Date: March 2, 2012
Regarding: **Metal Theft Claims and Questionable Claims from January 1, 2009 to December 31, 2011**
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This *Fore*CAST[SM] report analyzes copper, bronze, brass, and aluminum theft claims identified in ISO ClaimSearch and NICB Questionable Claims (QCs) from January 1, 2009 to December 31, 2011 in order to identify any trends or patterns that may exist in the data.

Executive Summary

There were a total of 25,083 claims identified for the theft of copper, bronze, brass, or aluminum submitted to ISO ClaimSearch between January 1, 2009 and December 31, 2011. Of the 25,083 total claims, 96.1% pertained to the theft of copper. Fifty-five percent of the claims were on commercial policies, while 45% were on personal policies. When the number of metal theft claims per month and monthly average copper prices are compared, the number of claims filed is found to have a statistically significant correlation with the price of copper.[1]

From January 1, 2009 to December 31, 2011, there were 237 NICB Questionable Claims submitted involving the theft of copper, aluminum, brass, or bronze. Of the 237 total Questionable Claims, 94.5% pertained to the theft of copper. Sixty-six percent were on personal policies, while 31% were on commercial policies.

Ohio was the loss state in the most metal theft claims in ISO ClaimSearch, with 19% more claims than Texas, the state with the 2nd largest number of claims. However, in Questionable Claims Ohio ranked 4th, while Illinois topped the rankings. Illinois had 62% more QCs than Texas, the 2nd ranked state in Questionable Claims. When ranked by number of ISO ClaimSearch metal theft claims per 10,000 residents, Rhode Island tops the rankings, followed by Ohio and Delaware. Rhode Island had 25% more metal theft claims per 10,000 residents than Ohio did. The number of claims per 10,000 residents by state was found to be correlated[2] with estimated state drug abuse/dependence rates.

The Chicago-Naperville-Joliet, IL-IN-WI Core Based Statistical Area (CBSA)[3] had both the largest number of ISO ClaimSearch metal theft claims and NICB Questionable Claims. The New York-Northern New Jersey-Long Island, NY-NJ-PA CBSA ranked 2nd in ISO ClaimSearch metal theft claims, while Atlanta-Sandy Springs-Marietta, GA ranked 2nd in NICB Questionable Claims.

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[1] The Pearson's correlation coefficient between the number of metal theft claims per month and the average monthly copper price was .903 (significant at the .001 level).

[2] The Pearson's correlation coefficient between the number of metal claims per 10,000 residents by state and the estimated 2009 percentages of drug abuse/dependence of individuals 12 and older was .263 (significant at the .063 level).

[3] Core Based Statistical Areas (CBSAs) are defined by the United States Office of Management and Budget. CBSAs consist of a core urban area with a population of at least 10,000 and the surrounding communities that have strong economic and social ties to the core area.

Metal Theft Overview

Law enforcement agencies across the country and around the globe had been seeing increased numbers of thefts of metals such as copper, bronze, brass, and aluminum in the years leading up to economic downturn in 2008. Metal prices have risen once again, and so have the number of reported metal thefts. Thieves have been willing to go to almost any length to obtain the metal. They have stripped sheets of metal from building rooftops, stolen memorial decorations from cemeteries, ripped apart air conditioners for the copper coils within, and stripped homes and buildings of wiring and piping. Construction sites are frequent victims because metal is often left on site unguarded and relatively unsecured. Farm equipment such as irrigation pipes and fixtures are also targeted. The thieves can endanger the safety of themselves and those in the surrounding community, and weaken the infrastructure vital to our everyday lives. Unoccupied buildings have exploded due to gas lines being stolen, stretches of highway have been left dark after thieves stole wiring from utility poles, and tornado warning sirens have been rendered inoperable due to wiring being stolen. Thieves have removed wiring from traffic and railway signals and even posed as utility workers in order to remove large sections of thick utility cable from the sewers beneath city streets. Some thieves have been electrocuted trying to steal live electrical wiring.

The thieves are often drug addicts and steal these materials to sell them to scrap dealers and net themselves some quick cash. In other cases, the crimes are committed by organized groups or opportunistic thieves, such as employees of businesses that work with metal. Frequently the damage caused by such thefts is several times the value of the metal stolen, leaving the victims with hefty repair costs which are often passed on to insurance companies. The U.S. Department of Energy has estimated that metal theft costs U.S. businesses around $1 billion a year[i]. Some states and cities have taken measures to combat metal theft, such as requiring scrap yards to check identification of any individual who sells them scrap metal, note the license plate of the vehicle used to transport the metal, maintain the information on file, pay the seller with check instead of cash, or retain the scrap metal for a designated amount of time to allow law enforcement an opportunity to identify stolen materials before it is recycled. However, identifying stolen metal is not always possible and opposition to these laws from the scrap industry has made it difficult to get effective measures passed in some areas. Even in areas where such laws exist, some unscrupulous scrap dealers do not abide by them and enforcement of the laws has not always been a major priority until recently when increases in metal thefts brought more attention to the problem. Some states and local governments have increased the penalties associated with metal theft or are charging thieves with additional crimes if the theft caused damage to infrastructure or created a hazard to the public. These are just a few examples of the measures put in place to try to reduce the incidence of metal theft.

Metal Theft Claims in ISO ClaimSearch

This section of the report analyzes the claims identified in ISO ClaimSearch as involving the theft of copper, aluminum, brass, or bronze. ISO ClaimSearch is a database designed to help insurers, self-insurers, law enforcement agencies, and state fraud bureaus detect and prevent fraud, evaluate risk, and process meritorious claims by providing a central repository of claims. Insurers and other agencies with access can query this database to research prior loss histories, identify claims patterns, and detect suspect claims.

A total of 25,083 claims for the theft of copper, bronze, brass, or aluminum were identified in ISO ClaimSearch between January 1, 2009 and December 31, 2011[4]. Of the 25,083 total claims, 24,103 related to copper, 817 to aluminum, 172 to brass, and 130 to bronze[5]. There were 13,714 commercial policy claims (55%), while 11,359 (45%) were on personal policies[6]. The following tables show the number of claims containing common keywords identified in the data[7] and the number of claims relating to each metal:

Common Keywords	2009-2011 Claims
"pipe" or "piping"	5,648
"a/c" or " ac " or "air cond"	4,034
"wire" or "wiring"	4,716
"plumbing"	2,853
"tube" or "tubing"	621
"line"	711
"coil"	306
"roof"	361

Metal Type	2009-2011 Claims
Copper	24,103
Aluminum	817
Brass	172
Bronze	130

The following chart shows the number of metal theft claims per month for the January 1, 2009 through December 31, 2011 time period. It should be noted that that there is often a delay before claims are entered into ISO ClaimSearch, and therefore some months may be underrepresented in the data, particularly November and December 2011[8].

Metal Theft Claim in ISO ClaimSearch by Month

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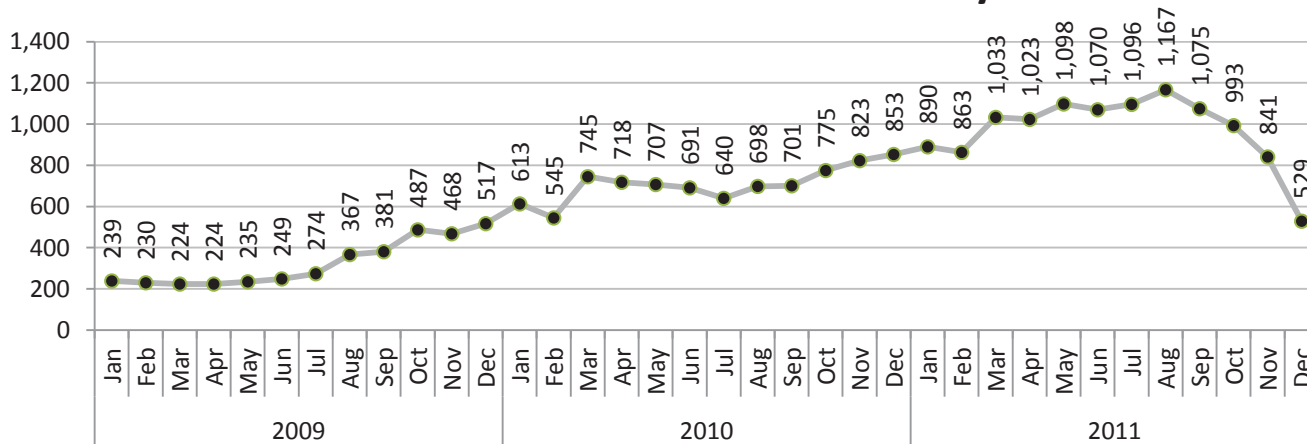
[4] There is no exact method for extracting metal theft claims from ISO ClaimSearch. For this report, a claim was determined to be a metal theft claim if the loss description for the claim contained "copp", "brass", "bronz", or "alum", as well as one of the terms "stole", "theft", "thief", "thieves", "took", "steal", or "missing". Loss types that were seen to include almost exclusively unrelated claims were filtered from the data, as well as claims that contained terms found to result in false positives. It should also be noted that slightly different metal terms were used than in previous years' reports. This change was made in order to compile a more complete dataset.

[5] Some claims contained more than one of the metal terms.

[6] 10 claims listed policy types that could not be identified as either commercial or personal in nature.

[7] Some claims may contain more than one of the keywords identified, while others may not contain any.

[8] Note: There was an average delay between a claim occurring and it being entered into ISO ClaimSearch of 48.3 days, therefore the latter months of the data are likely underreported, particularly November and December 2011. Of the metal thefts reported between 1/1/2009 and 12/31/2011, 1,001 actually occurred prior to 1/1/2009 and were not included in the graph.

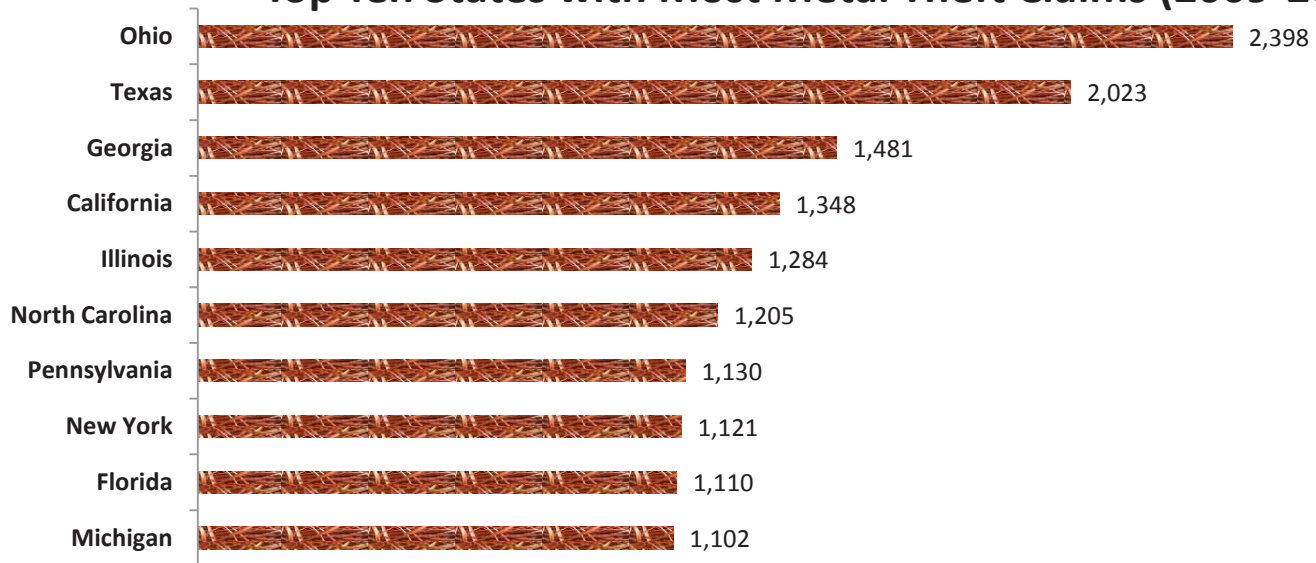When compared with the graph of copper prices for the same time period a strong correlation between metal prices and the number of metal theft claims was found to exist[9].

COMEX Copper Price Monthly Averages
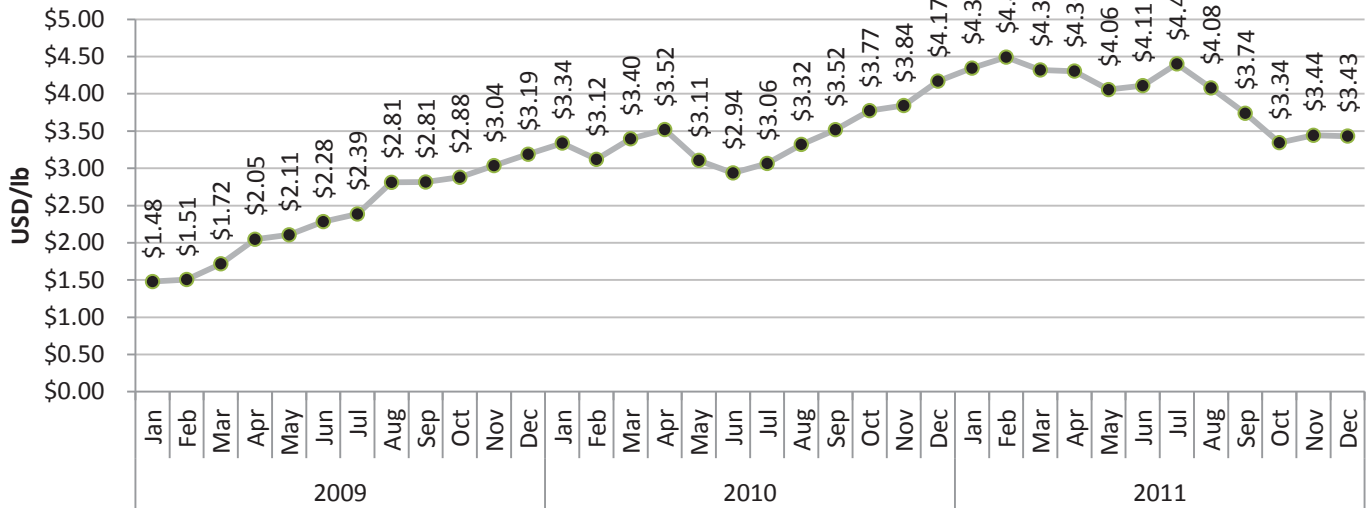
The following chart shows the 10 loss states associated with the most metal theft claims in ISO ClaimSearch[10]:

Top Ten States with Most Metal Theft Claims (2009-2011)

State	Claims
Ohio	2,398
Texas	2,023
Georgia	1,481
California	1,348
Illinois	1,284
North Carolina	1,205
Pennsylvania	1,130
New York	1,121
Florida	1,110
Michigan	1,102

Ohio was the state with the greatest number of metal theft claims in ISO ClaimSearch, followed by Texas and Georgia.

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[9] Copper price data was obtained from http://www.iwgcopper.com/price-history/index.cfm. The Pearson's correlation coefficient between the number of metal theft claims per month and the average monthly copper price was .903 (significant at the .001 level).

[10] Note: 23 claims did not have the loss state field populated or it was populated with invalid entries.

The following table, in alphabetical order by state, shows the number of claims per state for all 50 states and the District of Columbia, as well as the number of claims per 10,000 residents:

State	2009-2011 Claims	Population[11]	2009-2011 Claims / 10,000 Residents
Alabama	615	4,802,740	1.281
Alaska	3	722,718	0.042
Arizona	518	6,482,505	0.799
Arkansas	420	2,937,979	1.430
California	1,348	37,691,912	0.358
Colorado	220	5,116,796	0.430
Connecticut	460	3,580,709	1.285
Delaware	185	907,135	2.039
District of Columbia	29	617,996	0.469
Florida	1,110	19,057,542	0.582
Georgia	1,481	9,815,210	1.509
Hawaii	12	1,374,810	0.087
Idaho	19	1,584,985	0.120
Illinois	1,284	12,869,257	0.998
Indiana	559	6,516,922	0.858
Iowa	110	3,062,309	0.359
Kansas	237	2,871,238	0.825
Kentucky	778	4,369,356	1.781
Louisiana	392	4,574,836	0.857
Maine	166	1,328,188	1.250
Maryland	480	5,828,289	0.824
Massachusetts	667	6,587,536	1.013
Michigan	1,102	9,876,187	1.116
Minnesota	224	5,344,861	0.419
Mississippi	120	2,978,512	0.403
Missouri	885	6,010,688	1.472
Montana	6	998,199	0.060
Nebraska	104	1,842,641	0.564
Nevada	219	2,723,322	0.804
New Hampshire	125	1,318,194	0.948
New Jersey	767	8,821,155	0.870
New Mexico	115	2,082,224	0.552
New York	1,121	19,465,197	0.576
North Carolina	1,205	9,656,401	1.248
North Dakota	5	683,932	0.073
Ohio	2,398	11,544,951	2.077
Oklahoma	262	3,791,508	0.691
Oregon	46	3,871,859	0.119
Pennsylvania	1,130	12,742,886	0.887
Rhode Island	272	1,051,302	2.587
South Carolina	496	4,679,230	1.060
South Dakota	5	824,082	0.061
Tennessee	361	6,403,353	0.564
Texas	2,023	25,674,681	0.788
Utah	103	2,817,222	0.366
Vermont	66	626,431	1.054
Virginia	363	8,096,604	0.448
Washington	138	6,830,038	0.202
West Virginia	95	1,855,364	0.512
Wisconsin	207	5,711,767	0.362
Wyoming	4	568,158	0.070

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[11] US Census Bureau - Annual Estimates of the Population for the United States, Regions, States, and Puerto Rico: July 1, 2011

When ranked by claims per 10,000 residents, Rhode Island moves to the top of the rankings, followed by Ohio and Delaware. The number of metal theft claims by state per 10,000 residents was found to be correlated[12] with estimated rates of drug abuse/dependence per state of individuals 12 or older[13]. Of course, there are many factors contributing to the metal theft rates of a given area. Drug abuse may not be the primary factor influencing metal theft, but a correlation was found to exist.

The following chart shows the 10 CBSAs in the most metal theft claims in ISO ClaimSearch[14]:

Top Ten CBSAs with Most Metal Theft Claims (2009-2011)

CBSA	Claims
Chicago-Naperville-Joliet, IL-IN-WI	963
New York-Northern New Jersey-Long Island, NY-NJ-PA	921
Atlanta-Sandy Springs-Marietta, GA	823
Dallas-Fort Worth-Arlington, TX	674
Detroit-Warren-Livonia, MI	587
Houston-Sugar Land-Baytown, TX	558
St. Louis, MO-IL	545
Cleveland-Elyria-Mentor, OH	542
Cincinnati-Middletown, OH-KY-IN	529
Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	506

The Chicago-Naperville-Joliet, IL-IN-WI CBSA is the CBSA with the largest number of metal theft claims, followed by the New York-Northern New Jersey-Long Island, NY-NJ-PA CBSA.

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[12] The Pearson's correlation coefficient between the number of metal claims per 10,000 residents by state and the estimated 2009 percentages of drug abuse/dependence of individuals 12 and older was .263 (significant at the .063 level).
[13] SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health, 2008 and 2009
[14] Note: 4,070 metal theft claims, 16.2% of the total number, either did not list a loss city or listed one that is not included in a CBSA.
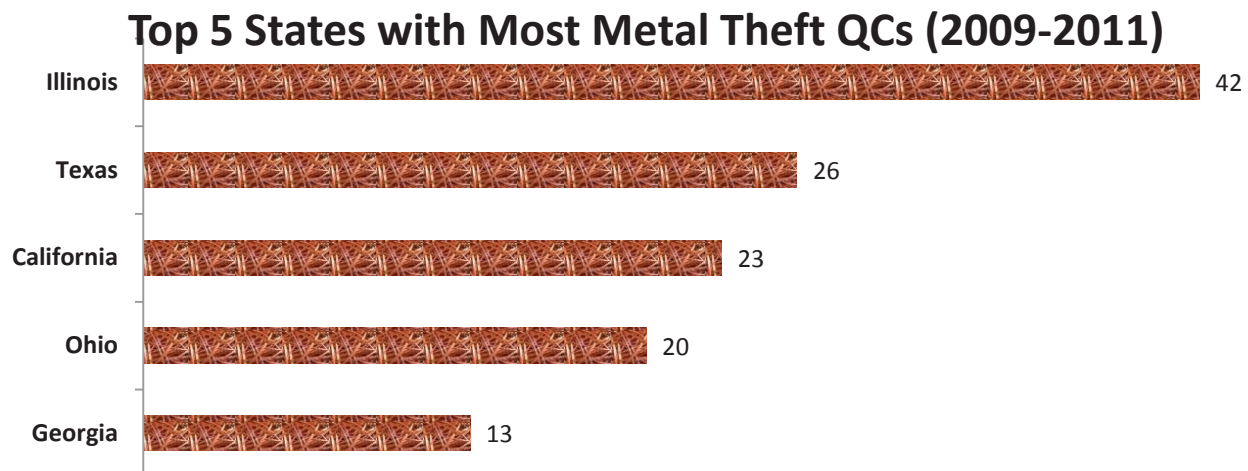
Metal Theft Claims Submitted as NICB Questionable Claims

NICB member companies can submit claims that they believe may contain some element of fraud to NICB as Questionable Claims. This section of the report analyzes the Questionable Claims identified as involving the theft of copper, brass, bronze, or aluminum. There were a total of 237 metal theft Questionable Claims submitted between January 1, 2009 and December 31, 2011[15]. Of the 237 total Questionable Claims, 224 related to copper, 14 to aluminum, 4 to brass, and 2 to bronze[16]. There were 157 Questionable Claims (66%) on personal policies, while 74 (31%) were on commercial policies[17]. The data was queried further to determine which types of items were most commonly stolen. The following tables show the number of claims containing common keywords identified in the data[18] and the number of QCs relating to each metal:

Common Keywords	2009-2011 QCs
"pipe" or "piping"	130
"wire" or "wiring"	92
"a/c" or " ac " or "air cond"	39
"plumbing"	32
"line"	31
"roof"	22

Metal Type	2009-2011 QCs
Copper	224
Aluminum	14
Brass	4
Bronze	2

The following chart shows the 5 loss states associated with the most metal theft Questionable Claims[19]:

Top 5 States with Most Metal Theft QCs (2009-2011)

State	QCs
Illinois	42
Texas	26
California	23
Ohio	20
Georgia	13

Illinois was the state of loss in the largest number of metal theft related NICB Questionable Claims, followed by Texas and California.

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[15] There is no exact method for extracting metal theft claims from ISO ClaimSearch. For this report, a Questionable Claim was determined to be a metal theft claim if the loss description for the claim contained "copp", "brass", "bronz", or "alum", as well as one of the terms "stole", "theft", "thief", "thieves", "took", "steal", or "missing". Loss types that were seen to include almost exclusively unrelated claims were filtered from the data, as well as claims that contained terms found to result in false positives. It should also be noted that slightly different metal terms were used than in previous years' reports. This change was made in order to compile a more complete dataset.

[16] Some claims contained more than one of the metal terms.

[17] 6 Questionable Claims did not list a policy type.

[18] Some QCs may contain more than one of the keywords listed, while others may not include any.

[19] Note: 4 Questionable Claims did not have the loss state field populated or it was populated with invalid entries.

The following table shows the number of QCs for all 50 states and the District of Columbia, as well as the ratio of QCs to every 1,000 ISO ClaimSearch claims per state.
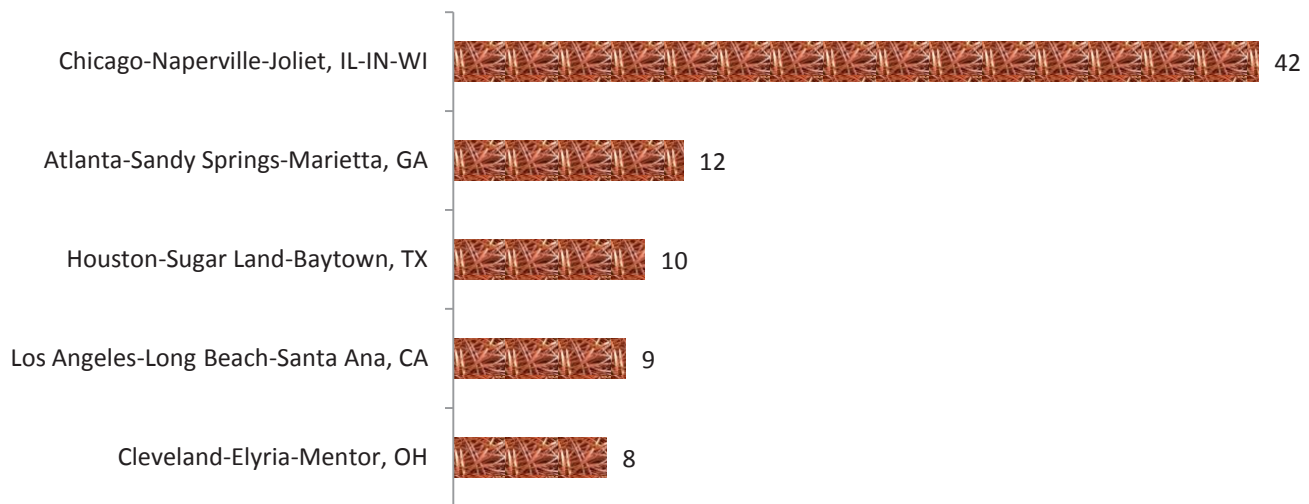
State	2009-2011 QCs	2009-2011 ISO Claims	2009-2011 QCs / 1,000 Claims
Alabama	6	615	9.76
Alaska	0	3	0.00
Arizona	2	518	3.86
Arkansas	0	420	0.00
California	23	1,348	17.06
Colorado	2	220	9.09
Connecticut	5	460	10.87
Delaware	0	185	0.00
District of Columbia	1	29	34.48
Florida	7	1,110	6.31
Georgia	13	1,481	8.78
Hawaii	0	12	0.00
Idaho	0	19	0.00
Illinois	42	1,284	32.71
Indiana	4	559	7.16
Iowa	1	110	9.09
Kansas	3	237	12.66
Kentucky	1	778	1.29
Louisiana	2	392	5.10
Maine	1	166	6.02
Maryland	1	480	2.08
Massachusetts	1	667	1.50
Michigan	9	1,102	8.17
Minnesota	5	224	22.32
Mississippi	0	120	0.00
Missouri	8	885	9.04
Montana	0	6	0.00
Nebraska	0	104	0.00
Nevada	3	219	13.70
New Hampshire	0	125	0.00
New Jersey	2	767	2.61
New Mexico	3	115	26.09
New York	8	1,121	7.14
North Carolina	7	1,205	5.81
North Dakota	0	5	0.00
Ohio	20	2,398	8.34
Oklahoma	3	262	11.45
Oregon	0	46	0.00
Pennsylvania	9	1,130	7.96
Rhode Island	2	272	7.35
South Carolina	2	496	4.03
South Dakota	0	5	0.00
Tennessee	2	361	5.54
Texas	26	2,023	12.85
Utah	1	103	9.71
Vermont	0	66	0.00
Virginia	5	363	13.77
Washington	3	138	21.74
West Virginia	0	95	0.00
Wisconsin	0	207	0.00
Wyoming	0	4	0.00

The District of Columbia and Illinois had the highest proportion of NICB Questionable Claims to the total number of metal theft claims in ISO ClaimSearch.

The following chart shows the 5 CBSAs in the most metal theft Questionable Claims[20]:

Top 5 CBSAs with Most Metal Theft QCs (2009-2011)

CBSA	QCs
Chicago-Naperville-Joliet, IL-IN-WI	42
Atlanta-Sandy Springs-Marietta, GA	12
Houston-Sugar Land-Baytown, TX	10
Los Angeles-Long Beach-Santa Ana, CA	9
Cleveland-Elyria-Mentor, OH	8

Chicago-Naperville-Joliet, IL-IN-WI was the CBSA with the greatest number of metal theft Questionable Claims, with more than 3 times the QCs of the 2nd ranking CBSA, Atlanta-Sandy Springs-Marietta, GA.

Conclusions

There were a total of 25,083 claims for the theft of copper, bronze, brass, or aluminum submitted to ISO ClaimSearch between January 1, 2009 and December 31, 2011. Of the 25,083 total claims, 96.1% pertained to the theft of copper, 3.3% to aluminum, 0.7% to brass, and 0.5% to bronze. The commercial policy claims were 55%, while 45% were on personal policies. When the number of metal theft claims and copper prices are compared, a statistically significant correlation was found to be present[21].

A total of 237 NICB Questionable Claims were identified as involving the theft of copper, aluminum, brass, or bronze. Of the 237 total Questionable Claims, 94.5% pertained to the theft of copper, 5.9% pertained to aluminum, 1.7% pertained to brass, and 0.8% pertained to bronze. There were 157 Questionable Claims (66%) on personal policies, while 74 (31%) were on commercial policies. One point of interest is that more than half of the ISO ClaimSearch metal theft claims were on commercial policies, however in the Questionable Claims dataset approximately 2 of 3 Questionable Claims were on personal policies.

Ohio was the loss state in the most metal theft claims in ISO ClaimSearch, with 19% more claims than Texas, the state with the 2nd largest number of claims. However, in Questionable Claims Ohio ranked 4th, while Illinois topped the rankings. Illinois had 62% more QCs than Texas, the 2nd ranked state in Questionable Claims. When ranked by number of ISO ClaimSearch metal theft claims per 10,000 residents, Rhode Island tops the rankings, followed by Ohio and Delaware. Rhode Island had 25% more metal theft claims per 10,000 residents than Ohio did. The number of metal theft claims by state per 10,000 residents was found to be correlated[22] with estimated rates of drug abuse/dependence per state for 2009.

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[20] Note: 20 metal theft Questionable Claims either did not list a loss city or listed one that is not included in a CBSA.

[21] The Pearson's correlation coefficient between the number of metal theft claims per month and the average monthly copper price was .903 (significant at the .001 level).

[22] The Pearson's correlation coefficient between the number of metal claims per 10,000 residents by state and the estimated 2009 percentages of drug abuse/dependence of individuals 12 and older was .263 (significant at the .063 level).

The Chicago-Naperville-Joliet, IL-IN-WI CBSA had both the largest number of ISO ClaimSearch metal theft claims and NICB Questionable Claims. The New York-Northern New Jersey-Long Island, NY-NJ-PA CBSA ranked 2nd in ISO ClaimSearch metal theft claims, while Atlanta-Sandy Springs-Marietta, GA ranked 2nd in NICB Questionable Claims.

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[i] (U.S. Dept. of Energy, 2007)

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