1268 Petroleum products, n.o.s.	**(1)**
1301 Vinyl acetate, stabilized	**(1)**
1422 Potassium sodium alloys	**(1)**
1760 Corrosive liquid, n.o.s.	**(8)**
1765 Dichloroacetyl chloride	**(1)**
1789 Hydrochloric acid	**(12)**

2015 HIGHWAY ON-SITE SURVEY - continued

1790	**Hydrofluoric acid**	**(1)**
1791	**Hypochlorite solution**	**(3)**
1814	**Caustic potash, solution**	**(1)**
1824	**Caustic soda, solution**	**(9)**
1826	**Nitrating acid mixture**	**(1)**
1830	**Sulfuric acid**	**(3)**
1832	**Sulfuric acid, spent**	**(1)**
1863	**Fuel, aviation**	**(3)**
1866	**Resin solution**	**(9)**
1915	**Cyclohexanone**	**(1)**
1963	**Helium, refrigerated liquid**	**(1)**
1966	**Hydrogen, refrigerated liquid**	**(2)**
1977	**Nitrogen, refrigerated liquid**	**(17)**
1986	**Alcohols, flammable, toxic, n.o.s.**	**(1)**
1987	**Alcohols, n.o.s**	**(24)**
1993	**Flammable liquid, n.o.s.**	**(65)**
2014	**Hydrogen peroxide**	**(2)**
2031	**Nitric acid, other than red fuming**	**(1)**
2055	**Styrene monomer, stabilized**	**(1)**
2067	**Ammonium nitrate, fertilizer**	**(2)**
2078	**Toluene, diisocyanate**	**(10)**
2187	**Carbon dioxide, refrigerated liquid**	**(3)**
2212	**Asbestos**	**(1)**
2312	**Phenol, molten**	**(1)**
2564	**Trichloroacetic acid, solution**	**(1)**
2672	**Ammonium hydroxide**	**(4)**
2693	**Bisulfites, aqueous solution, n.o.s.**	**(1)**
2754	**N-Ethyltoluidines**	**(1)**
2920	**Corrosive liquid, flammable, n.o.s.**	**(2)**
2988	**Chlorosilanes, n.o.s.**	**(1)**
3077	**Other regulated substances, solid, n.o.s.**	**(12)**
3082	**Other regulated substances, liquid, n.o.s.**	**(10)**
3145	**Alkyl phenols, liquid, n.o.s.**	**(1)**
3159	**Refrigerant gas R-134**	**(1)**
3170	**Aluminum dross**	**(1)**

2015 HIGHWAY ON-SITE SURVEY - continued

3256	**Elevated temp. liquid, above FP, n.o.s.**	**(5)**
3257	**Elevated temp. liquid, below FP, n.o.s.**	**(39)**
3264	**Corrosive liquid, acidic, inorganic, n.o.s.**	**(1)**
3265	**Corrosive liquid, acidic, organic, n.o.s.**	**(1)**
3267	**Corrosive liquid, base, organic, n.o.s.**	**(3)**
3291	**Medical waste, n.o.s.**	**(1)**
3375	**Ammonium nitrate emulsion**	**(1)**
3492	**Toxic by inhalation liq., corr., flam., n.o.s.**	**(1)**

2015 HIGHWAY HAZARDOUS COMMODITY FLOW STUDY

TOP (15) – 2015 HIGHWAY HAZARDOUS COMMODITIES

1.	**Gasoline**	**(# 1203)**	**(1,120)**
2.	**LPG**	**(# 1075)**	**(99)**
3.	**Non-Flammable Gas-2**	**(Placarded)**	**(80)**
4.	**Corrosive-8**	**(Placarded)**	**(70)**
5.	**Flammable liquid, n.o.s.**	**(# 1993)**	**(65)**
6.	**Flammable Gas-2**	**(Placarded)**	**(62)**
7.	**Flammable-3**	**(Placarded)**	**(60)**
8.	**Elevated temperature liquid, below FP**	**(# 3257)**	**(39)**
9.	**Dangerous**	**(Placarded)**	**(25)**
10.	**Alcohols, n.o.s**	**(# 1987)**	**(24)**
11.	**Kerosene**	**(# 1223)**	**(25)**
12.	**Nitrogen, refrigerated liquid**	**(# 1977)**	**(17)**
13.	**Oxygen, refrigerated liquid**	**(# 1073)**	**(16)**
14.	**Hydrochloric acid**	**(# 1789)**	**(12)**
	Other regulated substance, solid, n.o.s.	**(# 3077)**	**(12)**
16.	**Toluene, diisocyanate**	**(# 2078)**	**(10)**
	Other regulated substance, liquid, n.o.s.	**(# 3082)**	**(10)**
18.	**Oxygen-2**	**(Placarded)**	**(9)**
	Caustic soda, solution	**(# 1824)**	**(9)**
	Resin solution	**(# 1866)**	**(9)**

2015 HIGHWAY COMMODITY TRENDS / OBSERVATIONS:

1. Gasoline (# 1203) accounts for nearly 2/3 of all hazardous commodities identified through the highway surveys.

2. The general hazard class ranking of products transported by highway are:

1. **Flammable liquids (Class 3)**
2. **Flammable gases (Class 2)**
3. **Non-Flammable gases (Class 2)**
4. **Corrosives (Class 8)**

3. The vast majority of highway vehicles placards identified as Flammable Gas-2 and Non-Flammable Gas-2 are welding supply vehicles transporting oxygen (# 1072) and acetylene (# 1001) respectively.

4. Elevated temperature liquids (# 3257) are generally identified as asphalt and are highly seasonable due to road construction projects from spring through fall.

5. The increased numbers of highway vehicles transporting hydrochloric acid (# 1789) and caustic soda solution (# 1824) can once again be attributed to the fracking process used in the Marcellus and deep-well industry.

HISTORY OF RAILROAD HAZARDOUS COMMODITY SURVEYS

The top fifteen hazardous commodities (by specific product – not hazard class) transported **by rail** in Cambria County, by Conrail and now Norfolk Southern, as taken from commodity flow studies conducted over the past nineteen years are:

1995

1.	# 1086	Vinyl chloride
2.	# 1075	LPG
3.	# 9077	Adipic acid
4.	# 2280	Hexamethylenediamine
5.	# 2055	Styrene monomer, inhibited
6.	# 1247	Methyl methacrylate monomer
7.	# 1969	Isobutane
8.	# 1255	Naphtha, petroleum
9.	# 1917	Ethyl acrylate, inhibited
10.	# 1013	Carbon dioxide, compressed
11.	# 1301	Vinyl acetate
12.	# 1017	Chlorine
13.	# 1823	Sodium hydroxide, solid
14.	# 1954	Compressed gas, flam., nos.
15.	# 1238	Methyl chloroformate

1996

1	.# 1086	Vinyl chloride
2.	# 1075	LPG
3.	# 3082	Other reg. substances, liquid
4.	# 1017	Chlorine
5.	# 1993	Flammable liquid, n.o.s.
6.	# 3077	Other reg. substances, solid
7.	# 2055	Styrene monomer, inhibited
8.	# 3287	Toxic liquid, inorganic, n.o.s.
9.	# 1789	Hydrochloric acid
10.	# 1824	Caustic soda, solution
	# 2582	Ferric chloride, solution
	# 2280	Hexamethylenediamine
13.	# 2348	Butyl acrylate
	# 1301	Vinyl acetate
15.	Multiple products tied for 15th	

1997

1.	# 1086	Vinyl chloride
2.	# 1075	LPG
3.	# 3082	Other reg. substance, liquid
4.	# 1017	Chlorine
5.	# 2055	Styrene monomer, inhibited
6.	# 3077	Other reg. substances, solid
	# 3257	Elevated temp. liquid, n.o.s.
8.	# 3287	Poison liquid, inorganic, n.o.s.
9.	# 1268	Petroleum products, n.o.s.
10.	# 2280	Hexamethylenediamine, solid
	# 1993	Flammable liquids, n.o.s.
12.	# 1917	Ethyl acrylate, inhibited
13.	# 1247	Methyl methacrylate monomer
14.	# 1090	Acetone
	# 2312	Phenol, molten

1998

1.	# 1086	Vinyl chloride
2.	# 3077	Other reg. substances, solid
3.	# 1075	LPG
4.	# 3082	Other reg. substances, liquid
	# 1017	Chlorine
6.	# 1993	Flammable liquids, n.o.s.
7.	# 1090	Acetone
8.	# 1301	Vinyl acetate
9.	# 2055	Styrene monomer, inhibited
10.	# 3287	Toxic liquid, inorganic, n.o.s.
11.	# 2031	Nitric acid,other than red fuming
12.	# 1824	Caustic soda, solution
13.	# 2280	Hexamethylenediamine, solid
14.	# 1005	Ammonia, anhydrous
	# 3257	Elevated temp. liquid, n.o.s.
	# 2831	1,1,1-Trichloroethane
	# 1052	Hydrogen fluoride, anhydrous
	# 1040	Ethylene oxide

History of Railroad Hazardous Commodity Surveys - continued

1999

1.	# 1075	LPG
2.	# 1086	Vinyl chloride
3.	# 3257	Elevated temp.liquid, n.o.s.
	# 3077	Other reg. substances, solid
5.	# 1017	Chlorine
	# 2280	Hexamethylenediamine, solid
7.	# 3082	Other reg. substances, liquid
8.	# 1993	Flammable liquids, n.o.s.
9.	# 2448	Sulfur, molten
10.	# 1005	Ammonia, anhydrous
	# 1824	Caustic soda, solution
	# 1170	Ethanol, solution
13.	# 1301	Vinyl acetate
14.	# 3287	Toxic liquid, inorganic, n.o.s.
	# 1010	Butadienes, inhibited

2000

1.	# 1075	LPG
2.	# 3077	Other reg. substances, solid
3.	# 3257	Elevated temp. liquid, n.o.s.
4.	# 1086	Vinyl chloride
5.	# 1017	Chlorine
6.	# 1824	Caustic soda, solution
7.	# 2448	Sulfur, molten
8.	# 2280	Hexamethylenediamine, solid
9.	# 2055	Styrene monomer, inhibited
10.	# 1814	Caustic potash, solution
11.	# 1993	Flammable liquid, n.o.s.
12.	# 1268	Petroleum products, n.o.s.
	# 3082	Other reg. substances, liquid
14.	# 1005	Ammonia, anhydrous
	# 1301	Vinyl acetate

2001

1.	# 1075	LPG
2.	# 3257	Elevated temp. liquid, n.o.s.
3.	# 2448	Sulfur, molten
4.	# 1086	Vinyl chloride
5.	# 1824	Caustic soda, solution
6.	# 3077	Other reg. substances, solid
7.	# 1017	Chlorine
8.	# 1090	Acetone
	# 1993	Flammable liquid, n.o.s.
10.	# 2280	Hexamethylenediamine, solid
11.	# 1005	Anhydrous ammonia
12.	# 2055	Styrene monomer, inhibited
13.	# 2187	Carbon dioxide, refrig. liquid
	# 3082	Other reg. substances, liquid
15.	# 1247	Methyl methacrylate monomer
	# 1805	Phosphoric acid

2002

1.	# 1075	LPG
2.	# 1086	Vinyl chloride
3.	# 3257	Elevated temp. liquid, n.o.s.
4.	# 3077	Other reg. substances, solid
5.	# 3082	Other reg. substances, liquid
6.	# 1918	Isopropylbenzene
7.	# 2582	Ferric chloride, solution
8.	# 3287	Poisonous liquid,inorganic,n.o.s.
9.	# 1824	Caustic soda, solution
10.	# 1832	Sulfuric acid, spent
11.	# 2055	Styrene monomer, inhibited
	# 2280	Hexamethylenediamine, solid
13.	# 2448	Sulfur, molten
14.	# 1090	Acetone
15.	# 1247	Methyl methacrylate monomer

2003 – Most Frequent by Tank Car

1.	# 1086	Vinyl chloride
2.	# 3082	Other reg. substances, liquid
3.	# 1075	LPG
	# 1824	Caustic soda, solution
	# 1830	Sulfuric acid
	# 2280	Hexamethylenediamine, solid
7.	# 1301	Vinyl acetate
8.	# 1789	Hydrochloric acid
	# 3257	Elevated temp. liquid, n.o.s.
10.	# 1017	Chlorine
	# 1170	Ethanol
	# 1814	Potassium hydroxide, solution
	# 2582	Ferric chloride, solution
14.	Multiple products tied for 14th	

2003 – Most Frequent by Intermodal

1.	Corrosive-8
2.	Flammable-3
3.	Non-Flammable Gas-2
4.	Dangerous
5.	Flammable Gas-2
	Oxidizer-5.1
	# 1263 Paint (flammable)
8.	Class-9
9.	Explosives-1.4
10.	# 1993 Flammable liquid, n.o.s.
	Class-9 – Marine Pollutant
12.	Flammable Solid-4
	# 1823 Caustic soda, solid
	# 3258 Elevated temp., solid

History of Railroad Hazardous Commodity Surveys - continued

2004 – Most Frequent by Tank Car

1. # 1075 LPG
2. # 1987 Alcohol, n.o.s.
3. # 3077 Other reg. substances, solid
4. # 1993 Flammable liquid, n.o.s.
5. # 1086 Vinyl chloride
6. # 3257 Elevated temp. liquid, n.o.s.
7. # 2187 Carbon dioxide, refrig. liquid
   # 3082 Other reg. substance, liquid
9. # 1170 Ethanol
10. # 1824 Sodium hydroxide, solution
11. Class-9 Miscellaneous
    # 1005 Ammonia, anhydrous
13. # 1789 Hydrochloric acid
14. # 1918 Isopropylbenzene
    # 3219 Nitrites, inorganic, solution

2004 – Most Frequent by Intermodal

1. Flammable-3
2. Corrosive-8
3. Flammable Gas-2.1
4. Non-Flammable Gas-2.2
   Dangerous
6. Oxidizer-5.1
   Toxic-6.1
   Class-9 (Miscellaneous)
9. Harmful-Stow from Foodstuffs
   # 1987 Alcohols, n.o.s.
11. Explosives-1.4
    Flammable Solid-4.1
13. # 1263 Paint (flammable)
    # 1866 Resin solution
    # 1993 Flammable liquid, n.o.s.

2005

1. # 1075 LPG
2. # 1993 Flammable liquid, n.o.s.
3. Class-3 Flammable liquid [Intermodal]
4. # 1987 Alcohols, n.o.s.
   # 3077 Other reg. substances, solid
6. Class-8 Corrosive [Intermodal]
7. # 2794 Batteries, wet, filled w/acid
   # 3082 Other reg. substances, liquid
9. # 2187 Carbon dioxide, refrig., liquid
10. # 1824 Sodium hydroxide, solution
    # 2582 Ferric chloride, solution
12. # 1090 Acetone
13. Class-9 Miscellaneous [Intermodal]
    # 1830 Sulfuric acid
15. # 1247 Methyl methacrylate monomer
    # 2055 Styrene monomer

2006

1. # 1987 Alcohols, n.os.
2. # 1075 Liquefied petroleum gas (LPG)
3. # 3257 Elev. temp. liquid, flammable
4. # 1993 Flammable liquid, n.o.s.
5. Class-3 Flammable Liquid [Intermodal]
6. # 1017 Chlorine
7. # 1824 Sodium hydroxide, solution
8. Class-8 Corrosive [Intermodal]
9. # 1170 Ethanol
   # 1830 Sulfuric acid
   # 3082 Other reg. substances, liquid
   # 2582 Ferric chloride solution
13. # 1086 Vinyl chloride
14. # 1918 Isopropylbenzene
15. # 2187 Carbon dioxide, refrig. liquid
    # 2348 Butyl acrylate

2007

1. # 1987 Alcohols, n.o.s
2. # 3077 Other reg. substances, solid
   # 3257 Elev. temp. liquid, flammable
4. # 1918 Isopropylbenzene
5. Class-3 Flammable liquid [Intermodal]
6. # 3082 Other reg. substances, solid
7. Class-8 Corrosive [Intermodal]
8. # 1075 LPG
9. # 1830 Sulfuric acid
10. # 1170 Ethanol
    # 1993 Flammable liquid, n.o.s.
12. # 2582 Ferric chloride, solution
13. # 1824 Sodium hydroxide, solution
    # 2187 Carbon dioxide, refrig. liquid
    # 2348 Butyl acrylate

2008

1. # 1987 Alcohols, n.o.s.
2. # 1075 LPG
3. Flammable Gas-3 [Intermodal]
4. # 3257 Elev. temp. liquid, flammable
5. Corrosive-8 [Intermodal]
6. # 2187 Carbon dioxide, refrig. liquid
7. # 1918 Isopropylbenzene
8. # 3077 Other reg. substances, solid
9. # 1824 Sodium hydroxide, solution
10. # 1170 Ethanol
11. # 1830 Sulfuric acid
12. # 1993 Flammable liquid, n.o.s.
13. # 1017 Chlorine
    Class-9 [Intermodal]
15. # 3082 Other reg. substances, liquid
    # 2794 Batteries

History of Railroad Hazardous Commodity Surveys - continued

	2009		2010
1.	# 1987 Alcohol, n.o.s.	1.	# 1987 Alcohol, n.o.s
2.	# 3077 Other reg. substances, solid	2.	Corrosive-8 [Intermodal]
3.	Corrosive-8 [Intermodal]	3.	Flammable-3 [Intermodal]
4.	# 3257 Elev. temp. liquid, flammable	4.	# 3077 Other reg. substances, solid
5.	Flammable-3 [Intermodal]	5.	# 1075 Liquefied petroleum gas (LPG)
6.	# 1075 Propane (LPG)	6.	# 3082 Other reg. substances, liquid
7.	# 1294 Toluene	7.	# 1993 Flammable liquid, n.o.s.
	# 1789 Hydrochloric acid	8.	# 1830 Sulfuric acid
9.	Class-9 (Miscellaneous)	9.	Dangerous [Intermodal]
10.	# 2211 Polymeric beads, expandable	10.	Class-9 [Intermodal]
11.	# 1993 Flammable liquid, n.o.s.	11.	Non-Flammable Gas-2 [Intermodal]
	Dangerous [Intermodal]		# 1086 Vinyl chloride, stabilized
	Marine Pollutant [Intermodal]		# 2582 Ferric chloride
14.	# 1170 Ethanol	14.	Toxic-6 [Intermodal]
15.	# 1247 Methyl methacrylate monomer	15.	# 2187 Carbon dioxide, refrigerated liq.
	# 1830 Sulfuric acid		
	# 2794 Batteries, wet, filled with acid		

	2011		2012
1.	# 1987 Alcohols, n.o.s.	1.	# 1267 Petroleum crude oil
2.	# 3257 Elev. temp. liquid, flammable	2.	# 1987 Alcohol, n.o.s.
3.	# 1075 Liquefied petroleum gas	3.	Corrosive-8 [Intermodal]
4.	Flammable-3 [Intermodal]	4.	Flammable-3 [Intermodal]
5.	# 3077 Other reg. substances, solid	5.	Class-9 [Intermodal]
6.	Corrosive-8 [Intermodal]	6.	Dangerous [Intermodal]
7.	# 3082 Other reg. substances, liquid	7.	# 2448 Sulfur, molten
8.	# 1993 Flammable liquid, n.o.s.		# 3257 Elev. temp. liquid, flam. n.o.s.
9.	Dangerous [Intermodal]	9.	# 1075 Liquefied petroleum gas (LPG)
10.	Flammable Gas-2 [Intermodal]	10.	Non-Flammable Gas-2 [Intermodal]
	# 1791 Hypochlorite solution	11.	Other reg. sub., liq.,nos [Intermodal]
11.	Class-9 [Intermodal]	12.	Oxidizer-5.1 [Intermodal]
12.	# 2187 Carbon dioxide, refrigerated liq.		# 1170 Ethanol
13.	# 1170 Ethanol		# 2187 Carbon dioxide, refrig. liquid
14.	# 2211 Polymeric beads, expandable	15.	Flammable Gas-2 [Intermodal]
	# 1830 Sulfuric acid		Marine Pollutant [Intermodal]
15.	# 2348 Butyl acrylate		Flammable liquid, n.o.s.[Intermodal]
	Dangerous When Wet-4[Intermodal]		# 3077 Other reg. sub., solid, n.o.s.

History of Railroad Hazardous Commodity Surveys - continued

	2013	2014
1.	# 1267 Petroleum crude oil	# 1267 Petroleum crude oil
2.	# 1987 Alcohols, n.o.s.	# 1987 Alcohols, n.o.s.
3.	# 1075 Liquefied petroleum gas	# 1075 Liquefied petroleum gas
4.	Flammable-3 [Intermodal]	# 1993 Flammable liquid, n.o.s.
5.	Corrosive-8 [Intermodal]	Flammable-3 [Intermodal]
6.	# 3257 Elev. temp. liquid, flam., n.o.s.	# 3257 Elev. temp. liquid, flam., n.o.s.
7.	Dangerous [Intermodal]	Dangerous [Intermodal]
8.	Class-9 [Intermodal]	Corrosive-8 [Intermodal]
9.	# 3082 Other reg. sub., liquid, n.o.s.	Class-9 [Intermodal]
10.	Non-Flammable Gas-2 [Intermodal]	# 1247 Methyl methacrylate monomer
	# 3077 Other reg. sub., solid, n.o.s.	# 1077 Propylene
12.	# 1170 Ethanol	# 2348 Butyl acrylate
13.	Flammable Gas-2 [Intermodal]	# 1170 Ethanol
14.	# 2187 Carbon dioxide, refrigerated liquid	Non-Flammable Gas-2 [Intermodal]
	Oxidizer-5.1 [Intermodal]	15. Flammable Gas-2 [Intermodal]

2015 RAILROAD HAZARDOUS COMMODITY FLOW STUDY

STATISTICAL REPORT FROM ON-SITE RAILROAD SURVEYS

2015 HAZARDOUS COMMODITY SUMMARY BY RAIL – INTERMODAL ONLY

Class 1	**-**	**Explosive-1.4**	**2**
Class 2	**-**	**Flammable Gas-2**	**29**
Class 2	**-**	**Non-Flammable Gas-2**	**28**
Class 3	**-**	**Flammable-3**	**106**
Class 4	**-**	**Flammable Solid-4**	**12**
Class 4	**-**	**Spontaneously Combustible-4**	**2**
Class 4	**-**	**Dangerous When Wet-4**	**2**
Class 5	**-**	**Oxidizer-5.1**	**16**
Class 5	**-**	**Organic Peroxide-5.2**	**3**
Class 6	**-**	**Toxic-6**	**7**
Class 8	**-**	**Corrosive-8**	**107**
Class 9	**-**	**Class-9**	**73**
Dangerous	**-**		**90**
1013	**Carbon dioxide**		**1**
1057	**Lighter (flammable gas)**		**1**
1075	**LPG**		**1**
1127	**Chlorobutanes**		**1**
1133	**Adhesives (flammable)**		**4**
1170	**Ethanol**		**5**
1263	**Paint (Flammable)**		**10**
1268	**Petroleum Products, n.o.s.**		**1**
1444	**Ammonium persulfate**		**5**
1486	**Potassium nitrate**		**4**
1498	**Sodium nitrate**		**1**
1505	**Sodium persulfate**		**1**
1719	**Caustic alkali liquid, a.k.a.**		**1**
1814	**Potassium hydroxide, solution**		**1**
1823	**Caustic soda, solid/granular**		**13**
1824	**Caustic soda, solution**		**2**
1950	**Aerosols**		**1**
1993	**Flammable liquid, n.o.s.**		**6**
2079	**Diethylenetriamine**		**1**
2213	**Paraformaldehyde**		**1**
2303	**Isopropenylbenzene**		**2**
2468	**Trichloroisocyanuric acid, dry**		**10**

2015 RAILROAD INTERMODAL SUMMARY – continued

2545	**Hafnium powder, dry**	**1**
2581	**Ammonium chloride, solution**	**1**
2659	**Sodium chloroacetate**	**2**
2672	**Ammonium hydroxide**	**1**
2735	**Alkylamines, n.o.s.**	**1**
2794	**Batteries, wet filled with acid**	**3**
2876	**Resorcinol**	**6**
2922	**Corrosive liquid, toxic, n.o.s.**	**1**
3065	**Alcoholic beverages**	**3**
3077	**Other regulated substances, solid, n.o.s.**	**23**
3082	**Other regulated substances, liquid, n.o.s.**	**21**
3145	**Alkyl phenols, liquid, n.o.s.**	**1**
3257	**Elev. temp. liquid, n.o.s., below flash point**	**3**
3260	**Corrosive solid, acidic, inorganic, n.o.s.**	**1**
3266	**Corrosive liquid, basic, inorganic, n.o.s.**	**2**

2015 HAZARDOUS COMMODITY SUMMARY BY RAIL – MIXED FREIGHT

1005	**Anhydrous ammonia**	**3**
1017	**Chlorine**	**7**
1018	**Chlorodifluoromethane**	**2**
1030	**Difluoroethane**	**3**
1040	**Ethylene oxide**	**2**
1052	**Hydrogen fluoride, anhydrous**	**1**
1075	**Liquefied petroleum gas (LPG)**	**663**
1077	**Propylene**	**61**
1086	**Vinyl chloride, stabilized**	**51**
1090	**Acetone**	**3**
1093	**Acrylonitrile, stabilized**	**1**
1114	**Benzene**	**5**
1120	**Butanols**	**1**
1123	**Butyl acetates**	**1**
1136	**Coal tar distillates, flammable**	**1**
1155	**Diethyl ether**	**1**
1170	**Ethanol**	**34**
1203	**Gasoline**	**1**
1206	**Heptanes**	**4**
1219	**Isopropanol**	**1**
1230	**Methanol**	**1**
1245	**Methyl isobutyl ketone**	**1**
1247	**Methyl methacrylate monomer, stabilized**	**26**
1248	**Methyl propionate**	**1**
1267	**Petroleum crude oil**	**4,945**
1268	**Petroleum products, n.o.s.**	**30**
1274	**n-Propanol**	**1**
1275	**Propionaldehyde**	**1**
1280	**Propylene oxide**	**3**
1294	**Toluene**	**15**
1301	**Vinyl acetate, stabilized**	**2**
1307	**Xylenes**	**16**
1593	**Methylene chloride**	**2**
1760	**Corrosive liquid, n.o.s.**	**5**
1778	**Fluorosilicic acid**	**6**
1789	**Hydrochloric acid**	**24**
1791	**Hypochlorite solution**	**13**
1805	**Phosphoric acid**	**1**
1814	**Caustic potash, solution**	**1**
1824	**Caustic soda, solution**	**10**

2015 RAILROAD MIXED FREIGHT SUMMARY – continued

1830	**Sulfuric acid**	**18**
1832	**Sulfuric acid, spent**	**22**
1908	**Chlorite solution**	**2**
1917	**Ethyl acrylate, stabilized**	**6**
1942	**Ammonium nitrate**	**1**
1975	**Nitric oxide and nitrogen dioxide mixture**	**62**
1987	**Alcohols, n.o.s.**	**568**
1993	**Flammable liquid, n.o.s.**	**202**
2031	**Nitric acid, other than red fuming**	**1**
2055	**Styrene monomer, stabilized**	**9**
2057	**Tripropylene**	**3**
2078	**Toluene diisocyanate**	**2**
2187	**Carbon dioxide, refrigerated liquid**	**18**
2303	**Isopropenylbenzene**	**2**
2312	**Phenol, molten**	**8**
2448	**Sulfur, molten**	**1**
2491	**Ethanolamine**	**3**
2531	**Methacrylic acid, solution**	**2**
2582	**Ferric chloride, solution**	**22**
2693	**Bisulfites, aqueous solution, n.o.s.**	**2**
2837	**Bisulfates, aqueous solution**	**1**
2874	**Furfuryl alcohol**	**1**
2924	**Flammable liquid, corrosive, n.o.s.**	**1**
3065	**Alcoholic beverages**	**1**
3077	**Other regulated substances, solid, n.o.s.**	**17**
3082	**Other regulated substances, liquid, n.o.s.**	**35**
3092	**1-methoxy – 2-propanol**	**3**
3163	**Liquefied gas, n.o.s.**	**1**
3256	**Elevated temperature liquid, flammable, n.o.s.**	**7**
3257	**Elevated temperature liquid, n.o.s.**	**157**
3265	**Corrosive liquid, acidic, organic, n.o.s.**	**4**
3272	**Esters, n.o.s.**	**2**
3295	**Hydrocarbons, liquid, n.o.s.**	**87**
3426	**Acrylamide, solution**	**3**

Labeled RR Cars – No placards

Dipropylene	**4**
Epoxy solution	**1**
Ethylene glycol	**1**
Limestone Slurry	**5**
Titanium Dioxide	**8**

2015 RAILROAD HAZARDOUS COMMODITY FLOW STUDY

2015 RAILROAD SUMMARY

TOP (20) – 2015 RAILROAD HAZARDOUS COMMODITIES

1.	**Petroleum crude oil**	**(# 1267)**	**(4,945)**
2.	**LPG**	**(# 1075)**	**(663)**
3.	**Alcohols, n.o.s.**	**(# 1987)**	**(568)**
4.	**Flammable liquid, n.o.s.**	**(# 1993)**	**(202)**
5.	**Elevated temperature liquid, n.o.s.**	**(# 3257)**	**(157)**
6.	**Corrosive-8**	**(Intermodal)**	**(107)**
7.	**Flammable-3**	**(Intermodal)**	**(106)**
8.	**Dangerous**	**(Intermodal)**	**(90)**
9.	**Hydrocarbons, liquid, n.o.s.**	**(# 3295)**	**(87)**
10.	**Class-9 - Miscellaneous**	**(Intermodal)**	**(73)**
11.	**Nitric oxide w/ nitrogen dioxide mixture**	**(# 1975)**	**(62)**
12.	**Propylene**	**(# 1077)**	**(61)**
13.	**Vinyl chloride, stabilized**	**(# 1086)**	**(51)**
14.	**Other regulated substances, liquid, n.o.s.**	**(# 3082)**	**(35)**
15.	**Ethanol**	**(# 1170)**	**(34)**
16.	**Petroleum products, n.o.s.**	**(# 1268)**	**(30)**
17.	**Class 2 - Flammable Gas-2**	**(Intermodal)**	**(29)**
18.	**Class 2 - Non-Flammable Gas-2**	**(Intermodal)**	**(28)**
19.	**Methyl methacrylate monomer**	**(# 1247)**	**(26)**
20.	**Hydrochloric acid**	**(# 1789)**	**(24)**

TRAIN OBSERVATION BY TYPE

Intermodal Freight	**-**	**193**
Mixed Freight	**-**	**99**
Unit	**-**	**51**
Auto Transports	**-**	**28**
Coal Hoppers (Empty)	**-**	**26**
Coal Hoppers (Loaded)	**-**	**18**
Gondolas	**-**	**8**
Covered Hoppers	**-**	**5**
TOTAL	**-**	**428**

2015 RAILROAD SUMMARY - continued

TRAIN OBSERVATION BY DIRECTION

EASTBOUND TRAIN TRAFFIC	**-**	**214**
WESTBOUND TRAIN TRAFFIC	**-**	**214**
TOTAL OBSERVED	**-**	**428**

2015 RAILROAD COMMODITY TRENDS / OBSERVATIONS:

1. **Eastbound coal hoppers are loaded – Westbound coal hoppers are empty.**

2. **Tanker cars placarded # 1987 (Alcohols, n.o.s.) are transporting Ethanol as reported by Norfolk Southern officials.**

3. **Tanker cars placarded # 1267 (Petroleum crude oil) are transporting both Canadian and Bakken crude oil.**

   a. **Trains carrying one sole product are referred to as "Unit Trains"**
   b. **Eastbound tank cars are loaded**
   c. **Westbound tankers have residual product**
   d. **Railroad crude oil tank cars average 30,000 gallons of crude oil per car**
   e. **Crude unit trains are made up of 80 to 120 tank cars**
   f. **Crude unit trains utilize a "buffer car" as the first and last freight car**

4. **Railroad terminology:**

   "EMPTY" refers to 97 % off-loaded; up to 3% residual

   "High-Hazard Flammable Train" (HHFT) – (20) Twenty or more Bakken crude or ethanol tank cars <u>together</u> in a single train; or (35) thirty-five or more <u>anywhere</u> within a single train transporting hazardous materials.

   New Bakken crude tank cars – now DOT 117 (Old DOT was 111)

5. **Due to the number of train locomotives on any train – and the large capacity diesel fuel storage tanks and other fluid storage tanks on each locomotive – any train can be the source of a release as follows due to mechanical or failure otherwise:**

Diesel fuel tanks	**-**	**up to 5,000 gallons**
Lube oil	**-**	**up to 410 gallons**
Coolant	**-**	**up to 380 gallons**
Battery acid	**-**	**up to 50 gallons**

2015 PIPELINE HAZARDOUS COMMODITY SURVEY

Pipelines Operating In Cambria County	Products Transported
Buckeye Partners, L.P.	Diesel Fuel, Fuel Oil, Gasoline, Jet Fuel, Kerosene, Propane
Dominion Transmission, Inc.	Natural Gas, Propane
Enterprise Products Operating, LLC	Ethane, Iso-Butane, N-Butane, Propane
EQT	Natural Gas
Peoples Natural Gas	Natural Gas
Peoples TWP	Natural Gas
Sunoco Pipeline L.P.	Butane, Ethane, Fuel Oil, Aviation Fuel, Gasoline, Kerosene, Light Cycle Oil, Propane, Ultra Low Sulfur Diesel, Ultra Low Sulfur Kerosene
Spectra Energy	Natural Gas
Texas Eastern Transmission, L.P.	Natural Gas

NOTE:

Pipeline companies and respective commodity inventories provided through Paradigm Liaison Services (2015).

END OF 2015 HAZARDOUS COMMODITY FLOW REPORT FOR CAMBRIA COUNTY