COMMODITY FLOW STUDY

WOOD COUNTY, WEST VIRGINIA

November 2011

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TABLE OF CONTENTS

EXECUTIVE SUMMARY

This Commodity Flow Study (CFS) examines the movement of hazardous materials through Wood County by the following modes of transportation: highway, railway, air, and river. The goal of the CFS is:

To enhance the ability of the Wood County Office of Emergency Management and the Wood County Local Emergency Planning Committee so they can better anticipate, plan for, respond to, and prevent emergencies resulting from hazardous materials transportation accidents.

Based upon current and historical emergency planning data and information, it was determined the vast majority of hazardous materials transportation in Wood County is either by highway, railway, or waterway. There is very little, if any, transported by air.

With regards to highway transportation, local data and information analyzed nine major routes within the County: Interstate 77, Route 50, Route 14, Route 47, Route 31, Route 95, Route 68, 7th Street, and Route 892. The following is a summary of the risk analysis for these major routes in order of those with the greatest chance for a hazardous materials transportation accident occurring.

- **One hazardous materials transportation accident could occur on Interstate 77 approximately every .35 years (4.2 months).**
- **One hazardous materials transportation accident could occur on Route 14 approximately every 1.04 years.**
- **One hazardous materials transportation accident could occur on Route 50 approximately every 3.24 years.**
- **One hazardous materials transportation accident could occur on Route 31 approximately every 4.42 years.**

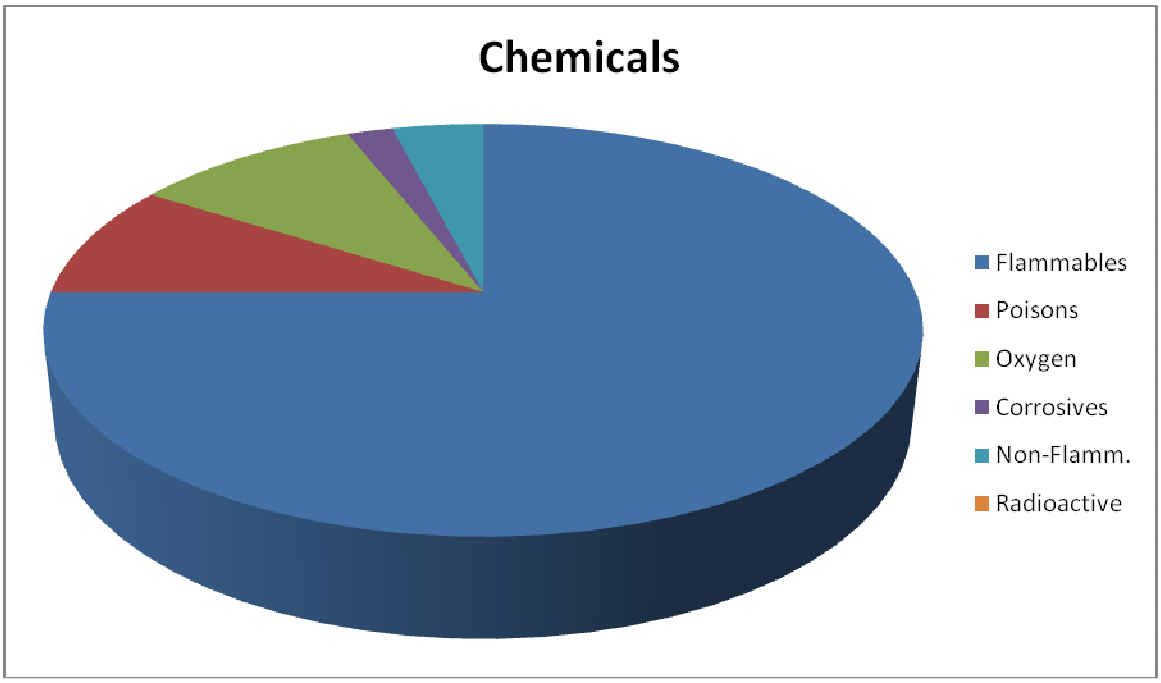
- **One hazardous materials transportation accident could occur on Route 68 approximately every 5.15 years.**
- **One hazardous materials transportation accident could occur on Route 892approximately every 8.67 years.**
- **One hazardous materials transportation accident could occur on Route 95 approximately every 13.77 years.**
- **One hazardous materials transportation accident could occur on Route 47 approximately every 14.28 years.**
- **One hazardous materials transportation accident could occur on 7th Street approximately every 16.95 years.**

Wood County's previous CFS was conducted in 1999 and at that time only three major highways were analyzed. The conclusions of the 1999 study were:

- **One hazardous materials transportation accident could occur on Interstate 77 approximately every 5.8 months.**
- **One hazardous materials transportation accident could occur on Route 50 approximately every 1.5 years.**
- **One hazardous materials transportation accident could occur on Route 68 approximately every 1.4 years.**

Both CFS showed that Interstate-77 is the roadway which is most likely to have a hazardous materials accident occur. In fact, the time period for a possible accident is very similar – 4.2 months in 2011 and 5.8 months in 1999.

As the following chart shows, the vast majority of hazardous materials being transported through Wood County roadways are classified as flammables. Oxygen and poisons were a distant second and third.



Types of Hazardous Materials Transported in Wood County by Roadways – 2011

Percentages

Flammables	75%
Poisons	9%
Oxygen	10%
Corrosives	2%
Non-Flamm.	4%
Radioactive	<1%

CSX Transportation operates a rail transportation system in Wood County. A hazardous materials density study, which covers the year 2010, lists each commodity by its name, hazard class, number of carloads, and carload percent of total hazmat materials transported. The following chart lists the top ten which are transported through Wood County and which comprise approximately 85 percent of hazardous materials transported on railway though Wood County.

Commodity	Hazard Class	Carloads (2010)	Carload % of Total Hazmat
SODIUM HYDROXIDE SOLUTION	9	2,139	19.21%
CHLORINE	2.3	1,589	14.27%
HYDROCHLORIC ACID	8	1,434	12.88%
LIQUIEFIED PETROLEUM GASES	2.1	1,410	12.66%
HEXAMETHYLENEDIAMINE, SOLID	8	537	4.82%
ISOPRENE, STABLIZED	3	532	4.78%
GASOLINE	3	494	4.44%
CHLORODFLUOROMETHANE	2.2	479	4.3%
ENVIRONMENTALLY HAZARDOUS SUBSTANCES SOLIC, N.O.S.	9	476	4.27%
OTHER REGULATED SUBSTANTCES, LIQUID, N.O.S.	9	362	3.25%

The CFS also included a review of the hazardous materials which are shipped through Wood County via the Ohio River. Representatives from the Huntington District of the US Army Corps of Engineers provided a complete list of the commodities that passed through Wood County during the year 2008, 2009, and 2010. The following is a list of the 2010 top ten based upon tonnage amounts.

Publication Group	Group Name	2010	2009	2008
1100	Coal & Ignite	34,202,274	31,062,957	34,776,820
4322 & 4335	Limestone & Waterway Improvement Materials	1,309,978	716,253	NA
5210, 5220 & 5290	Lime, Cement, Concrete & Misc. Mineral Products	946,785	796,211	920,912
4331	Sand & Gravel	801,000	981,760	822,480
4900	Non-Metal. Min. NEC	783,682	765,343	692,746
4650	Aluminum Ore	537,923	511,349	762,475
5315	Ferro Alloys	472,329	298,205	648,326
2350	Lube Oils and Greases	427,426	464,387	397,166
1200	Coal Coke	311,751	448,3971	670,087
2330	Distillate Fuel Oil	282,565	195,561	286,017

A final section of this CFS explores the legal and regulatory environment in which hazardous material incident emergency planning takes place. This section

focused on the Federal Emergency Planning and Community Right-To-Know Act (EPCRA) and its four major aspects of hazardous materials and planning:

- Emergency Planning
- Emergency Notification
- Community Right-To-Know
- Community Right-To-Know: Toxic Chemical Release Inventory Reporting

Wood County Local Emergency Planning Committee
Commodity Flow Study

I. Introduction

IA PURPOSE OF STUDY

The Emergency Planning and Community Right-to-Know Act (EPCRA) establishes requirements for Federal, state and local governments, Indian Tribes, and industry regarding emergency planning and "Community Right-to-Know" reporting on hazardous and toxic chemicals. The "Community Right-to-Know" provisions help increased the public's knowledge and access to information on chemicals which are located in their community.

EPCRA was passed by Congress in 1986 and was created to help communities plan for emergencies involving hazardous substances. Sections 301 to 303 of EPCRA stipulate that every community in the United States must be part of a comprehensive emergency response plan. In 1993, the West Virginia Legislature passed House Bill 2382 which implemented EPCRA in the State.

The State Emergency Response Commission (SERC) serves as the administrative body for the implementation of this bill at the state level. On a local level, the Local Emergency Planning Committees (LEPCs) serve the counties in West Virginia and work to understand chemical hazards in their communities, develop emergency plans in case of an accidental release, and look for ways to prevent chemical accidents. LEPCs are made up of emergency management agencies, first responders, industry, and the public.

Section 15-5A-7(d)(3) of the West Virginia Code states that LEPCs should develop and implement comprehensive emergency response plans. The process for

the development of these plans includes conducting various hazard analysis and risk assessment studies including studies such as a Commodity Flow Study. The overall purpose of this Study is to provide Wood County emergency managers and responders with information to mitigate, prepare, respond, and recover from a hazardous materials incident with the ultimate goal of minimizing the damage and/or harm to personnel, equipment, facilities, and the community at large.

IB DESCRIPTION OF THE AREA

Wood County is located on the western border of West Virginia along the Ohio River. The 2010 Census data shows a population of 86,956 people residing within the County's 366 square miles of territory. The land terrain consists of medium to wide valleys and rolling to medium steep hills with elevations which vary from a lower range of 590 feet above sea level to a high of approximately 1,300 feet above sea level.

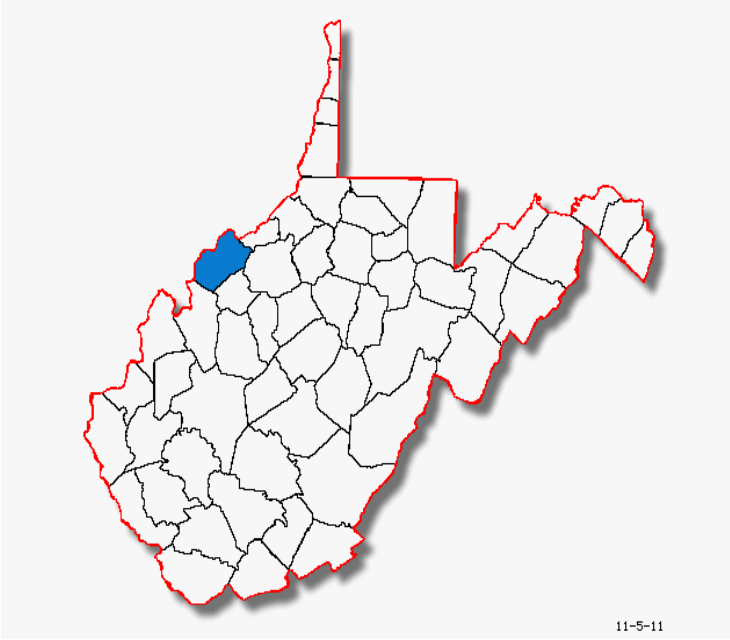


Figure 1 – Wood County, WV

Interstate – 77, a major four-lane, north-south interstate highway, bisects the County with two lanes of divided highway in each direction. US Route 50, which

is part of the Appalachian Highway System, crosses the County in an east-west direction. It also has two lanes of divided highway in each direction.

The CSX Transportation operates a rail-line that runs along the western border of the County where it parallels the Ohio River in a north-south direction with a bridge crossing over the Ohio River at Parkersburg. The Mid-Ohio Valley (MOV) Regional Airport, located in the northwestern portion of the County, provides commercial and private air services.

Included in Wood County are four incorporated cities. Parkersburg (population – 31,492) is the largest of the four and functions as the center of government (county seat) and is the local business and finance center. Parkersburg is located at the confluence of the Little Kanawha and Ohio Rivers. The Cities of Vienna (population – 10,749) and Williamstown are located north of Parkersburg along the Ohio River. North Hills is directly northeast of Parkersburg on State Route 68. Surrounding these incorporated areas are the unincorporated communities of Waverly, Davisville, Mineral Wells, Pettyville, Lubeck, and Washington Bottom.

During the post-World War II period, the petrochemical industry established itself as a major employer in the Mid-Ohio Valley and in Wood County in particular. The activity began with the development of the DuPont Washington Works and later SABIC Innovative Plastics (formerly GE Plastics/ Borg Warner). These major industrial facilities, along with smaller operations, located along the Ohio River in the Washington Bottom area of southern Wood County.

IC GOAL

The goal of this Commodity Flow Study is to enhance the ability of the Wood County Office of Emergency Management and the Wood County Local Emergency

Planning Committee so they can better anticipate, plan for, respond to, and prevent emergencies resulting from hazardous materials transportation accidents.

In order to achieve this goal, this Study will implement the following tasks:

Task 1. Delineate the mode of travel by which the vast bulk of hazardous materials are transported through Wood County.

Task 2. Identify the specific travel venues which hazardous material transporters use in Wood County.

Task 3. Define areas where hazardous material transport accidents are more likely to occur in Wood County.

Task 4. Provide the WCOEM and LEPC with a good, operating understanding of the general types of hazardous materials which are transported through the County: i.e. flammable, non-flammable gas, corrosive, explosive, oxidizer, and poison.

II. HIGHWAY ANALYSIS

IIA NATIONAL STATISTICS

According to the most recent report released in January 2011 by the Bureau of Transportation Statistics for the US Department of Transportation the amount of hazardous material moving through the nation's transportation network in 2007 remained relatively unchanged from 2002 measures. The estimated 2.2 billion tons of hazardous materials carried by all modes of transportation is about the same amount as the estimated tonnage in 2002. However, the value of these shipments more than doubled from $660 billion to $1,448 billion, driven primarily by the increase in the price of refined petroleum products and other basic commodities.

There are nine classes of hazardous materials. Flammable Liquids represented the bulk of the hazardous materials transported with it accounting for 1.8 billion

tons of the total 2.2 billion tons of hazardous materials. Shipments of gases comprised 251 million tons while corrosive materials were a total of 114 million tons. Figure 1 shows the shipments by hazardous material class.

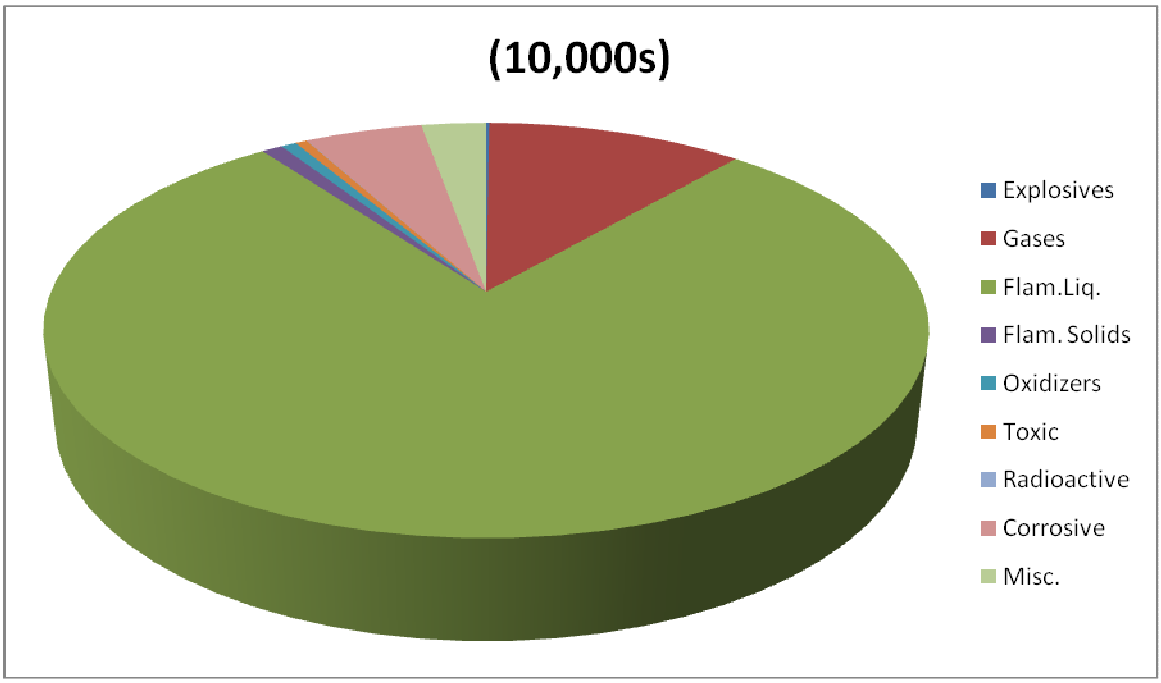


Figure 2 – Hazardous Materials Shipment Characteristics by Hazard Class in 2007

The number of hazardous material incidents has decreased from 2001 to 2010 despite a substantial peak during the 2006 and 2007 time period. In 2001 there were a total of 17,792 incidents in all the various categories. This number peaked to 20,339 incidents in 2006 and remained high in 2007 with 19,300 incidents reported. Over the next several years the number of incidents declined, and in 2010 the number of incidents was 14,792 which was the lowest in the ten year time period. In every one of these years, the vast majority of the incidents overwhelmingly occurred on the roadways (86 percent), which was followed by air (8 percent), railway (5 percent), and water (1 percent). Figure 3 shows the breakdown of these incidents by mode of transportation while Figure 4 represents the number of incidents over the ten year time period.

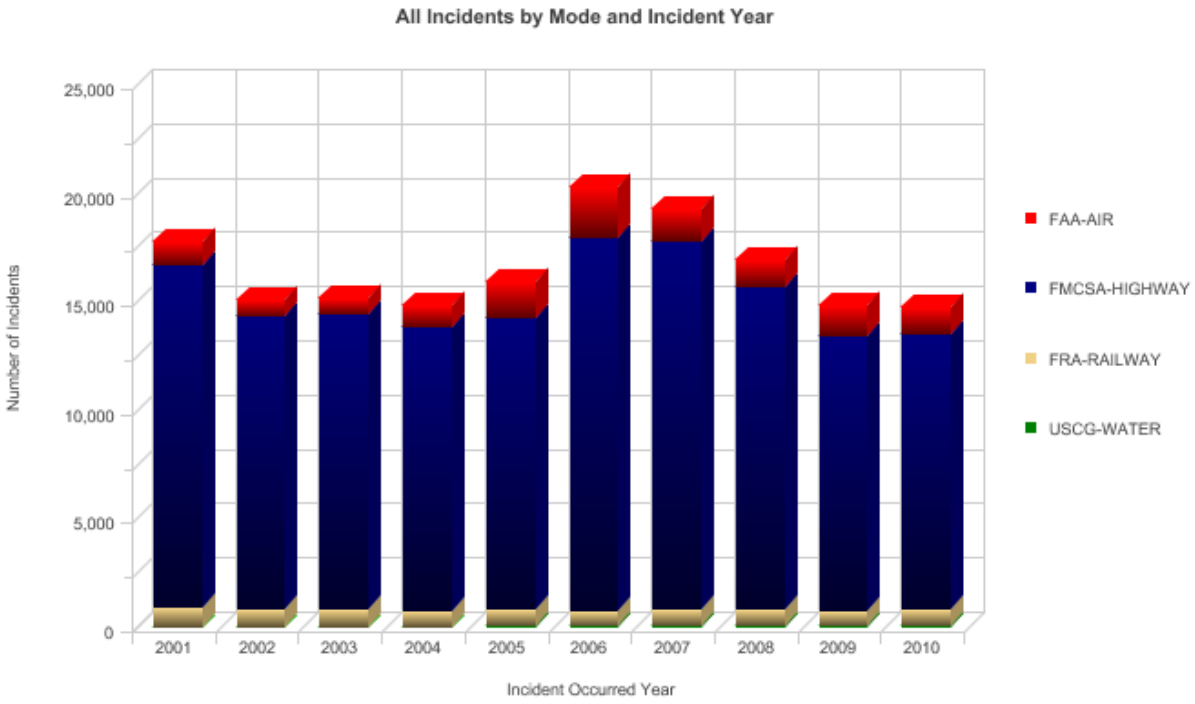


Figure 3 – Hazardous Material Incidents by Mode and Year – 2001 – 2010

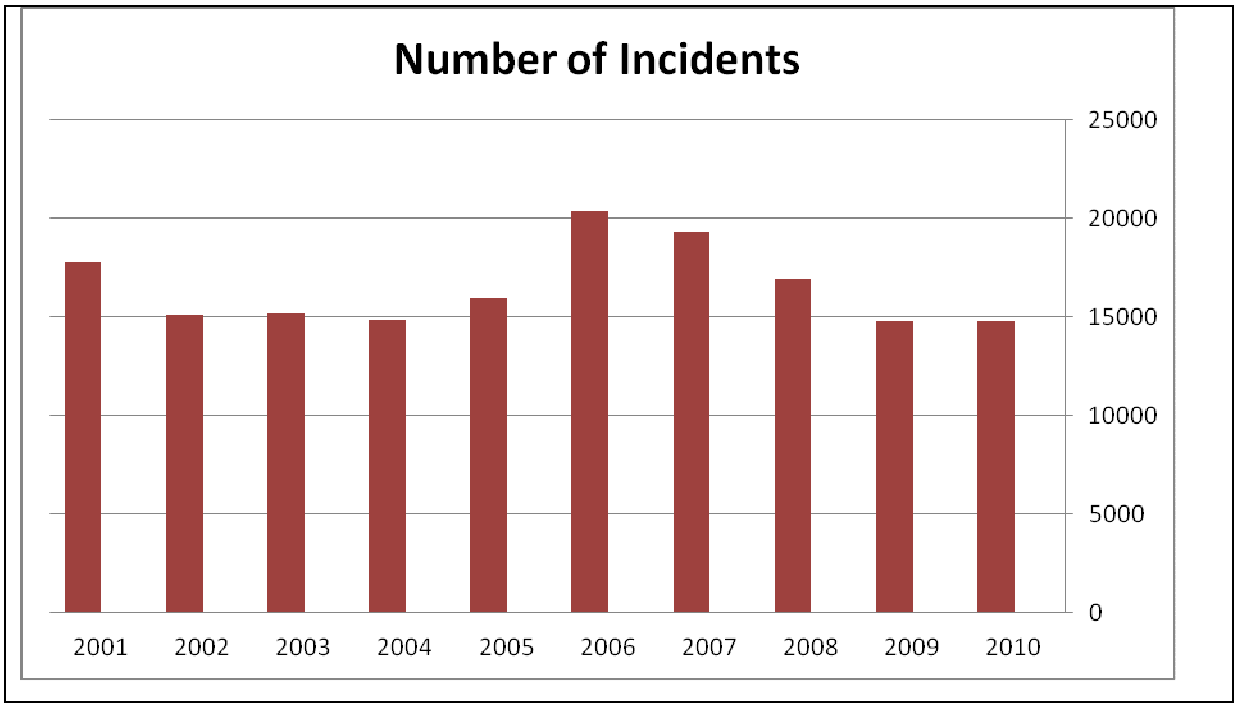


Figure 4 – Number of Hazardous Material Incidents by Year – 2001 – 2010

YEAR	TOTAL NUMBER INCIDENTS
2001	17,792
2002	15,114
2003	15,156
2004	14,843
2005	15,929
2006	20,339
2007	19,300
2008	16,930
2009	14,819
2010	14,792

Figure 5 – Number of Hazardous Material Incidents by Year – 2001 – 2010

The US Department of Transportation maintains data on the cause of hazardous material incidents. The following two figures (Figure 6 and Figure 7) list the causes of these roadway incidents for 2009 and 2010.

Cause	Incidents
ABRASION	109
BROKEN COMPONENT OR DEVICE	186
CAUSE NOT REPORTED	505
COMMODITY POLYMERIZATION	1
COMMODITY SELF-IGNITION	8
CONVEYER OR MATERIAL HANDLING EQUIPMENT MISHAP	68
CORROSION – EXTERIOR	32
CORROSION – INTERIOR	38
DEFECTIVE COMPONENT OR DEVICE	1,003
DERAILMENT	1
DETERIORATION OR AGING	189
DROPPED	1,630
FIRE, TEMPERATURE, OR HEAT	21
FORKLIFT ACCIDENT	1,149
FREEZING	33
HUMAN ERROR	1,810
IMPACT WITH SHARP OR PROTRUDING OBJECT (E.G., NAILS)	748
IMPROPER PREPARATION FOR TRANSPORTATION	854
INADEQUATE ACCIDENT DAMAGE PROTECTION	130
INADEQUATE BLOCKING AND BRACING	1,074

INADEQUATE MAINTENANCE	6
INADEQUATE PREPARATION FOR TRANSPORTATION	545
INADEQUATE PROCEDURES	93
INADEQUATE TRAINING	17
INCOMPATIBLE PRODUCT	8
INCORRECTLY SIZED COMPONENT OR DEVICE	8
LOOSE CLOSURE, COMPONENT, OR DEVICE	1,454
MISALIGNED MATERIAL, COMPONENT, OR DEVICE	34
MISSING COMPONENT OR DEVICE	23
OVER-PRESSURIZED	78
OVERFILLED	192
ROLLOVER ACCIDENT	82
THREADS WORN OR CROSS THREADED	12
TOO MUCH WEIGHT ON PACKAGE	499
VALVE OPEN	159
VANDALISM	4
VEHICULAR CRASH OR ACCIDENT DAMAGE	95
WATER DAMAGE	5

FIGURE 6 – 2009 Hazardous Materials Incidents Causes

Cause	Incidents
ABRASION	95
BROKEN COMPONENT OR DEVICE	164
CAUSE NOT REPORTED	556
COMMODITY POLYMERIZATION	3
COMMODITY SELF-IGNITION	13
CONVEYER OR MATERIAL HANDLING EQUIPMENT MISHAP	74
CORROSION – EXTERIOR	20
CORROSION – INTERIOR	28
DEFECTIVE COMPONENT OR DEVICE	887
DERAILMENT	1
DETERIORATION OR AGING	181
DROPPED	1,373
FIRE, TEMPERATURE, OR HEAT	15
FORKLIFT ACCIDENT	1,206
FREEZING	25
HUMAN ERROR	1,911
IMPACT WITH SHARP OR PROTRUDING OBJECT (E.G., NAILS)	740

IMPROPER PREPARATION FOR TRANSPORTATION	813
INADEQUATE ACCIDENT DAMAGE PROTECTION	119
INADEQUATE BLOCKING AND BRACING	1,459
INADEQUATE MAINTENANCE	7
INADEQUATE PREPARATION FOR TRANSPORTATION	554
INADEQUATE PROCEDURES	103
INADEQUATE TRAINING	5
INCOMPATIBLE PRODUCT	4
INCORRECTLY SIZED COMPONENT OR DEVICE	9
LOOSE CLOSURE, COMPONENT, OR DEVICE	1,349
MISALIGNED MATERIAL, COMPONENT, OR DEVICE	42
MISSING COMPONENT OR DEVICE	25
OVER-PRESSURIZED	51
OVERFILLED	183
ROLLOVER ACCIDENT	106
THREADS WORN OR CROSS THREADED	14
TOO MUCH WEIGHT ON PACKAGE	448
VALVE OPEN	127
VANDALISM	2
VEHICULAR CRASH OR ACCIDENT DAMAGE	117
WATER DAMAGE	1

FIGURE 7 – 2010 Hazardous Materials Incidents Causes

The US Department of Transportation also maintains the results of the hazardous material incidents. Figure 8 lists the hazmat incidents for all modes of transport for the years of 2008, 2009, and 2010 while Figure 9 lists the hazmat incidents for those involving roadways only.

RESULT	2008	2009	2010
Vapor (Gas) Dispersion	503	433	470
Material Entered Waterway/Sewerway	66	52	78
Spillage	15,731	13,664	13,623
Fire	65	61	72
Explosion	45	20	29
Environmental Damage	59	53	74
None	819	850	817

Figure 8 – Hazmat Incidents Results for All Modes

RESULT	2008	2009	2010
Vapor (Gas) Dispersion	238	195	174
Material Entered Waterway/Sewerway	60	45	68
Spillage	14,339	12,384	12,291
Fire	57	51	62
Explosion	44	19	28
Environmental Damage	44	44	58
None	287	213	217

Figure 9 – Hazmat Incidents Results for Roadways

IIB STATE STATISTICS

Data is maintained by the US Department of Transportation on a state-by-state basis with regards to the number of hazardous materials incidents and by which mode of transportation that occurred. The following is a summary of hazmat incidents which occurred in West Virginia in 2008, 2009, and 2010.

YEAR	ALL	HIGHWAY	AIR	RAIL	WATER
2010	52	41	1	10	0
2009	44	38	2	4	0
2008	45	44	0	1	0

Figure 10 – Hazmat Incidents Results for West Virginia

During this three year analysis period of West Virginia, there were no fatalities as a result of these hazardous materials incidents. There was one person whose injuries required hospitalization, and there were two other persons injured who did not require hospitalization.

IIC. LOCAL STATISTICS

A central focus to this Commodity Flow Study involves surveying the movement of hazardous materials through Wood County. This survey concentrated on commercial motor vehicles moving along eight primary highways in the County: Interstate 77, Route 50, Route 68, Route 14, Route 31, Route 95, Route 47, and 7th Street. This survey was undertaken to assist the Wood County Local Emergency Planning Committee to accomplish the following emergency management tasks:

- Develop a more accurate understanding of the County's vulnerability for a hazardous materials highway incident.
- Identify the general classification or category of hazardous material that could be involved in a highway incident.

U. S. INTERSTATE 77

Interstate 77 is a modern four-lane highway which runs north and south connecting the central northeast (Cleveland, Ohio) with the southeast (Columbia, South Carolina). Approximately 27 miles of Interstate 77 passes through Wood County from its southern border with Jackson County to its northern border with Washington County. There were 10 different surveys done on Interstate 77, each for a two-hour period, ranging from 6:00 a.m. – 7:00 p.m. for a total of 20 survey hours.

- During the 20 hours of survey time, a total of 4,123 commercial vehicles were counted for an average of 206 vehicles per hour.
- A total of 342 hazardous materials were counted for an average of 17 carriers per hour.
- Hazardous material carriers accounted for an average of 8 percent of all commercial vehicle traffic during the surveys.
- Below is a percentage breakdown of the general categories of hazardous materials identified during the surveys.

Category	Percent
Flammables	53
Poisons	23
Oxygen	9
Corrosives	7
Non-Flammables	7
Radioactive	1

ROUTE 50

Route 50 enters Wood County at its eastern border with Ritchie County and extends for approximately 24 miles through the County to the State of Ohio. It is an east-west highway which carries four lanes of traffic. There were 10 different surveys done on Route 50, each for a two-hour period, ranging from 6:00 a.m. – 7:00 p.m. for a total of 20 survey hours.

- During the 20 hours of survey time, a total of 559 commercial vehicles were counted for an average of 28 vehicles per hour.
- A total of 48 hazardous materials were counted for an average of 2.4 carriers per hour.
- Hazardous material carriers accounted for an average of 9 percent of all commercial vehicle traffic during the surveys.
- Below is a percentage breakdown of the general categories of hazardous materials identified during the surveys.

Category	Percent
Flammables	58
Non-Flammables	13
Oxygen	13
Poisons	8
Corrosives	8

ROUTE 14

Route 14 is a two lane highway which travels approximately 27 miles in Wood County. It begins in Williamstown and travels through Vienna, Parkersburg, and Mineral Wells. There were 8 different surveys done on Route 14, each for a two-hour period, ranging from 6:00 a.m. – 7:00 p.m. for a total of 16 survey hours.

- During the 16 hours of survey time, a total of 237 commercial vehicles were counted for an average of 15 vehicles per hour.
- A total of 24 hazardous materials were counted for an average of 1.5 carriers per hour.
- Hazardous material carriers accounted for an average of 10 percent of all commercial vehicle traffic during the surveys.
- Below is a percentage breakdown of the general categories of hazardous materials identified during the surveys.

Category	Percent
Flammables	100

ROUTE 47

Route 47 is a two lane highway which travels approximately 15 miles in Wood County. It is located in the southwestern section of Wood County. There were 4 different surveys done on Route 47, each for a two-hour period, ranging from 6:00 a.m. – 7:00 p.m. for a total of 8 survey hours.

- During the 8 hours of survey time, a total of 105 commercial vehicles were counted for an average of 13 vehicles per hour.
- A total of 7 hazardous materials were counted for an average of .9carriers per hour.
- Hazardous material carriers accounted for an average of 7 percent of all commercial vehicle traffic during the surveys.
- Below is a percentage breakdown of the general categories of hazardous materials identified during the surveys.

Category	Percent
Flammables	100

ROUTE 31

Route 31 is a two lane highway which travels approximately 16 miles in Wood County. It begins in Williamstown and ends up at the Wood/Ritchie County border. There were 4 different surveys done on Route 31, each for a two-hour period, ranging from 6:00 a.m. – 7:00 p.m. for a total of 8 survey hours.

- During the 8 hours of survey time, a total of 110 commercial vehicles were counted for an average of 14 vehicles per hour.
- A total of 21 hazardous materials were counted for an average of 3 carriers per hour.
- Hazardous material carriers accounted for an average of 19 percent of all commercial vehicle traffic during the surveys.
- Below is a percentage breakdown of the general categories of hazardous materials identified during the surveys.

Category	Percent
Flammables	66
Oxygen	37

ROUTE 95

Route 95in Wood County consists of approximately three miles of roadway which is located in the southern section of Wood County and runs somewhat parallel to the Little Kanawha River. There were 4 different surveys done on Route 14, each for a two-hour period, ranging from 6:00 a.m. – 7:00 p.m. for a total of 8 survey hours.

- During the 8 hours of survey time, a total of 184 commercial vehicles were counted for an average of 23 vehicles per hour.
- A total of 36 hazardous materials were counted for an average of 5 carriers per hour.
- Hazardous material carriers accounted for an average of 20 percent of all commercial vehicle traffic during the surveys.
- Below is a percentage breakdown of the general categories of hazardous materials identified during the surveys.

Category	Percent
Flammables	88
Non-Flammables	12

ROUTE 68

Route 68 is a two lane highway which travels approximately 32 miles in Wood County. There were 4 different surveys done on Route 68, each for a two-hour period, ranging from 6:00 a.m. – 7:00 p.m. for a total of 8 survey hours.

- During the 8 hours of survey time, a total of 116 commercial vehicles were counted for an average of 15 vehicles per hour.
- A total of 9 hazardous materials were counted for an average of 1.125 carriers per hour.
- Hazardous material carriers accounted for an average of 8 percent of all commercial vehicle traffic during the surveys.
- Below is a percentage breakdown of the general categories of hazardous materials identified during the surveys.

Category	Percent
Flammables	34
Oxygen	33
Poisons	33

7TH STREET

7th Street is a two lane highway which travels approximately 3 miles in Wood County. There were 8 different surveys done on 7th Street, each for a two-hour period, ranging from 6:00 a.m. – 7:00 p.m. for a total of 16 survey hours.

- During the 16 hours of survey time, a total of 77 commercial vehicles were counted for an average of 5 vehicles per hour.
- A total of 6 hazardous materials were counted for an average of .75 carriers per hour.
- Hazardous material carriers accounted for an average of 8 percent of all commercial vehicle traffic during the surveys.
- Below is a percentage breakdown of the general categories of hazardous materials identified during the surveys.

Category	Percent
Flammables	100

ROUTE 892

Route 892 is a north-south, two-lane highway in Wood County. The highway runs for approximately 10 miles with the southern terminus of the route being West Virginia Route 68, south of Lubeck. The northern terminus of the route is at West Virginia 68 and Route 95, north of Lubeck. There were 6 different surveys done on Route 892 Street, each for a two-hour period, ranging from 6:00 a.m. – 7:00 p.m. for a total of 12 survey hours.

- During the 12 hours of survey time, a total of 182 commercial vehicles were counted for an average of 15 vehicles per hour.
- A total of 26 hazardous materials were counted for an average of 2.2 carriers per hour.
- Hazardous material carriers accounted for an average of 14 percent of all commercial vehicle traffic during the surveys.
- Below is a percentage breakdown of the general categories of hazardous materials identified during the surveys.

Category	Percent
Flammables	78
Poisons	15
Non-Flammables	7

RISK ANALYSIS

This Commodity Flow Survey concentrated on nine primary transportation routes in Wood County. All commercial vehicles were counted and those with hazardous material placards were identified. Transcaer provides a methodology to calculate the probability of a hazardous material transportation incident on the roadways within the boundaries of a specific area based upon:

- The number of hazardous material placarded vehicles which observed in the survey.
- The highway road miles within the boundaries of the political subdivision or other specified area.
- The national hazardous material accident frequency rate.

Procedure:

1. Number of miles under the jurisdiction of Wood County = _____ miles
2. Number of placard loads shown on the Placard Survey Form = _____ placarded vehicles
3. _____ miles x _____ placarded vehicle miles traveled by placarded vehicles in Wood County
4. _____ miles/1,000,000 = _____ million miles
5. _____ x .608 = _____ accidents with placard loads (NOTE: .608 is the national truck accident frequency rate per million miles.)
6. _____ hours of survey time/24 = _____ hours
7. _____ accidents/_____ hours x 365 days = _____ estimated number of accidents with placard loads per year
8. 100/_____ accidents/year = _____/100 = _____. This analysis provides a better understood value of the number of accidents that could occur on a yearly basis.

U. S. INTERSTATE 77

- A total of 27 miles of I-77 passes through Wood County.

- Number of placard loads shown on Placard Survey Form – 342 Placarded Vehicles

- 27 miles x 342 Placarded Vehicles = 9,234 miles traveled by placarded vehicles in Wood County.

- 9,234 miles/1,000,000 = 0.009234 million miles

- 0.009234 million miles x .608 = .0056142 accidents with placard loads

- 20 hours of survey time/24 hours = .83

- .0056142 accidents/.83 hours x 365 days = 2.47 estimated number of accidents with placard loads per year

- 100/2.47 accidents/year = 40.48/100 = .40

CONCLUSION: One hazardous materials transportation accident could occur on Interstate 77 approximately every .35 years (4.2 months).

ROUTE 50

- A total of 24 miles of Route 50 passes through Wood County.

- Number of placard loads shown on Placard Survey Form – 48 Placarded Vehicles

- 24 miles x 48 Placarded Vehicles = 1,152 miles traveled by placarded vehicles in Wood County.

- 1,152 miles/1,000,000 = 0.001152 million miles

- 0.001152 million miles x .608 = .0007004 accidents with placard loads

- 20 hours of survey time/24 hours = .83

- .0007004 accidents/.83 hours x 365 days = .308 estimated number of accidents with placard loads per year

- 100/.308 accidents/year = 324.68/100 = 3.24

CONCLUSION: One hazardous materials transportation accident could occur on Route 50 approximately every 3.24 years.

ROUTE 14

- A total of 27 miles of Route 14 passes through Wood County.

- Number of placard loads shown on Placard Survey Form – 24 Placarded Vehicles

- 27 miles x 24 Placarded Vehicles = 648 miles traveled by placarded vehicles in Wood County.

- 648 miles/1,000,000 = 0.000648 million miles

- 0.000648 million miles x .608 = .0003939 accidents with placard loads

- 16 hours of survey time/24 hours = .67

- .0003939 accidents/.67 hours x 365 days = .96 estimated number of accidents with placard loads per year

- 100/.96 accidents/year = 104.16/100 = 1.04

CONCLUSION: One hazardous materials transportation accident could occur on Route 14 approximately every 1.04 years.

ROUTE 47

- A total of 15 miles of Route 47 passes through Wood County.

- Number of placard loads shown on Placard Survey Form – 7 Placarded Vehicles

- 15 miles x 7 Placarded Vehicles = 105 miles traveled by placarded vehicles in Wood County.

- 105 miles/1,000,000 = 0.000105 million miles

- 0.000105 million miles x .608 = .0000638 accidents with placard loads

- 8 hours of survey time/24 hours = .33

- .0000638 accidents/.33 hours x 365 days = .07 estimated number of accidents with placard loads per year

- 100/.07 accidents/year = 1,428.57/100 = 14.28

CONCLUSION: One hazardous materials transportation accident could occur on Route 47 approximately every 14.28 years.

ROUTE 31

- A total of 16 miles of Route 31 passes through Wood County.

- Number of placard loads shown on Placard Survey Form – 21 Placarded Vehicles

- 16 miles x 21 Placarded Vehicles = 336 miles traveled by placarded vehicles in Wood County.

- 336 miles/1,000,000 = 0.000336 million miles

- 0.000336 million miles x .608 = .0002042 accidents with placard loads

- 8 hours of survey time/24 hours = .33

- .0002042 accidents/.33 hours x 365 days = .226 estimated number of accidents with placard loads per year

- 100/.226 accidents/year = 442.48/100 = 4.42

CONCLUSION: One hazardous materials transportation accident could occur on Route 31 approximately every 4.42 years.

ROUTE 95

- A total of 3 miles of Route 95 passes through Wood County.

- Number of placard loads shown on Placard Survey Form – 36 Placarded Vehicles

- 3 miles x 36 Placarded Vehicles = 108 miles traveled by placarded vehicles in Wood County.

- 108 miles/1,000,000 = 0.000108 million miles

- 0.000108 million miles x .608 = .0000656 accidents with placard loads

- 8 hours of survey time/24 hours = .33

- .0000656 accidents/.33 hours x 365 days = .0726 estimated number of accidents with placard loads per year

- 100/.0726 accidents/year = 1,377/100 = 13.77

CONCLUSION: One hazardous materials transportation accident could occur on Route 95 approximately every 13.77 years.

ROUTE 68

- A total of 32 miles of Route 68 passes through Wood County.

- Number of placard loads shown on Placard Survey Form – 9 Placarded Vehicles

- 32 miles x 9 Placarded Vehicles = 288 miles traveled by placarded vehicles in Wood County.

- 288 miles/1,000,000 = 0.000288 million miles

- 0.000288 million miles x .608 = .0001751 accidents with placard loads

- 8 hours of survey time/24 hours = .33

- .0001751 accidents/.33 hours x 365 days = .194 estimated number of accidents with placard loads per year

- 100/.194 accidents/year = 515.46/100 = 5.15

CONCLUSION: One hazardous materials transportation accident could occur on Route 68 approximately every 5.15 years.

7TH STREET

- A total of 3 miles of 7th Street passes through Wood County.
- Number of placard loads shown on Placard Survey Form – 6 Placarded Vehicles
- 3 miles x 6 Placarded Vehicles = 18 miles traveled by placarded vehicles in Wood County.
- 18 miles/1,000,000 = 0.000018 million miles
- 0.000018 million miles x .608 = .0000109 accidents with placard loads
- 16 hours of survey time/24 hours = .67
- .0000109 accidents/.67 hours x 365 days = .059 estimated number of accidents with placard loads per year
- 100/.059 accidents/year = 1,695/100 = 16.95

CONCLUSION: One hazardous materials transportation accident could occur on 7th Street approximately every 16.95 years.

ROUTE 892

- A total of 10 miles of Route 892 passes through Wood County.

- Number of placard loads shown on Placard Survey Form – 26 Placarded Vehicles

- 10 miles x 26 Placarded Vehicles = 260 miles traveled by placarded vehicles in Wood County.

- 260 miles/1,000,000 = 0.00026 million miles

- 0.00026 million miles x .608 = .00015808 accidents with placard loads

- 12 hours of survey time/24 hours = .50

- .00015808 accidents/.5 hours x 365 days = .1154 estimated number of accidents with placard loads per year

- 100/.1154 accidents/year = 866.55/100 = 8.67

CONCLUSION: One hazardous materials transportation accident could occur on Route 892approximately every 8.67 years.

III. RAILWAY ANALYSIS

CSX Transportation operates a rail transportation system in Wood County which serves primarily the industrial operations located in the Washington Bottom area of southern Wood County. The railroad parallels the Ohio River with two river crossings: one over the Little Kanawha River near its confluence with the Ohio River and a bridge across the Ohio River between the Cities of Parkersburg, West Virginia and Belpre, Ohio.

IIIA. NATIONAL AND STATE STATISTICS

Railroads have always been a popular transport of large quantities of commodities because of their low cost and relative speed. The number of accidents occurring on railroads has always been low in comparison to roadway incidents. The following table shows the number and type of train accidents which have occurred over the past four years.

Cause of Train Accidents – 2007 – 2010

CAUSE	2007	2008	2009	2010
Track	932	858	666	670
Human Factor	1,046	909	654	640
Equipment	326	320	267	246
Signal	49	52	50	66
Other	339	339	269	269
TOTAL	2,692	2,478	1906	1891

Figure 11 - National Cause of Train Accidents – 2007 – 2010

During the past four years in West Virginia, the State has seen a fairly stable trend with regards to the number of train accidents, the number of casualties, and the number of non-fatal injuries. The following table shows these details.

WV	2007	2008	2009	2010
Incidents	**24**	**24**	**17**	**30**
Casualties	**7**	**6**	**9**	**5**
Non-Fatal	**62**	**66**	**89**	**59**

Figure 12 -Train Incidents in West Virginia – 2007 - 2010

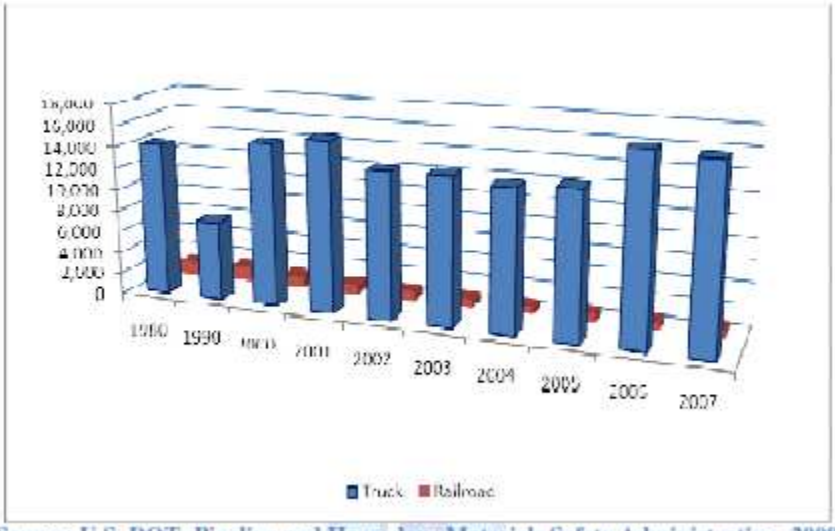
Twenty percent of the nation's chemicals are moved each year by rail. But railroads carry an even higher percentage of those chemicals which are essential to the public health and living in the United States. Rails move 22 percent, or 35,000 carloads annually of chlorine which is an essential element used to purify more than half the nation's water supplies and contained in 85 percent of all pharmaceuticals. Other hazardous materials moved by rail include: fuels, fertilizers, disinfectants and chemicals, along with chemicals used in food, glass, medicines, weapons, and munitions.

The transportation of hazardous materials is an important problem due to their pervasiveness. Hazardous materials, or dangerous goods, include explosives, gases, flammable liquids and solids, oxidizing substances, poisonous and infectious materials, radioactive materials, corrosive substances, and hazardous wastes. Due to the nature of most chemicals, they can pose hazards of explosion, fire, and toxic release.

Railroads have an outstanding record in delivering hazardous materials – 99.998 percent of all rail cars containing hazardous materials arrived safely at their destination without any release due to an accident. Hazmat rate accident has

declined 88 percent from 1980 to 2007 and 39 percent since 1990. Railroads and trucks carry roughly equal tonnage of hazmat ton-mileage, but trucks have 16 times more hazmat releases than railroads. Statistically, railroads are the safer form of transportation for hazardous materials.

Figure 4 - Truck vs. Railroad Hazmat Incidents: 1980 - 2007



Source: U.S. DOT- Pipeline and Hazardous Materials Safety Administration -2008

IIIB. LOCAL STATISTICS

Railroad data regarding commodity flow information for Wood County was obtained from CSX Transportation. During 2010 there were a total of 11,136 shipments of hazardous materials traffic. This number excludes intermodal shipments (trailer or container on flat cars). Intermodal hazardous materials shipments are non-bulk and less than 55 gal/package formats

An analysis of the following density reports shows that 25 products accounted for 10,984 carloads for 2010. This represents 99 percent of the total carloads handled. These products are as follows:

Commodity	Hazard Class	Carloads (2010)	Carload % of Total Hazmat
SODIUM HYDROXIDE SOLUTION	9	2,139	19.21%
CHLORINE	2.3	1,589	14.27%
HYDROCHLORIC ACID	8	1,434	12.88%
LIQUIEFIED PETROLEUM GASES	2.1	1,410	12.66%
HEXAMETHYLENEDIAMINE, SOLID	8	537	4.82%
ISOPRENE, STABLIZED	3	532	4.78%
GASOLINE	3	494	4.44%
CHLORODFLUOROMETHANE	2.2	479	4.3%
ENVIRONMENTALLY HAZARDOUS SUBSTANCES SOLIC, N.O.S.	9	476	4.27%
OTHER REGULATED SUBSTANTCES, LIQUID, N.O.S.	9	362	3.25%
TOLUENE DIISOCYANATE	6.1	329	2.95%
SODIUM HYDROXIDE SOLID	8	279	2.51%
PROPYLENE OXIDE	3	231	2.07%
BUTADIENES, STABILIZED	2.1	132	1.19
ACRYLONITRILE, STABILIZED	3	86	<1%
COMBUSTIBLE LIQUID, N.O.S.	CL	67	<1%
CTCLOHEXANE	3	66	<1%
SULFURIC ACID	8	57	<1%
ELEVATED TEMPERATURE LIQUID, N.O.S.	9	53	<1%
BUTRALDEHYDE	3	48	<1%
ELEVATED TEMPERATURE LIQUID, FLAMMABLE, N.O.S.	3	45	<1%
ETHANOL	3	44	<1%
BUTYL ACRYLATES, STABILIZED	3	38	<1%
ISOPROPENYLBENZENE	3	29	<1%
CORROSIVE LIQUID TOXIC, N.O.S.	8	28	<1%
TOTAL		10,984	99%

Figure 13 - Top 25 HAZMAT Materials in Wood County By Rail - 2010

IIIC. RAILWAY SUMMARY

The following conclusions can be made regarding rail facilities and hazardous materials in Wood County.

- Due to the overall low probability of rail accidents throughout the county and in West Virginia, Wood County has a much more likely chance to experience a hazardous materials incident on a roadway as opposed to a rail incident.
- The top four hazardous materials transported through Wood County in 2010 were the same top four as those transported through the County in 1998.
- The Wood County Office of Emergency Management and the Local Emergency Planning Committee should develop a sound relationship with the CSX Transportation in order to supplement capabilities should there be a hazardous material incident on the railways in the County.

Please note that the information contained in this chart is solely for emergency planning purposes and may not be used for any other purpose.

IV. AIR ANALYSIS

The Mid Ohio Valley Airport is located approximately five miles north of Parkersburg on State Route 31 near the intersection with State Route 68. The Airport provides private and commercial air service to the Wood County area. Discussions with Airport officials confirm that no hazardous materials are transported in or out of Wood County by air transport.

V.WATERWAY ANALYSIS

VA. STATE STATISTICS

The State of West Virginia borders 277 miles of the Ohio River's 981 mile length. The State also consists of the entire 91 mile navigable length of the Kanawha River, four navigable miles of the Little Kanawha River, and the upper

37 miles of the Monongahela River. The Big Sandy River flows along the western border of the State with 10 miles used for commercial navigation. West Virginia is the second leading coal producing state and barge transportation is a major factor in moving coal to markets efficiently and effectively.

In 2008 74 million tons of commodities (mostly coal, petroleum, aggregates, and chemicals) moved to, from, and within West Virginia. These commodities had a combined value of $4.6 billion. Coal comprised 77 percent of this tonnage followed by petroleum products at 10 percent.

West Virginia 2008 Commodities Moved From, to and within the State
(values in millions of dollars)

Commodity	Shipped	Received	Within	Total	Value
Coal	37,852,214	10,232,231	9,007,558	57,092,003	$2,183
Petroleum	5,567,634	796,648	986,548	7,350,830	$1,053
Crude Petroleum	0	**	0	**	**
Aggregates	1,511,662	4,629,926	154,660	6,296,248	$293
Grain	**	0	0	0	$0
Chemicals	227,663	908,307	69,876	1,205,846	$526
Ores/Minerals	**	574,482	**	574,482	$46
Iron/Steel	113,317	277,804	**	391,121	$194
Other	50,090	1,070,817	24,197	1,145,104	$320
TOTAL	45,322,580	18,490,215	10,242,839	74,055,634	$4,615

*** Insufficient barge operators to release this tonnage – included in "Other Commodities"*

Source: U.S. Army Corps of Engineers Waterborne Commerce Statistics

Figure 14 - WV 2008 Commodity Movement From, To, and Within the State

An analysis of this chart shows that over 45 million tons of commodities were shipped on the river system out of state. Almost 38 million tons of these commodities consisted of coal.

VB. LOCAL STATISTICS

Wood County has two important navigable rivers: the Ohio River and the Little Kanawha River. The Ohio River forms the County's western boundary with the State of Ohio, and the Little Kanawha River passes through the County to join the Ohio River at Parkersburg. Both are important venues for recreational and commercial river traffic. The Ohio River is particularly important for commercial traffic.

Representatives from the Huntington District of the US Army Corps of Engineers (USACE) were contacted to obtain commodity flow information on the waterways. The USACE provided the following list of commodities that passed through Wood County during the year 2008, 2009, and 2010.

Publication Group	Group Name	2010	2009	2008
1100	Coal & Ignite	34,202,274	31,062,957	34,776,820
1200	Coal Coke	311,751	448,3971	670,087
2100 & 2990	Crude Petroleum & Other Petroleum Products Not Elsewhere Classified	62,409	82,351	75,831
2211 &2221	Gasoline & Kerosene	103,291	115,556	226,832
2330	Distillate Fuel Oil	282,565	195,561	286,017
2340	Residual Fuel Oil	210,348	325,869	326,124
2350	Lube Oils and Greases	427,426	464,387	397,166
2410 &2640	Petro, Jelly & Waxes & Hydrocarbon & Petrol Gases, Liquefied and Gaseous	26,172	38,103	74,981
2429	Naphtha & Solvents	51,000	NA	34,460
2430	Asphalt, Tar, & Pitch	137,452	NA	162,664
2429 & 2439	Naphtha & Solvents & Asphalt, Tar & Pitch	NA	178,833	NA
2540	Petroleum Coke	95,842	135,188	245,493
2640 & 2990	Hydrocarbon & Petrol Gases, Liquefied and Gaseous & Other Petroleum Products	NA	27,156	10,735
3110	Nitrogenous Fert.	245,716	250,993	215,855
3120 & 3130	Phosphatic & Potassic Fertilizers	11,093	NA	NA
3130	Potassic Fertilizers	NA	NA	25,435
3190	Fert. & Mixes NEC	62,469	NA	21,371
3130& 3190	Potassic Fertilizers & Other Fertilizers and Mixers	NA	37,789	NA
3212 & 3219	Benzene & Toulene & Other Hydrocarbons	253,893	172,829	NA
3212	Benzene & Toulene	NA	NA	23,340

3219	Other Hydrocarbons	NA	NA	205,745
3220	Alcohols	109,330	91,825	135,830
3230 & 3260	Carboxylic Acids & Organic Comp. NEC	68,108	83,250	NA
3230	Carboxylic Acids	NA	NA	93,611
3260	Organic Comp. NEC	NA	NA	67,077
3273 & 3279	Ammonia & Other Inorganic Chemicals	62,636	149,178	NA
3272 & 3274	Ammonia & Sodium Hydroxide	NA	149,178	143,798
3274	Sodium Hydroxide	83,047	NA	NA
3275	Inorg. Elem., Oxides, & Halogen Salts	99,700	96,937	104,283
3276	Metallic Salts	26,535	24,117	28,383
3279	Inorganic Chemicals NEC	NA	13,596	22,246
3299	Chemical Products NEC	NA	17,775	29,832
4161 & 4323	Wood Chips & Gypsum	272,664	208,558	NA
4161 & 4170	Wood Chips & Wood in the Rough	NA	NA	4,668
4322 & 4335	Limestone & Waterway Improvement Materials	1,309,978	716,253	NA
4322	Limestone	NA	NA	771,723
4323	Gypsum	NA	NA	176,455
4331	Sand & Gravel	801,000	981,760	822,480
4410	Iron Ore	45,793	50,236	1,020,411
4420	Iron & Steel Scrap	273,861	315,693	304,990
4650	Aluminum Ore	537,923	511,349	762,475
4670	Manganese Ore	67,342	47,453	94,335
4690	Non-Ferrous Ores NEC	58,767	32,086	60,957
4782	Clay & Refrac. Mat.	75,496	57,716	133,584
4860	Slag	15,099	28,640	26,315
4900	Non-Metal. Min. NEC	783,682	765,343	692,746
5210, 5220 & 5290	Lime, Cement, Concrete & Misc. Mineral Products	946,785	796,211	920,912
5312	Pig Iron	241,844	160,743	313,978
5315	Ferro Alloys	472,329	298,205	648,326
5320 & 5390	I&S Primary Forms & Primary I&S NEC	49,912	10,560	293,792
5330	I&S Plates & Sheets	172,437	103,028	588,423
5360	I&S Bars & Shapes	93,201	37,407	32,053
5370	I & S Pipe & Tube	44,192	115,307	96,214
5422 & 5429	Aluminum & Other Smelted Products	102,841	12,105	51,098
5480	Fab. Metal Products	62,093	167,129	196,390
6241 & 6344	Wheat & Corn	NA	NA	14,321
6522	Soybeans	126,619	105,672	86,253
6590, 6782 & 6865	Oilseeds & Animal Feed & Molasses	47,105	39,872	53,546
7120 & 7900	Electrical Machinery & Other Manufactured Products	8,974	76,689	NA
7110, 7120 & 7900	Machinery & Electrical Machinery & Other Manufactured Products	NA	NA	174,993
	TOTAL	43,542,994	39,650,662	46,745,554

Figure 15 - Waterway Commodity Flow – Wood County – 2008, 2009, and 2010 - USACE

VC. WATERWAY SUMMARY

The following conclusions can be made regarding waterways and hazardous materials in Wood County.

- Due to the overall low probability of waterway accidents throughout the county and in West Virginia, Wood County has a much more likely chance to experience a hazardous materials incident on a roadway as opposed to a waterway incident.
- Over the past three years coal has been the most frequently transported material through Wood County.
- The Wood County Office of Emergency Management and the Local Emergency Planning Committee should develop a sound relationship with the USACE in order to supplement capabilities should there be a hazardous material incident on the Ohio and/or Little Kanawha Rivers in the County.

Please note that the information contained in this chart is solely for emergency planning purposes and may not be used for any other purpose.

VI. VULNERABILITY ANALYSIS

As part of this Study, a vulnerability analysis of particular sites and facilities in Wood County was conducted. Vulnerable sites were identified and inventoried according to the following issues:

- Involvement in emergency response operations
- Involvement in managing emergency recovery operations
- SARA Tier Two Sites
- Potential loss of life
- Involvement of increased/immobile population.

Given these concerns, the following facilities were identified as vulnerable and should be provided special consideration in all future emergency planning activities.

Tier Two Sites

- A & D Oil Company
- Air Products & Chemicals
- Airgas Mid America
- Allegheny Power
- Army Aviation Support Facility
- AT&T
- B& R Resources
- BFS Petroleum Products
- Blauser Well Service
- Chris Oil Co.
- CMX Gas
- Columbia Gas Transmission
- Concepts West
- Con-Way Freight
- Dupoint
- Equipment Depot Ohio
- Essroc Ready Mix
- Exco Resources
- Exel
- Fenton Art Glass Co.
- Ferrellgas
- Frontier Communications
- Hall's Semple Propane

- HD Wells
- Heinrich Enterprises
- Home Depot
- Ice House Inc.
- Linde Gas
- Lowe's
- Mineral Wells PSD
- Murphytown-Hammett Oil Co.
- Parkersburg Newspapers
- Parkersburg Utility Board
- Penske Truck Leasing
- PWP Industries
- Quad Willow Island
- SABIC Innovative Plastics
- Sam's Club
- Sanitary Linen
- Schwans
- Sentinel Transportation
- SimEx Vinyl Extrusions
- Speedway
- Sun Valley Oil & Gas
- Tetra Chemicals
- Triad Hunter LLC
- Union Williams PSD
- UPS Ground Freight, Inc.
- Valley National Gases (Matheson)
- Vienna, City of

- Walker Machinery
- Waste Management
- West Virginia Paving
- Williamstown, City of
- XTO Energy
- Z Oil Co.

Emergency Response Organizations

- Wood County Office of Emergency Management
- Wood County 9-1-1 Center
- Wood County Sheriff's Department
- Parkersburg Police and Fire Departments
- Vienna Police and Fire Department
- Williamstown Police Department
- West Virginia State Police Detachment
- Waverly Volunteer Fire Department
- Eastwood Volunteer Fire Department
- Deerwalk Volunteer Fire Department
- Blennerhassett Volunteer Fire Department
- Washington Bottom Volunteer Fire Department
- Williamstown Volunteer Fire Department
- Lubeck Volunteer Fire Department
- Mineral Wells Volunteer Fire Department
- Pond Creek Volunteer Fire Department

Other Government Facilities

- Wood County Holding Center
- US Bureau of Public Debt Complex
- Claywood Park Public Service District

- Lubeck Public Service District
- Union-Williams Public Service District
- Camden Clark Medical Center (two campuses)

Recreational Facilities

- Mountwood Park
- Parkersburg City Park
- Southwood Park
- Fort Boreman Park
- Veterans Park
- Williamstown Park
- Blennerhassett Island
- YMCA of Parkersburg
- Boys and Girls Club of Parkersburg
- Parkersburg High School Stadium Field
- Erickson Field

Educational Facilities

- West Virginia University-Parkersburg
- Ohio Valley University
- National College
- Mountain State College
- Parkersburg High School
- Parkersburg South High School
- Williamstown High School
- Parkersburg Catholic High School
- Blennerhassett Middle School
- Edison Middle School
- Hamilton Middle School

- Jackson Middle School
- Van Devender Middle School
- Parkersburg Catholic Elementary School
- North Christian School
- Parkersburg Academy
- Parkersburg Christian School
- Wood County Christian School
- Blennerhasset Elementary School
- Criss Elementary School
- Emerson Elementary School
- Fairplains Elementary School
- Franklin Elementary School
- Gihon Elementary School
- Greenmont Elementary School
- Kanawha Elementary School
- Lubeck Elementary School
- Madison Elementary School
- Martin Elementary School
- McKinley Elementary School
- Mineral Wells Elementary School
- Neale Elementary School
- Vienna Elementary School
- Waverly Elementary School
- Williamstown Elementary School
- Worthington Elementary School
- TREK Center
- Wood County Vocational/Technical Center

- Caperton Center for Applied Technology

Child Care Centers

- Aunt Sissy's Day Care
- Bundles of Joy Day Care
- Cedar Grove Head Start
- Family Development Head Start
- Homecrest Head Start
- Jack & Jill Day Nursery
- Joyful Sound
- Little Tykes Academy
- Lovingkindness Child Care Center
- Miss Becky's Learning Center
- Parkersburg Day Nursery
- Precious Angels Day Care
- Tiny Creations
- Heaven Sent Day Care
- Vienna Child Care
- Washington Head Start
- Wee Care Day Care

Shopping Centers

- Grand Central Mall
- Park Shopping Center
- Stores of Grand Central Avenue
- Wal-Mart Complex – Vienna and Mineral Wells
- Southgate Shopping Center
- K-Mart Shopping Plaza – Vienna and Parkersburg
- Lowe's – Vienna and Parkersburg

- Home Depot

VII. EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT

The Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) establishes requirements for Federal, State and local governments, Indian Tribes, and industry regarding emergency planning and "Community Right-To-Know" reporting on hazardous and toxic chemicals. These provisions help increase the public's knowledge and access to information on chemicals at individual sites, their uses, and releases into the environment.

EPCRA has four major provisions:

- Emergency planning
- Emergency release notification
- Hazardous chemical storage reporting requirements
- Toxic chemical release inventory

VIIA. EMERGENCY PLANNING

Emergency response plans contain information community officials can use at the time of a chemical accident. Community emergency response plans for chemical accidents must:

- Identify facilities and transportation routes of extremely hazardous substances
- Describe emergency response procedures, on and off site
- Designate a community coordinator and facility coordinator to implement the plan
- Outline emergency notification procedures

- Describe how to determine the probable affected area and population by releases
- Describe local emergency equipment and facilities and the person responsible for them
- Outline evacuation plans
- Provide a training program for emergency responders
- Provide methods and schedules for exercising emergency response plans.

VIIB. EMERGENCY NOTIFICATION REQUIREMENTS

Facilities must immediately notify the Local Emergency Planning Committee (LEPC) and the Statewide Emergency Response Commission (SERC) if there is a release into the environment of a hazardous substance that is equal to or exceeds the minimum reportable quantity that is set in the regulations. This requirement covers the 356 extremely hazardous substances as well as more than 700 hazardous substances subject to the emergency notification requirement under CERCLA. The emergency notification needs to include:

- Chemical name
- Indication of whether the substance is extremely hazardous
- Estimate of quantity released into the environment
- Time and duration of the release
- Whether the release occurred into air, water, and/or land
- Any known or anticipated acute or chronic health risks associated with the emergency
- Proper precautions, such as evacuation or sheltering in place
- Name and contact information for contact person.

VIIC. HAZARDOUS CHEMICAL STORAGE REPORTING REQUIREMENTS

Under Occupational Safety and Health Administration (OSHA) regulations, employers must maintain a material safety data sheet (MSDS) for any hazardous chemicals stored or used in the work place. Facilities that have MSDSs for chemicals held above certain quantities must submit either copies of their MSDS or a list of MSDS chemicals to the SERC, LEPC, and local fire department. Facilities must provide either a Tier I or Tier II form.

Tier I form includes the following aggregate information for each applicable hazard category:

- Estimate of the maximum amount of chemicals for each category present at any facility at any time during the preceding calendar year
- Estimate of the average daily amount of chemicals in each category
- General location of hazardous chemicals in each category.

The Tier II report requires the same information as listed in the Tier I form as well as the following:

- Chemical name or common name of each specific chemical
- Estimate of the maximum amount of the chemical present at any time during the preceding calendar year and the average daily amount
- Brief description of the manner of storage of the chemical
- Location of the chemical at the facility
- Indication as to whether the owner elects to withhold location information from disclosure to the public.

VIID. TOXIC CHEMICAL RELEASE INVENTORY

EPCRA requires certain facilities to complete a Toxic Release Inventory Form (TRI) annually for specified chemicals. The form covers the releases and other waste management of toxic chemicals that occurred during the preceding

calendar year. One purpose of this is to inform the public and government officials about the release and other waste management of toxic chemicals.

VIII.CONCLUSIONS AND RECOMMENDATIONS

- Based upon local, state, and national data, the chance of a hazardous materials accident occurring is greatest on the roadways as opposed to railways, waterways, or airways.
- Flammables were by far the most popular hazardous material being transported by roadway.
- There were 59 different hazardous materials being transported on the waterways in Wood County.
- The County had 25 different hazardous materials being transported by railway.

In order for Wood County and its emergency responders to remain aware of what is going on in the County, this Commodity Flow Study should be updated every three to five years. In addition, emergency responders should be properly and continually trained in the response to incidents involving hazardous materials. First responders should also work together and should collaborate with CSX Transportation and the Army Corps of Engineers. Emergency exercises should be designed regarding a hazardous incident and should involve materials that are being transported through Wood County.

References:

Army Corp of Engineers
CSX Transportation
Transcaer
US Environmental Protection Agency
US Department of Transportation
Waterways Council System
WV Department of Transportation

APPENDIX 1

EXTREMELY HAZARDOUS CHEMICALS

40 CFR Part 355 Appendix A [Alphabetical Order]
Extremely Hazardous Chemicals

CAS No.	Chemical name	Notes	Reportable quantity * (pounds)	Threshold planning quantity (pounds)
75-86-5	Acetone Cyanohydrin.	.....	10	1,000
1752-30-3	Acetone Thiosemicarbazide.	.....	1,000	1,000/10,000
107-02-8	Acrolein.....	.....	1	500
79-06-1	Acrylamide.....	l	5,000	1,000/10,000
107-13-1	Acrylonitrile.....	l	100	10,000
814-68-6	Acrylyl Chloride..	h	100	100
111-69-3	Adiponitrile.....	l	1,000	1,000
116-06-3	Aldicarb.....	c	1	100/10,000
309-00-2	Aldrin.....	.....	1	500/10,000
107-18-6	Allyl Alcohol.....	.....	100	1,000
107-11-9	Allylamine.....	.....	500	500
20859-73-8	Aluminum Phosphide	b	100	500
54-62-6	Aminopterin.....	.....	500	500/10,000
78-53-5	Amiton.....	.....	500	500
3734-97-2	Amiton Oxalate....	.....	100	100/10,000
7664-41-7	Ammonia.....	l	100	500
300-62-9	Amphetamine.....	.....	1,000	1,000
62-53-3	Aniline.....	l	5,000	1,000
88-05-1	Aniline, 2,4,6-Trimethyl-.	.....	500	500
7783-70-2	Antimony Pentafluoride.	.....	500	500
1397-94-0	Antimycin A.....	c	1,000	1,000/10,000
86-88-4	ANTU.....	.....	100	500/10,000
1303-28-2	Arsenic Pentoxide.	.....	1	100/10,000
1327-53-3	Arsenous Oxide....	h	1	100/10,000
7784-34-1	Arsenous Trichloride	.....	1	500
7784-42-1	Arsine.....	.....	100	100
2642-71-9	Azinphos-Ethyl....	.....	100	100/10,000
86-50-0	Azinphos-Methyl...	.....	1	10/10,000
98-87-3	Benzal Chloride...	.....	5,000	500
98-16-8	Benzenamine, 3-(Trifluoromethyl)-	.....	500	500
100-14-1	Benzene, 1-(Chloromethyl)-4-Nitro-.	.....	500	500/10,000
98-05-5	Benzenearsonic Acid.	.....	10	10/10,000
3615-21-2	Benzimidazole, 4,5-Dichloro-2-	g	500	500/10,000

	(Trifluoromethyl)-.			
98-07-7	Benzotrichloride..	.....	10	100
100-44-7	Benzyl Chloride...	.....	100	500
140-29-4	Benzyl Cyanide....	h	500	500
15271-41-7	Bicyclo[2.2.1]Heptane-2-Carbonitrile, 5-Chloro-6-((((Methylamino)Carbonyl)Oxy)Imino)-, (1s-(1-alpha,2-beta,4-alpha,5-alpha,6E))-.	.....	500	500/10,000
534-07-6	Bis(Chloromethyl) Ketone.	.....	10	10/10,000
4044-65-9	Bitoscanate.....	.....	500	500/10,000
10294-34-5	Boron Trichloride.	.....	500	500
7637-07-2	Boron Trifluoride.	.....	500	500
353-42-4	Boron Trifluoride Compound With Methyl Ether (1:1)	.....	1,000	1,000
28772-56-7	Bromadiolone.....	.....	100	100/10,000
7726-95-6	Bromine.....	l	500	500
1306-19-0	Cadmium Oxide.....	.....	100	100/10,000
2223-93-0	Cadmium Stearate..	c	1,000	1,000/10,000
7778-44-1	Calcium Arsenate..	.....	1	500/10,000
8001-35-2	Camphechlor.....	.....	1	500/10,000
56-25-7	Cantharidin.....	.....	100	100/10,000
51-83-2	Carbachol Chloride	.....	500	500/10,000
26419-73-8	Carbamic Acid, Methyl-, O-(((2,4-Dimethyl-1, 3-Dithiolan-2-yl)Methylene)Amino)-.	d	1	100/10,000
1563-66-2	Carbofuran.....	.....	10	10/10,000
75-15-0	Carbon Disulfide..	l	100	10,000
786-19-6	Carbophenothion...	.....	500	500
57-74-9	Chlordane.....	.....	1	1,000
470-90-6	Chlorfenvinfos....	.....	500	500
7782-50-5	Chlorine.....	.....	10	100
24934-91-6	Chlormephos.....	.....	500	500
999-81-5	Chlormequat Chloride.	h	100	100/10,000
79-11-8	Chloroacetic Acid.	.....	100	100/10,000
107-07-3	Chloroethanol.....	.....	500	500
627-11-2	Chloroethyl Chloroformate.	.....	1,000	1,000
67-66-3	Chloroform.....	l	10	10,000
542-88-1	Chloromethyl Ether	h	10	100
107-30-2	Chloromethyl Methyl Ether.	c	10	100
3691-35-8	Chlorophacinone...	.....	100	100/10,000
1982-47-4	Chloroxuron.....	.....	500	500/10,000

21923-23-9	Chlorthiophos.....	h	500	500
10025-73-7	Chromic Chloride..	.....	1	1/10,000
62207-76-5	Cobalt, ((2,2[prime]-(1,2-Ethanediylbis (Nitrilomethylidyne)) Bis(6-Fluorophenolato)) (2-)-N,N[prime],O,O[prime])-.	.....	100	100/10,000
10210-68-1	Cobalt Carbonyl...	h	10	10/10,000
64-86-8	Colchicine.....	h	10	10/10,000
56-72-4	Coumaphos.....	.....	10	100/10,000
5836-29-3	Coumatetralyl.....	.....	500	500/10,000
95-48-7	Cresol, o-.....	.....	100	1,000/10,000
535-89-7	Crimidine.....	.....	100	100/10,000
4170-30-3	Crotonaldehyde....	.....	100	1,000
123-73-9	Crotonaldehyde, (E)-.	.....	100	1,000
506-68-3	Cyanogen Bromide..	.....	1,000	500/10,000
506-78-5	Cyanogen Iodide...	.....	1,000	1,000/10,000
2636-26-2	Cyanophos.....	.....	1,000	1,000
675-14-9	Cyanuric Fluoride.	.....	100	100
66-81-9	Cycloheximide.....	.....	100	100/10,000
108-91-8	Cyclohexylamine...	l	10,000	10,000
17702-41-9	Decaborane(14)....	.....	500	500/10,000
8065-48-3	Demeton.....	.....	500	500
919-86-8	Demeton-S-Methyl..	.....	500	500
10311-84-9	Dialifor.....	.....	100	100/10,000
19287-45-7	Diborane.....	.....	100	100
111-44-4	Dichloroethyl ether.	.....	10	10,000
149-74-6	Dichloromethylphenylsilane.	.....	1,000	1,000
62-73-7	Dichlorvos.....	.....	10	1,000
141-66-2	Dicrotophos.....	.....	100	100
1464-53-5	Diepoxybutane.....	.....	10	500
814-49-3	Diethyl Chlorophosphate.	h	500	500
71-63-6	Digitoxin.....	c	100	100/10,000
2238-07-5	Diglycidyl Ether..	.....	1,000	1,000
20830-75-5	Digoxin.....	h	10	10/10,000
115-26-4	Dimefox.....	.....	500	500
60-51-5	Dimethoate.....	.....	10	500/10,000
2524-03-0	Dimethyl Phosphorochloridothioate.	.....	500	500
77-78-1	Dimethyl sulfate..	.....	100	500
75-78-5	Dimethyldichlorosilane.	h	500	500
57-14-7	Dimethylhydrazine.	.....	10	1,000
99-98-9	Dimethyl-p-Phenylenediamine.	.....	10	10/10,000
644-64-4	Dimetilan.....	d	1	500/10,000
534-52-1	Dinitrocresol.....	.....	10	10/10,000

88-85-7	Dinoseb.....	.....	1,000	100/10,000
1420-07-1	Dinoterb.....	.....	500	500/10,000
78-34-2	Dioxathion.....	.....	500	500
82-66-6	Diphacinone.....	.....	10	10/10,000
152-16-9	Diphosphoramide, Octamethyl-.	.....	100	100
298-04-4	Disulfoton.....	.....	1	500
514-73-8	Dithiazanine Iodide.	.....	500	500/10,000
541-53-7	Dithiobiuret.....	.....	100	100/10,000
316-42-7	Emetine, Dihydrochloride.	h	1	1/10,000
115-29-7	Endosulfan.....	.....	1	10/10,000
2778-04-3	Endothion.....	.....	500	500/10,000
72-20-8	Endrin.....	.....	1	500/10,000
106-89-8	Epichlorohydrin...	l	100	1,000
2104-64-5	EPN.....	.....	100	100/10,000
50-14-6	Ergocalciferol....	c	1,000	1,000/10,000
379-79-3	Ergotamine Tartrate.	.....	500	500/10,000
1622-32-8	Ethanesulfonyl Chloride, 2-Chloro-.	.....	500	500
10140-87-1	Ethanol, 1,2-Dichloro-, Acetate.	.....	1,000	1,000
563-12-2	Ethion.....	.....	10	1,000
13194-48-4	Ethoprophos.....	.....	1,000	1,000
538-07-8	Ethylbis(2-Chloroethyl)Amine.	h	500	500
371-62-0	Ethylene Fluorohydrin.	c, h	10	10
75-21-8	Ethylene Oxide....	l	10	1,000
107-15-3	Ethylenediamine...	.....	5,000	10,000
151-56-4	Ethyleneimine.....	.....	1	500
542-90-5	Ethylthiocyanate..	.....	10,000	10,000
22224-92-6	Fenamiphos.....	.....	10	10/10,000
115-90-2	Fensulfothion.....	h	500	500
4301-50-2	Fluenetil.....	.....	100	100/10,000
7782-41-4	Fluorine.....	k	10	500
640-19-7	Fluoroacetamide...	j	100	100/10,000
144-49-0	Fluoroacetic Acid.	.....	10	10/10,000
359-06-8	Fluoroacetyl Chloride.	c	10	10
51-21-8	Fluorouracil.....	.....	500	500/10,000
944-22-9	Fonofos.....	.....	500	500
50-00-0	Formaldehyde.....	l	100	500
107-16-4	Formaldehyde Cyanohydrin.	h	1,000	1,000
23422-53-9	Formetanate Hydrochloride.	d, h	1	500/10,000
2540-82-1	Formothion.....	.....	100	100
17702-57-7	Formparanate.....	d	1	100/10,000
21548-32-3	Fosthietan.....	.....	500	500
3878-19-1	Fuberidazole.....	.....	100	100/10,000
110-00-9	Furan.....	.....	100	500
13450-90-3	Gallium	.....	500	500/10,000

	Trichloride.			
77-47-4	Hexachlorocyclopentadiene.	h	10	100
4835-11-4	Hexamethylenediamine, N,N[prime]-Dibutyl-.	.....	500	500
302-01-2	Hydrazine.....	.....	1	1,000
74-90-8	Hydrocyanic Acid..	.....	10	100
7647-01-0	Hydrogen Chloride (gas only).	l	5,000	500
7664-39-3	Hydrogen Fluoride.	.....	100	100
7722-84-1	Hydrogen Peroxide (Conc > 52%).	l	1,000	1,000
7783-07-5	Hydrogen Selenide.	.....	10	10
7783-06-4	Hydrogen Sulfide..	l	100	500
123-31-9	Hydroquinone.....	l	100	500/10,000
13463-40-6	Iron, Pentacarbonyl-.	.....	100	100
297-78-9	Isobenzan.....	.....	100	100/10,000
78-82-0	Isobutyronitrile..	h	1,000	1,000
102-36-3	Isocyanic Acid, 3,4-Dichlorophenyl Ester.	.....	500	500/10,000
465-73-6	Isodrin.....	.....	1	100/10,000
55-91-4	Isofluorphate.....	c	100	100
4098-71-9	Isophorone Diisocyanate..	.....	100	500
108-23-6	Isopropyl Chloroformate.	.....	1,000	1,000
119-38-0	Isopropylmethylpyrazolyl Dimethylcarbamate.	d	1	500
78-97-7	Lactonitrile.....	.....	1,000	1,000
21609-90-5	Leptophos.....	.....	500	500/10,000
541-25-3	Lewisite.....	c, h	10	10
58-89-9	Lindane.....	.....	1	1,000/10,000
7580-67-8	Lithium Hydride...	b	100	100
109-77-3	Malononitrile.....	.....	1,000	500/10,000
12108-13-3	Manganese, Tricarbonyl Methylcyclopentadienyl.	h	100	100
51-75-2	Mechlorethamine...	c	10	10
	Dicyanamide.			
75-79-6	Methyltrichlorosilane.	h	500	500
1129-41-5	Metolcarb.....	d	1	100/10,000
7786-34-7	Mevinphos.....	.....	10	500
315-18-4	Mexacarbate.....	.....	1,000	500/10,000
50-07-7	Mitomycin C.....	.....	10	500/10,000
6923-22-4	Monocrotophos.....	.....	10	10/10,000
2763-96-4	Muscimol.....	.....	1,000	500/10,000
505-60-2	Mustard Gas.....	h	500	500
13463-39-3	Nickel Carbonyl...	.....	10	1
54-11-5	Nicotine.....	c	100	100

65-30-5	Nicotine Sulfate..	.....	100	100/10,000
7697-37-2	Nitric Acid.....	.....	1,000	1,000
10102-43-9	Nitric Oxide.....	c	10	100
98-95-3	Nitrobenzene.....	l	1,000	10,000
1122-60-7	Nitrocyclohexane..	.....	500	500
10102-44-0	Nitrogen Dioxide..	.....	10	100
62-75-9	Nitrosodimethylamine.	h	10	1,000
991-42-4	Norbormide.....	.....	100	100/10,000
0	Organorhodium Complex (PMN-82-147).	.....	10	10/10,000
630-60-4	Ouabain.....	c	100	100/10,000
23135-22-0	Oxamyl.....	d	1	100/10,000
78-71-7	Oxetane, 3,3-Bis(Chloromethyl)-.	.....	500	500
2497-07-6	Oxydisulfoton.....	h	500	500
10028-15-6	Ozone.....	.....	100	100
1910-42-5	Paraquat Dichloride.	.....	10	10/10,000
2074-50-2	Paraquat Methosulfate.	.....	10	10/10,000
56-38-2	Parathion.....	c	10	100
298-00-0	Parathion-Methyl..	c	100	100/10,000
12002-03-8	Paris Green.....	.....	1	500/10,000
19624-22-7	Pentaborane.....	.....	500	500
2570-26-5	Pentadecylamine...	.....	100	100/10,000
79-21-0	Peracetic Acid....	.....	500	500
594-42-3	Perchloromethylmercaptan.	.....	100	500
108-95-2	Phenol.....	.....	1,000	500/10,000
4418-66-0	Phenol, 2,2[prime]-Thiobis(4-Chloro-6-Methyl)-.	.....	100	100/10,000
64-00-6	Phenol, 3-(1-Methylethyl)-, Methylcarbamate.	d	1	500/10,000
58-36-6	Phenoxarsine, 10,10[prime]-Oxydi-.	.....	500	500/10,000
696-28-6	Phenyl Dichloroarsine.	h	1	500
59-88-1	Phenylhydrazine Hydrochloride.	.....	1,000	1,000/10,000
62-38-4	Phenylmercury Acetate.	.....	100	500/10,000
2097-19-0	Phenylsilatrane...	h	100	100/10,000
103-85-5	Phenylthiourea....	.....	100	100/10,000
298-02-2	Phorate.....	.....	10	10
4104-14-7	Phosacetim.....	.....	100	100/10,000
947-02-4	Phosfolan.....	.....	100	100/10,000
75-44-5	Phosgene.....	l	10	10
732-11-6	Phosmet.....	.....	10	10/10,000
13171-21-6	Phosphamidon.....	.....	100	100
7803-51-2	Phosphine.....	.....	100	500

2703-13-1	Phosphonothioic Acid, Methyl-, O-Ethyl O-(4-(Methylthio) Phenyl) Ester.	.....	500	500
50782-69-9	Phosphonothioic Acid, Methyl-, S-(2 (Bis(1Methylethyl)Amino)Ethyl) O-Ethyl Ester.	.....	100	100
2665-30-7	Phosphonothioic Acid, Methyl-, O-(4-Nitrophenyl) O-Phenyl Ester.	.....	500	500
3254-63-5	Phosphoric Acid, Dimethyl 4-(Methylthio)Pheny l Ester.	.....	500	500
2587-90-8	Phosphorothioic Acid, O,O-Dimethyl-S-(2-Methylthio) Ethyl Ester.	c, g	500	500
7723-14-0	Phosphorus.....	b, h	1	100
10025-87-3	Phosphorus Oxychloride.	.....	1,000	500
10026-13-8	Phosphorus Pentachloride.	b	500	500
7719-12-2	Phosphorus Trichloride.	.....	1,000	1,000
57-47-6	Physostigmine.....	d	1	100/10,000
57-64-7	Physostigmine, Salicylate (1:1).	d	1	100/10,000
124-87-8	Picrotoxin.....	.....	500	500/10,000
110-89-4	Piperidine.....	.....	1,000	1,000
23505-41-1	Pirimifos-Ethyl...	.....	1,000	1,000
10124-50-2	Potassium Arsenite	.....	1	500/10,000
151-50-8	Potassium Cyanide.	b	10	100
506-61-6	Potassium Silver Cyanide.	b	1	500
2631-37-0	Promecarb.....	d, h	1	500/10,000
106-96-7	Propargyl Bromide.	.....	10	10
57-57-8	Propiolactone, Beta-.	.....	10	500
107-12-0	Propionitrile.....	.....	10	500
542-76-7	Propionitrile, 3-Chloro-.	.....	1,000	1,000
70-69-9	Propiophenone, 4-Amino-.	g	100	100/10,000
109-61-5	Propyl Chloroformate.	.....	500	500
75-56-9	Propylene Oxide...	l	100	10,000
75-55-8	Propyleneimine....	.....	1	10,000
2275-18-5	Prothoate.....	.....	100	100/10,000
129-00-0	Pyrene.....	c	5,000	1,000/10,000

140-76-1	Pyridine, 2-Methyl-5-Vinyl-.	.....	500	500
504-24-5	Pyridine, 4-Amino-	h	1,000	500/10,000
1124-33-0	Pyridine, 4-Nitro-,l-Oxide.	.....	500	500/10,000
53558-25-1	Pyriminil.....	h	100	100/10,000
14167-18-1	Salcomine.....	.....	500	500/10,000
107-44-8	Sarin.....	h	10	10
7783-00-8	Selenious Acid....	.....	10	1,000/10,000
7791-23-3	Selenium Oxychloride.	.....	500	500
563-41-7	Semicarbazide Hydrochloride.	.....	1,000	1,000/10,000
3037-72-7	Silane, (4-Aminobutyl)Diethoxymethyl-.	.....	1,000	1,000
7631-89-2	Sodium Arsenate...	.....	1	1,000/10,000
7784-46-5	Sodium Arsenite...	.....	1	500/10,000
26628-22-8	Sodium Azide (Na(N3)).	b	1,000	500
124-65-2	Sodium Cacodylate.	.....	100	100/10,000
143-33-9	Sodium Cyanide (Na(CN)).	b	10	100
62-74-8	Sodium Fluoroacetate.	.....	10	10/10,000
13410-01-0	Sodium Selenate...	.....	100	100/10,000
10102-18-8	Sodium Selenite...	h	100	100/10,000
10102-20-2	Sodium Tellurite..	.....	500	500/10,000
900-95-8	Stannane, Acetoxytriphenyl-.	g	500	500/10,000
57-24-9	Strychnine.....	c	10	100/10,000
60-41-3	Strychnine Sulfate	.....	10	100/10,000
3689-24-5	Sulfotep.....	.....	100	500
3569-57-1	Sulfoxide, 3-Chloropropyl Octyl.	.....	500	500
7446-09-5	Sulfur Dioxide....	1	500	500
7783-60-0	Sulfur Tetrafluoride.	.....	100	100
7446-11-9	Sulfur Trioxide...	b	100	100
7664-93-9	Sulfuric Acid.....	.....	1,000	1,000
77-81-6	Tabun.....	c, h	10	10
7783-80-4	Tellurium Hexafluoride.	k	100	100
107-49-3	TEPP.....	.....	10	100
13071-79-9	Terbufos.....	h	100	100
78-00-2	Tetraethyllead....	c	10	100
597-64-8	Tetraethyltin.....	c	100	100
75-74-1	Tetramethyllead...	c, 1	100	100
509-14-8	Tetranitromethane.	.....	10	500
10031-59-1	Thallium Sulfate..	h	100	100/10,000
6533-73-9	Thallous Carbonate	c, h	100	100/10,000
7791-12-0	Thallous Chloride.	c, h	100	100/10,000
2757-18-8	Thallous Malonate.	c, h	100	100/10,000
7446-18-6	Thallous Sulfate..	.....	100	100/10,000
2231-57-4	Thiocarbazide.....	.....	1,000	1,000/10,000

39196-18-4	Thiofanox.....	.....	100	100/10,000
297-97-2	Thionazin.....	.....	100	500
108-98-5	Thiophenol.....	.....	100	500
79-19-6	Thiosemicarbazide.	.....	100	100/10,000
5344-82-1	Thiourea, (2-Chlorophenyl)-.	.....	100	100/10,000
614-78-8	Thiourea, (2-Methylphenyl)-.	.....	500	500/10,000
7550-45-0	Titanium Tetrachloride.	.....	1,000	100
584-84-9	Toluene 2,4-Diisocyanate.	.....	100	500
91-08-7	Toluene 2,6-Diisocyanate.	.....	100	100
110-57-6	Trans-1,4-Dichlorobutene.	.....	500	500
1031-47-6	Triamiphos.....	.....	500	500/10,000
24017-47-8	Triazofos.....	.....	500	500
76-02-8	Trichloroacetyl Chloride.	.....	500	500
115-21-9	Trichloroethylsilane.	h	500	500
327-98-0	Trichloronate.....	k	500	500
98-13-5	Trichlorophenylsilane.	h	500	500
1558-25-4	Trichloro(Chloromethyl)Silane.	.....	100	100
27137-85-5	Trichloro(Dichlorophenyl) Silane.	.....	500	500
998-30-1	Triethoxysilane...	.....	500	500
75-77-4	Trimethylchlorosilane.	.....	1,000	1,000
824-11-3	Trimethylolpropane Phosphite.	h	100	100/10,000
1066-45-1	Trimethyltin Chloride.	.....	500	500/10,000
639-58-7	Triphenyltin Chloride.	.....	500	500/10,000
555-77-1	Tris(2-Chloroethyl)Amine.	h	100	100
2001-95-8	Valinomycin.....	c	1,000	1,000/10,000
1314-62-1	Vanadium Pentoxide	.....	1,000	100/10,000
108-05-4	Vinyl Acetate Monomer.	1	5,000	1,000
81-81-2	Warfarin.....	.....	100	500/10,000
129-06-6	Warfarin Sodium...	h	100	100/10,000
28347-13-9	Xylylene Dichloride.	.....	100	100/10,000
58270-08-9	Zinc, Dichloro(4,4-Dimethyl-5((((Methylamino) Carbonyl) Oxy)Imino)Pentane nitrile)-, (T-4)-.	.....	100	100/10,000
1314-84-7	Zinc Phosphide....	b	100	500

* Only the statutory or final RQ is shown. For more information, see 40 CFR table 302.4.

Notes:

a This chemical does not meet acute toxicity criteria. Its TPQ is set at 10,000 pounds.

b This material is a reactive solid. The TPQ does not default to 10,000 pounds for non-powder, non-molten, nonsolution form.

c The calculated TPQ changed after technical review as described in the technical support document.

d Indicates that the RQ is subject to change when the assessment of potential carcinogenicity and/or other toxicity is completed.

e Statutory reportable quantity for purposes of notification under SARA sect 304(a)(2).

f [Reserved]

g New chemicals added that were not part of the original list of 402 substances.

h Revised TPQ based on new or re-evaluated toxicity data.

j TPQ is revised to its calculated value and does not change due to technical review as in proposed rule.

k The TPQ was revised after proposal due to calculation error.

l Chemicals on the original list that do not meet toxicity criteria but because of their high production volume and recognized toxicity are considered chemicals of concern (``Other chemicals'').

[61 FR 20479, May 7, 1996, as amended at 68 FR 52984, Sept. 8, 2003]